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# Stock Market Manipulation and Its Regulation

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# Stock Market Manipulation and Its Regulation

Merritt B. Fox,<sup>†</sup> Lawrence R. Glosten,<sup>‡</sup> and Gabriel V. Rauterberg<sup>\*</sup>

*More than eighty years after federal law first addressed stock market manipulation, federal courts remain fractured by disagreement and confusion about manipulation law’s most foundational questions. Only last year, plaintiffs petitioned the Supreme Court to resolve a sharp split among the federal circuits concerning manipulation law’s central question: whether trading activity alone can ever be considered illegal manipulation under federal law. Academics have been similarly confused—economists and legal scholars cannot agree on whether manipulation is possible in principle; let alone on how, if it is, to address it properly in practice.*

*This Article offers an analytical framework for understanding manipulation, which resolves these questions, clarifies federal law, and can guide regulators in successfully prosecuting financial law’s most intractable wrong. We draw on the tools of microstructure economics and the theory of the firm to provide a synthesis of the various distinct forms of manipulation, identify who is harmed by each form, and evaluate their social welfare effects. This Article thus lays the foundation for a renewed understanding of manipulation and its place within securities regulation.*

I. Overview.....	74
A. Types of Manipulation .....	74
1. Naked Open Market Manipulation .....	74
2. Open Market Manipulation with an External Interest .....	75
3. Misstatement Manipulation .....	75
B. The Role of Purpose.....	76
C. The Extent and Nature of Manipulation .....	77
II. The Normative Framework .....	80
A. Social Goals .....	80
B. The Use of Ex Post and Ex Ante Analysis.....	81
C. Market Characteristics that Impact on These Goals.....	82

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1. Price Accuracy .....	83
2. Liquidity .....	84
III. The Workings of the Equity Market .....	86
A. <i>Market Participants and Their Reasons for Trading</i> .....	86
1. Informed Traders .....	86
2. Uninformed Traders .....	87
3. Noise Traders .....	88
4. Anti-noise Traders .....	88
5. Professional Liquidity Suppliers .....	89
B. <i>Trading Venues and Orders</i> .....	89
C. <i>The Economics of Liquidity Provision</i> .....	90
1. The Liquidity Supply Business .....	90
2. Transacting with Informed Versus Uninformed Traders .....	90
3. How Liquidity Suppliers Set Their Bids and Offers .....	91
4. The Pattern of Transaction Prices in the Presence of Informed Trading .....	92
IV. Naked Open Market Manipulation .....	93
A. <i>Wealth Transfers: Fairness and Efficiency</i> .....	94
1. Ex post Perspective .....	94
2. Ex ante Perspective .....	97
3. Fairness Considerations .....	100
4. Efficiency Considerations .....	101
B. <i>Are There Expected Profits?</i> .....	103
1. The Fischel and Ross Arguments as to Why Profitable Manipulation Is Impossible .....	103
2. Can an Asymmetric Price Response Ever Be Anticipated .....	104
C. <i>The Appropriateness of Legal Sanctions</i> .....	106
V. Open Market Manipulation with an External Interest .....	107
A. <i>The Example of United States v. Mulheren</i> .....	108
B. <i>Wealth Transfers: Their Fairness and the Efficiency Effects of         Their Incentives</i> .....	109
C. <i>The Appropriateness of Imposing Legal Sanctions</i> .....	111
VI. Misstatement Manipulation .....	111
A. <i>Misstatement Manipulation as a Kind of Informed Trading</i> .....	112
B. <i>Wealth Transfers: Their Fairness and the Efficiency         Implications of the Incentives Created</i> .....	112
C. <i>The Appropriateness of Legal Sanctions</i> .....	113
VII. The Law of Securities Manipulation .....	114
A. <i>Open Market Manipulation</i> .....	114
1. Section 9(a) .....	114
2. Section 10(b) .....	118
B. <i>Assessing the Law on Open Market Manipulation</i> .....	122
C. <i>Misstatement Manipulation</i> .....	123
Conclusion .....	125

Introduction

More than eighty years after federal law first addressed stock market manipulation, the federal courts remain fractured by disagreement and confusion concerning manipulation law’s most foundational issues.<sup>1</sup> There remains, for example, a sharp split among the federal circuits concerning manipulation law’s central question: *Whether trading activity alone can ever be considered illegal manipulation under federal law?*<sup>2</sup> Academics have been similarly confused—economists and legal scholars cannot agree on whether manipulation is even possible in principle, let alone on how to properly address it in practice.<sup>3</sup>

This confusion is particularly striking because preventing manipulation was a primary motivation for enacting the U.S. securities laws. In the midst of the Great Depression, manipulation struck Congress and varied commentators as a principal cause of the 1929 stock market crash and the ensuing economic collapse.<sup>4</sup> As a result, the Securities Exchange Act of 1934 (the “Exchange Act”) expressly prohibits manipulation in its Sections 9 and 10(b).<sup>5</sup> The continued confusion is also striking because if one uses the rough proxy of SEC enforcement, *the problem of manipulation is of a similar scale to insider trading*. In its statistics for the last five years, the SEC reported bringing a combined 237 civil and administrative enforcement actions for insider trading and 229 for market manipulation.<sup>6</sup> Yet, while there is a vast legal and economic literature addressing insider trading, efforts to analyze manipulation have been far more limited.

The difficulties for manipulation law begin with the statutory provisions themselves. The Exchange Act gives remarkably little guidance as to the

1. See *infra* Section VII.A (discussing splits among the federal circuit courts of appeal).

2. See *infra* note 142 and accompanying text (discussing a manipulation petition to the Supreme Court).

3. The literature on manipulation features a chorus of commentators arguing about the definition and usefulness of the concept of manipulation. See, e.g., Daniel R. Fischel & David Ross, *Should the Law Prohibit “Manipulation” in Financial Markets?*, 105 HARV. L. REV. 503 (1991) (famously arguing that the concept of manipulation should be abandoned); Craig Pirrong, *Squeezes, Corpses, and the Anti-Manipulation Provisions of the Commodity Exchange Act*, 17 REG., no. 4, 1994 at 54 (“[T]o define just what manipulation means . . . is a more difficult task than one might think, because the term ‘manipulation’ is used very imprecisely and indiscriminately.”).

4. See, e.g., Fischel & Ross, *supra* note 3, at 503 (“The drafters of the Securities Act of 1933 and the Securities Exchange Act of 1934 . . . were convinced that there was a direct link between excessive speculation, the stock market crash of 1929, and the Great Depression of the 1930s.”); William A. Roach, Jr., *Hedge Fund Regulation: “What Side of the Hedges Are You on?”*, 40 U. MEM. L. REV. 165, 178 (2009) (“The shocking results of the [congressional] investigation uncovered high levels of market manipulation and led Congress to pass the first federal securities laws, the Securities Act of 1933.”). However, there is significant debate as to whether significant manipulation had been in fact occurring in the years preceding the Great Depression. See PAUL G. MAHONEY, *WASTING A CRISIS: WHY SECURITIES REGULATION FAILS* 100-18 (2015); Guolin Jiang et al., *Market Manipulation: A Comprehensive Study of Stock Pools*, 77 J. FIN. ECON. 147, 168-69 (2005).

5. See 15 U.S.C. §§ 78i(a)(2), 78j(b) (2012).

6. Calculations made by authors and on file with them.

conduct the statutory provisions cover. Section 9(a)(2) prohibits effecting “a series of transactions” in a security (i) that “creat[e] actual or apparent active trading” or affect its price, (ii) “for the purpose of inducing the purchase or sale of such security by others.”<sup>7</sup> The first half of the proscription targets conduct that will be involved in virtually *any* trading strategy: buying or selling a security inherently involves the creation of an actual trade and frequently affects its price. The bite of the prohibition is thus left to the vague clause relating to purpose. Similarly, Section 10(b) baldly prohibits the use, in violation of a SEC rule, of “any manipulative or deceptive device” in connection with trading a security.<sup>8</sup> The statute, however, fails to define “manipulative,” and the only SEC attempt to do so in rulemaking simply refers back again to Section 9.<sup>9</sup>

Surprisingly little progress has been made in defining these statutory terms since the Exchange Act’s passage. As a result, manipulation may be the most controversial concept in securities law. Many commentators believe that it is simply not a sufficiently meaningful concept to justify a ban on any kind of trading.<sup>10</sup> Other jurists, legal scholars, and economists believe manipulation is a useful concept, but have struggled to define the term and identify its harms, typically using an overly broad or circular definition, constrained in some cases by “I know it when I see it” bromides.<sup>11</sup>

7. § 78i(a)(2).

8. § 78j(b).

9. *Id.*

10. *E.g.*, Fischel & Ross, *supra* note 3, at 506-07 (“[N]o satisfactory definition of [manipulation] exists . . . the concept of manipulation should be abandoned.”); Robert C. Lower, *Disruptions of the Futures Market: A Comment on Dealing with Market Manipulation*, 8 YALE J. ON REG. 391, 392 (1991) (“Manipulation is difficult to define . . . [D]rawing a line between healthy economic behavior and that which is offensive has proved to be too subjective and imprecise to produce an effective regulatory tool.”). Even the Supreme Court has at times appeared to collapse any distinction between a “manipulative” device and a “deceptive” one by requiring that any violation of Section 10(b) involves a misrepresentation. *See* Schreiber v. Burlington N., Inc., 472 U.S. 1, 8 n.6 (1985) (“Congress used the phrase ‘manipulative or deceptive’ in § 10(b) and we have interpreted ‘manipulative’ in that context to require misrepresentation.”); *Santa Fe Indus., Inc. v. Green*, 430 U. S. 462, 476-77 (1977); *infra* Part VII; *see also* Steve Thel, *Regulation of Manipulation Under Section 10(b)*, 1988 COLUM. BUS. L. REV. 359 (1988) (noting the difficulties of concisely defining manipulation under federal securities law).

11. *See, e.g.*, 2 THOMAS LEE HAZEN, THE LAW OF SECURITIES REGULATION § 12.1 (6th ed. 2010) (“The purpose of the various statutes and rules prohibiting market manipulation is to prevent activities that rig the market and to thereby facilitate operation of the ‘natural law’ of supply and demand . . . manipulation consists of any intentional interference with supply and demand.”). Another formulation defines manipulation “as *exercising unsupported price pressure* because this creates societal costs.” Mathijs Nelemans, *Redefining Trade-Based Market Manipulation*, 42 VAL. U. L. REV. 1169, 1183 (2008) (emphasis added). In these formulations, the normative criticism of the relevant conduct is doing all the work in identifying exactly what kind of behavior is supposed to be prohibited, yet no guidance is provided as to what in fact violates the norm. Alternatively, the definition can be too narrow. For example, the requirement proposed by two well-known microstructure economists is that a strategy is manipulative only if it reduces both price accuracy and liquidity. Albert Kyle & S. Viswanathan, *How to Define Illegal Price Manipulation*, 98 AM. ECON. REV. 274, 274 (2008). This leaves out of the prohibition strategies that increase one and reduce the other, and the negative social impact of the market characteristic that is reduced is greater than the positive impact from the one that is increased. Attempts to define manipulation in related regulatory areas such as commodities regulation

The result is a legal framework that lacks precision, cogency, and consistency of application. The associated confusion as to what constitutes illegal manipulation produces unpredictable and disparate outcomes for cases with similar facts.<sup>12</sup> Disparate outcomes and unpredictability raise issues of fairness. More fundamentally, a confused standard with a poorly articulated normative basis produces enforcement that is both under-inclusive and over-inclusive in comparison to whatever is the ideal baseline. The law thus does a bad job of discouraging socially harmful transactions and enabling socially beneficial ones. The importance of improving securities law in these regards is highlighted by the dollar magnitudes involved in recent cases in closely related areas of financial regulation. In April 2015, for example, the Department of Justice charged a single individual with manipulative “spoofing” alleged to have “significantly” contributed to 2010’s “Flash Crash,” whereby U.S. equity market prices temporarily declined by more than nine percent.<sup>13</sup> The economist Adam Clark-Joseph recently detailed how a subset of high-frequency traders in commodities markets make a significant fraction of their profits from arguably manipulative activities.<sup>14</sup> The last decade has also seen a number of large alleged manipulations involving financial benchmarks, resulting in multibillion dollar fines or settlements, some of the largest ever paid by financial institutions.<sup>15</sup>

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show some of the same problems. *See, e.g., In re Henner*, 30 Agric. Dec. 1151 (U.S.D.A. 1971) (“‘Manipulation’ is a vague term used in a wide and inclusive manner, possessing varying shades of meaning, and almost always conveying the idea of blame-worthiness deserving of censure.”); 2 TIMOTHY J. SNIDER, REGULATION OF THE COMMODITIES FUTURES AND OPTIONS MARKETS 12.01, at 12-5 (2d ed. 1995) (calling the law of manipulation “a murky miasma of questionable analysis and unclear effect”); *see also* Jonathan R. Macey & Maureen O’Hara, *From Markets to Venues: Securities Regulation in an Evolving World*, 58 STAN. L. REV. 563, 588-90 (2005) (discussing manipulation’s negative effects on liquidity); Edward T. McDermott, *Defining Manipulation in Commodity Futures Trading: The Futures “Squeeze,”* 74 NW. U. L. REV. 202, 205 (1979) (calling manipulation law “an embarrassment—confusing, contradictory, complex, and unsophisticated”); Yesha Yadav, *The Failure of Liability in Modern Markets*, 102 VA. L. REV. 1031, 1041 (2016).

12. *See infra* Part VII.

13. Nathaniel Popper & Jenny Anderson, *Trader Arrested in Manipulation That Contributed to 2010 ‘Flash Crash’*, N.Y. TIMES (Apr. 21, 2015), <http://www.nytimes.com/2015/04/22/business/dealbook/trader-in-britain-arrested-on-charges-of-manipulation-that-led-to-2010-flash-crash.html> [<http://perma.cc/R73P-L7AL>]; Suzi Ring, *Flash-Crash Trader Sarao Gets Bail in U.S. Extradition Fight*, BLOOMBERG BUS. (Apr. 22, 2015, 11:36 AM), <http://www.bloomberg.com/news/articles/2015-04-22/flash-crash-trader-sarao-gets-bail-in-u-s-extradition-fight> [<http://perma.cc/FJ45-S8E3>] (reporting that CFTC Enforcement Director Aitan Goelman said that Sarao was “a significant factor in market imbalance . . . [which] was one of the chief conditions that allowed the flash crash to occur”).

14. *See infra* note 91 and accompanying text.

15. *See* Dean Starkman & Jim Puzzaghera, *5 Global Banks to Pay \$5.7 Billion in Fines over Currency Manipulation*, L.A. TIMES (May 20, 2015, 6:01 PM), <http://www.latimes.com/business/la-fi-banks-criminal-fines-20150521-story.html> [<http://perma.cc/97YL-7YBW>]; *see also* Gina Chon & Tom Braithwaite, *JPMorgan Settles Forex Manipulation Lawsuit*, FIN. TIMES (Jan. 5, 2015), <http://www.ft.com/intl/cms/s/0/7c545192-9511-11e4-b32c-00144feabdc0.html> [<http://perma.cc/L89K-4KNY>] (discussing a major alleged foreign exchange manipulation); Suzi Ring et al., *CitiGroup, JPMorgan to Pay Most in \$4.3 Billion in FX in Rigging Cases*, BLOOMBERG NEWS (Nov. 12, 2014, 11:17 AM), <http://www.bloomberg.com/news/2014-11-12/banks-to-pay-3-3-billion-in-fx-manipulation-probe.html> [<http://perma.cc/VPN5-QN5U>].

This Article seeks a way out of the morass. We start with some simple constraints on a theory of manipulation and suggest that for a trading strategy to be considered market manipulation prohibited by the Exchange Act, four essential questions must be answered in the affirmative. First, is the strategy, purely as a conceptual matter, distinguishable from other, clearly acceptable trading strategies, and does the strategy cause social harm? Second, does the strategy plausibly fit under the broad dictionary meaning of the term “manipulation”? Third, are there circumstances under which the strategy can yield positive expected profits, and do they occur frequently enough to cause concern? Fourth, are there practical procedures for implementing a ban on the strategy whereby the social gains from its reduction or elimination exceed the social costs of doing so, including deterring socially valuable transactions that might be erroneously identified as examples of the practice?<sup>16</sup> In essence, this four-question approach begins with some minimal rules of statutory interpretation to define the outer borders of what is plausibly within the reach of the prohibitions of manipulation in Sections 9 and 10(b).

Our approach then focuses on three types of market manipulation that have been the subject of commentary both in the case law and by legal and economics scholars.<sup>17</sup> What has often been missing in the treatments of each of these practices, however, is a perspicuous identification of exactly who is harmed and who is helped if the practice is left unregulated and how this would change if the practice instead were legally prohibited. Our framework allows a comparison of the two worlds in terms of economic efficiency and the fairness of the various market participants’ resulting wealth positions. We then use that analysis to derive an approach that can enable regulators to deter genuinely socially undesirable activity without unnecessarily deterring similar appearing, but socially useful, trades. Indeed, while objections to manipulation are often framed in terms of its unfairness, we argue that manipulation is undesirable on straightforward efficiency grounds.

The framework we develop draws our normative and analytical building blocks from central results in microstructure and financial economics. Normatively, we argue that the main social functions of trading markets relate to guiding the efficient allocation of capital among firms and between households and enterprise over time, with the liquidity and price accuracy of a market serving as useful proxies for these ultimate social functions.

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16. A practice or regulation can lead to a social harm if it reduces economic efficiency in a particular way or systematically leads to unfair results. It can lead to a social gain if it improves economic efficiency or ameliorates some unfairness. See *infra* Part II. Thus, the desirability of a regulation that seeks to prohibit a given practice depends on whether, considering on a net basis all the social harms and benefits involved in a comparison between a world with and without the regulation, the world with the regulation is superior to the world without it.

17. See, e.g., Tālis J. Putniņš, *Market Manipulation: A Survey*, 26 J. ECON. SURV. 952 (2012) (providing a notable survey of various manipulative strategies, although the focus and scope differ from our own).

Analytically, we present an informal model of how the secondary equity market typically functions.

With these foundations in hand, we show that open market manipulation will typically harm both of a market's central social functions—facilitating liquidity and enhancing price accuracy. Although most commentary focuses on the impact of manipulation on price accuracy, the harm to liquidity can be more important. Whether there is harm to price accuracy as well turns on when, if ever, the manipulation is corrected by an event (say, a corporate disclosure) that causes a stock's price to revert to its accurate level after a successful manipulation distorted it. Surprisingly, our analysis reveals that *the core harm of a manipulation will actually depend on the speed and nature of such price "correction."* If a correction usually occurs rapidly, then the harm of manipulation due to its effects on price accuracy will typically be trivial. The manipulation's focal harm will be to liquidity.<sup>18</sup> If, on the other hand, a manipulation's effects on price are only corrected slowly—or are never corrected—then the harm due to its effects on price accuracy may be more significant. We discuss conceptually the various possibilities for how correction can occur (or fail to).

The remainder of this Article proceeds as follows: Part I provides an overview of the three forms of manipulation we will analyze. Part II establishes our normative framework for assessing whether a potentially manipulative trading strategy is actually socially undesirable and whether the social benefits of prohibiting the strategy outweigh the costs. There we identify the ways in which manipulation and its regulation can affect the efficiency with which the economy operates. We also explain how we evaluate the fairness of a given practice. Part III briefly explores the basic institutional and economic features of the stock market to provide the tools necessary for understanding complex trading strategies. For those familiar with our recent work or the microstructure literature, Parts II and III will be unnecessary.<sup>19</sup> Parts IV, V, and VI consider, respectively, the three basic forms of manipulation: naked open market manipulation, open market manipulation with an external interest, and misstatement manipulation. Part VII deploys what has come before it to illuminate and assess the existing statutory framework and case law relating to these three types of manipulation. We then conclude.

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18. How the correction precisely occurs, however, will still matter to how a manipulation affects the wealth of various market participants and how dramatically it harms liquidity. See *infra* Section IV.A.1.b (showing that if the correction occurs due to informed trading, then liquidity providers will lose significantly again, while if it corrects due to a public disclosure, they will not).

19. Portions of these Parts draw significantly from more detailed treatments in our prior work. See Merritt B. Fox, Lawrence R. Glosten & Gabriel V. Rauterberg, *The New Stock Market: Sense and Nonsense*, 65 DUKE L.J. 191, 217-26 (2015) [hereinafter Fox et al., *Sense and Nonsense*]; see also Merritt B. Fox, Lawrence R. Glosten & Gabriel V. Rauterberg, *Informed Trading and Its Regulation*, J. CORP. L. (forthcoming 2018) [hereinafter Fox et al., *Informed Trading*].



## I. Overview

### A. Types of Manipulation

We ultimately identify three types of trading strategies that generate affirmative answers to our four foundational questions: “naked open market manipulation,” “open market manipulation with an external interest,” and “misstatement manipulation.” Each in our view should be banned, but in each case the ban requires appropriately designed enforcement procedures relating to burdens of persuasion and evidentiary presumptions. These three trading strategies do not necessarily exhaust the types of trading strategies that should be banned as manipulative under the Exchange Act, but the list represents a reasonable distillation of the types of manipulation cases that have come up so far under the Exchange Act where we think a ban is justified.

#### 1. Naked Open Market Manipulation

Naked open market manipulation involves the purchase of a number of shares,<sup>20</sup> with an upward push on prices, and then their resale under circumstances where the corresponding downward push on prices is less severe, thereby resulting in the average sale price exceeding the average purchase price.<sup>21</sup> This strategy yields positive expected profits where, at the time of the purchase, the trader has good reason to believe that the likelihood of such an asymmetric price reaction is sufficiently great that it will yield net gains from trading.<sup>22</sup>

As will be developed below, we believe that this asymmetric price - reaction condition for positive expected profits is met under certain circumstances, but that such circumstances arise relatively infrequently.<sup>23</sup> As a result, we ultimately conclude that such a trader should be subject to legal sanctions, but only where it can be proved that she had, at the time of her purchase, good reason to believe that this condition was met.<sup>24</sup> Imposing sanctions without requiring such proof is likely to deter socially useful purchases followed by sales that look very much the same to an external observer. The most important example is simply fundamental-value informed trading, where a trader buys a stock, based on analysis enabling a more

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20. The purchase referred to in the text may consist of just one buy transaction or a series of buy transactions in a relatively short period of time.

21. The concept also covers a sale of a certain number of shares and their repurchase, under circumstances where the difference in the price reaction to the sale versus the repurchase results in the average repurchase price being less than the average sale price.

22. See LARRY HARRIS, TRADING AND EXCHANGES 158 (2003). In their widely cited theoretical paper, Franklin Allen and Douglas Gale term this “trade-based” manipulation. See Franklin Allen & Douglas Gale, *Stock Price Manipulation*, 5 REV. FIN. STUD. 503, 505 (1992)

23. See *infra* Section IV.B.

24. *Id.*

accurate appraisal of its value than is reflected in the then-current price, and resells when the market price catches up with her appraisal.

### 2. Open Market Manipulation with an External Interest

Open market manipulation with an external interest involves a trader who has an economic interest in the price of a security *independent* of the price at which she can buy and sell it in the open market. An example is an executive with a compensation scheme tied to her company's stock price at a particular moment in time. Shortly in advance of this moment, the trader purchases a number of shares and the resulting upward push on prices leads to a gain based on the external interest. Once this moment has passed, she would likely resell the shares that she previously purchased to push the price up because that is the only reason she included them in her portfolio in the first place and her purpose has now been accomplished.<sup>25</sup> To yield an expected gain, this strategy does not require that the likelihood of an asymmetric price reaction be sufficiently great to make up for the costs of the trading involved. It only requires that the expected gain derived from the external interest be greater than the costs of trading, a condition that would be easily satisfied for an external interest of any real size.

We ultimately conclude that legal sanctions should be imposed where it is proved that a trader with such an external interest makes a purchase just in advance of the moment at which the security's price determines the gain that arises from the trader's external interest. Doing so is very unlikely to deter any socially useful transactions because it would be highly coincidental that a trader would engage in a purchase just at that moment for any purpose other than obtaining the external gain.

### 3. Misstatement Manipulation

Misstatement manipulation involves a trader who makes a materially false statement concerning an issuer that pushes down its price, purchases a certain number of shares in the market, waits until the truth comes out, and then resells the shares. We ultimately conclude that legal sanctions should be imposed on this trader as well. The conclusion may not seem very controversial, but the primary reason for reaching it—that the prospect of such trading will decrease market liquidity rather than that the transaction is unfair to other traders in the market—involves new insights.

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25. The concept also covers the mirror set of transactions, where the initial transaction is a sale and the trader has an external interest allowing him to enjoy a greater gain from a lower share price.

*B. The Role of Purpose*

In legal opinions and commentary related to Section 9(a)(2), a great deal turns on the “purpose” of the transactions involved. Similarly, the concept of a “manipulative . . . device” under Section 10(b) implies some kind of scienter. Determining whether a given set of trades was undertaken for an “illegitimate purpose” raises, of course, notoriously difficult questions. Most notably, the purpose motivating an individual to trade is inherently subjective. Accordingly, at a practical level, the questions of what constitutes an improper purpose, and what constitutes satisfactory evidence of that improper purpose, are inseparable.

Before we can ascertain what evidence would be adequate to establish an illegitimate purpose for a set of trades, it is still important to have a clear conceptual idea of what constitutes an illegitimate purpose. Consider an individual who engaged in a set of trades that accidentally netted her a tidy profit because they occurred at a time of asymmetric price response of which she was completely unaware. We would not want to treat her a manipulator, even though the pattern of her trades might look the same as the trades engaged in by someone who purchased and sold exclusively because of the expectation of an asymmetric price response.

The starting point for identifying an improper purpose is to imagine every possible kind of motivation for engaging in trading activities (unaccompanied by a misstatement) other than solely to profit solely because of the price impact of the trades. Most of these other motivations are either ones where allowing the practice yields more social benefit than harm or trading practices that are already outlawed by other aspects of securities law.<sup>26</sup> If all or a portion of a person’s trading activity is not due to one of these other purposes and yet is expected to be profitable, the expected profits must be coming from the expectation of the price movement alone. Just like with a wash or matched sale, the resulting price change, viewed by itself, is socially undesirable and the trade otherwise has no socially redeeming features.

This approach to the concept of what is socially undesirable manipulative trading is similar to that adopted by Lawrence Harris.<sup>27</sup> It is also close to a concept recognized by Fischel and Ross, even though, contrary to our

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26. We do not attempt an exhaustive list here of trades that could have some utility to the trader for reasons than just to move price, but examples of other motivations for trading would include: seeking to profit through a form of informed trading; providing liquidity; seeking a risk-adjusted market return by engaging in an uninformed share purchase; enabling consumption by making an uninformed share sale; seeking to obtain a more favorable or suitable risk/expected return ratio through the purchase or sale of shares; reacting to a price change that hits the purchase or sale reservation price set as the result of fundamental analysis of publicly available information; and seeking to profit by observing trends in bids, offers and executed transactions to try to detect informed trading by others and trading in the same direction.

27. HARRIS, *supra* note 22, at 266.

view, they do not think it can be operationalized.<sup>28</sup> They are certainly correct that the second question – what constitutes satisfactory evidence that the motivation of at least some portion of a person’s trading activity is simply to move the price – is the critical one. We pursue an answer to it in our analysis of manipulation in the remainder of the paper.

### *C. The Extent and Nature of Manipulation*

The fact is that we know relatively little about the extent of manipulation in the equity markets. Of course, we can count the number of manipulation actions by the SEC, and a couple of papers have done so. Aggarwal and Wu<sup>29</sup> comb the SEC’s litigation releases for those announcing the filing of a complaint from 1990 to 2001, identifying 142 cases. Most of the cases involve small illiquid securities, and almost half of the sample traded on over-the-counter (OTC) venues. Prosecuted manipulation cases are relatively rare on the established exchanges. An interesting feature of the cases is that among the cases 48% had an insider defendant, 32% had a large (>5%) shareholder defendant, and 64% had a broker defendant (obviously, at least some cases involved multiple defendants). The paper also shows that any one manipulation can combine pure trade-related strategies with the propagation of rumor, false news and broker encouragement, combining, for example, a naked open market manipulation with a misrepresentation manipulation

Comerton-Forde and Putniņš<sup>30</sup> examine a specific manipulative strategy, manipulation of the closing price, which are presumably instances of manipulation with an external interest. Between 1999 and 2005, there were eight complaints involving 31 securities and 184 specific stock/day manipulations. The search was limited to stocks traded on the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), Toronto Stock Exchange (TSE), and Vancouver Stock Exchange (TSE-V). Using a sophisticated statistical technique that separately models the probability of manipulation and the conditional probability of prosecution given manipulation, the paper projects—perhaps speculatively—that on average an astonishing one percent of closings involve a manipulation. These manipulations are not uniformly distributed over time and across firms. Manipulations are more likely at month end and quarter end. They are also more likely to occur in names that have higher mutual fund ownership.

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28. Fischel & Ross, *supra* note 3.

29. Rajesh K. Aggarwal & Guojun Wu, *Stock Market Manipulations*, 79 J. BUS. 1915 (2006).

30. Carole Comerton-Forde & Tālis J. Putniņš, *Stock Price Manipulation: Prevalence and Determinants*, 18 REV. FIN. 23 (2014).

This latter result harkens to the indirect evidence of closing price manipulation in Carhart et al.<sup>31</sup> The paper reports that Net Asset Value (NAV) returns of non-index equity mutual funds are abnormally high on quarter end days, beating the S&P 500 return by 50 to 200 basis points (bps). Significantly, the funds underperform on the days after the quarter ending days, as, it is argued, prices revert to their un-manipulated level. These two papers are clearly looking at what we term open market manipulation with an external interest.

We also have evidence of naked open market manipulation. Hillion and Vermaelen<sup>32</sup> describe the experience of 467 so-called floating-price convertible bonds issued by 261 firms between 1994 and 1998. These convertibles are structured so that it does not matter to the holder of the bond what the future stock price is because the conversion price is the future stock price. For example, suppose the face value of the bond is \$100. If the future stock price at conversion is \$10, the holder of the bond will get  $100/10=10$  shares upon conversion, each worth \$10 for a total value of \$100. If the future price is \$5, the bond is convertible into  $100/5=20$  shares, each worth \$5 for a total value of \$100.<sup>33</sup> Aggressive short selling in advance of conversion can be very profitable to holders of such bonds. This is because the shorting bondholders receive the average price as the stock price declines. However, they receive shares based on the last price and they can then unwind their short position by delivering the shares received from the firm.<sup>34</sup> While this might look like a market manipulation with an external interest, it is easier to understand as naked market manipulation. The short position is taken on with significant impact on the stock price. The short position is undone using the shares received from conversion. So the manipulator's reverse transaction has no price impact at all – the ultimate asymmetric price reaction.

Hillion and Vermaelen show that on average the stock price of the convertible issuer lost thirty-four percent during the ensuing year. In eighty-five percent of the cases, returns over the year following announcement of the convertible issuance were negative. The authors conclude that this is evidence

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31. Mark M. Carhart et al., *Leaning for the Tape: Evidence of Gaming Behavior in Equity Mutual Funds*, 57 J. FIN. 661 (2002).

32. Pierre Hillion & Theo Vermaelen, *Death Spiral Convertibles*, 71 J. FIN. ECON. 381 (2004).

33. This is a very simplified description. More detail is available in Lawrence R. Glosten, *Sedona: The End of a PIPE Dream*, COLUMB. CASEWORKS, <http://www8.gsb.columbia.edu/caseworks/node/445> [<http://perma.cc/V9VW-Y7BB>]; see also Hillion & Vermaelen, *supra* note 32, at 4.

34. Some simple calculations will show this result. Suppose the face value of a future price convertible bond is \$250,000 and the current stock price is \$10. Immediate conversion would thus yield 25,000 shares for a total value of \$250,000. Now suppose that the holder of the bond shorts 50,000 shares and as a result expects the stock price to be driven down to \$5. On average, the short seller expects to collect \$7.50 per share for proceeds of  $\$7.50 \times 50,000 = \$375,000$ . At conversion, the bond holder will receive  $250,000/5 = 50,000$  shares. These shares are used to close out the short position with no further cash flows. Thus, there is a 50% profit associated with the downward manipulation.

of aggressive short selling on the part of the convertible investor, driving down the price.

While there may be other explanations for short selling by holders of floating priced convertible bonds, the SEC considered to be a manipulation in a recently filed a complaint against two brothers who were holders such bonds issued by Sedona Corp., as well as against various brokers and dealers that it alleged had facilitated the sales.<sup>35</sup> Notably, the contract pursuant to which the brothers purchased the bonds from Sedona included a clause prohibiting them from shorting. According to the complaint, the brothers ignored this clause. Moreover, they attempted to disguise their actions by failing to mark these sales as “short” and by failing to borrow the shares, both violations of SEC rules. Furthermore, the SEC obtained recordings of the brothers calling on their agents to “clobber” Sedona. The older brother was convicted and fled the country. The younger brother and broker-dealers settled with the SEC in December 2012.<sup>36</sup>

Finally, Adam Clark-Joseph provides fascinating indirect evidence of manipulative behavior in the eMini S&P 500 futures contract market that appears to involve instances of naked open market manipulation.<sup>37</sup> As we will discuss later, the key to success in such a manipulation is the ability to take on a position with large price impact and take off the position with smaller price impact. Clark-Joseph offers the following facts: There are, in the Commodity Futures Trading Commission (CFTC) data, eight high-frequency traders (HFTs) who regularly lose money on a series of small marketable orders. These same traders also make considerable money at times from a sequence of large marketable orders.

Clark-Joseph argues that the small marketable orders are exploratory, designed to determine whether the order book is “fragile” on one side or the other. A fragile order book on a given side is one where the quantity of shares available at prices near the best quote is relatively small and does not refill immediately as marketable orders execute against the visible quotes that are there. In such a situation, a large marketable order executing against these quotes will move price significantly. If the exploratory trades reveal that the book is fragile on the offer side, then the HFT will be able to move the price with large, aggressive buy orders. If the HFT also forecasts that there will be a large number of marketable buy orders coming in (something that is often predictable), then it will be able to quickly unload the shares that it just purchased without a similarly strong downward pressure on price. The

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35. See SEC v. Badian, Litigation Release No. 19,639, 87 SEC Docket 2175 (Apr. 4, 2006).

36. See SEC v. Badian, Litigation Release No. 22,593, 105 SEC Docket 1917 (Jan. 15, 2013)

37. See Adam D. Clark-Joseph, *Exploratory Trading* (Working Paper, 2013), <http://www.nanex.net/aqck2/4136/exploratorytrading.pdf> [<http://perma.cc/TFH4-VQE8>] (documenting the existence of a kind of price decoding high-frequency trader in the futures market)..

algorithm is thus: 1) determine if there is likely to be sizable buy orders or sell orders in the very near future; 2) if large buying (selling) interest is detected, submit small orders to detect fragility on the offer (bid) side of the order book; 3) if the order book is robust on the offer (bid), do nothing; 4) if the order book is fragile on the offer (bid) side of the book buy (sell) aggressively; 5) sell to (buy from) anticipated buy (sell) marketable orders. Putting the position on has a large price impact because the book is fragile; taking off the position is expected to have a small price impact because it involves transacting with the anticipated marketable orders.

## II. The Normative Framework

Assessing the social value of a trading strategy and the desirability of prohibiting it by deeming it illegal manipulation requires reference to the basic functions served by the equity trading market. It also requires recognition that if a particular form of trading takes place and its extent is generally understood, other actors in the system will generally take these facts into account in determining their own actions. Thus, the normative question is how the existence of a form of trading—and any attempts to regulate it—affects the system's ultimate capacity to further the multiple social goals that equity trading markets are expected to serve and that form the justificatory basis for regulation when these markets fall short.

### *A. Social Goals*

Five basic social goals animate most discussion of secondary equity markets<sup>38</sup> and their regulation: (i) promoting the efficient allocation of capital so that it goes to the most promising new investment projects; (ii) promoting the efficient operation of the economy's existing productive capacity; (iii) promoting the efficient allocation of resources between current and future periods so as to best satisfy the needs of firms seeking funds for real investments (trading the promise of future dollars to obtain current dollars) and the needs of savers seeking to forgo current consumption in order to enjoy future consumption (trading current dollars to obtain the promise of future dollars); (iv) promoting the efficient allocation among investors of the risks associated with holding securities so that their volatility is borne by risk-averse investors with the least disutility; and (v) operating fairly and fostering an overall sense of fairness. In addition, any intelligent discussion of the desirability of manipulation and its regulation must take into account the impact of the trading on the real resources that society devotes to trading in,

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38. In the primary market, stocks are purchased from the company issuing those stocks, while in the secondary market, traders buy and sell stocks from each other. Stock exchanges are secondary markets.

and operating, the stock market, and to the enforcement and compliance costs associated with its regulation, including the socially useful transactions that any regulation may deter.

### *B. The Use of Ex Post and Ex Ante Analysis*

Understanding the impact of an ongoing trading practice on these five basic social goals is most easily understood by starting with a single instance of the practice and seeing the ex post effect of the transaction. From this, we can see the impact of the trade on the wealth position of the various participants involved, which in turn is a guide to the incentives that the availability of the practice generates. Then we can consider, from an ex ante perspective, the impact of the practice as a generally-known ongoing phenomenon occurring over the long run within a competitive environment. This ex ante analysis allows us to see what the efficiency and fairness implications of the practice are. As is relatively standard in the law and economics literature concerning corporate and securities law, we evaluate efficiency in Kaldor-Hicks terms,<sup>39</sup> and consider fairness in terms of a practice's effects on various participants' wealth positions from the ex ante perspective.<sup>40</sup>

The initial four basic values and cost considerations listed above, and even the "sense of fairness" that we mention with respect to the fifth, all go to the efficiency aspect of the problem. The "operating fairly" aspect of the fifth value goes to the ultimate underlying fairness. Conceptions of fairness are too many and too multifarious to address generally in-depth. However, fairness also plays too prominent a role in public criticism of the securities markets to entirely ignore. Our strategy here is simply to take as an exemplar one prominent conception of fairness that frequently appears in commentary on markets.<sup>41</sup> We argue that this conception of fairness is of limited use in assessing trading behavior and leave things at that. More generally, we think that many of the concerns fairness targets, while genuine, can be more perspicuously articulated within an efficiency framework. The choice of the ex ante perspective to assess underlying fairness implies that if a practice does not affect a market participant's *expected* outcomes, it is not unfair. Because the practice is available and another person engages in it, a given transaction entered into by the participant may leave her worse off. But the practice is not

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39. John R. Hicks, *The Foundations of Welfare Economics*, 49 *ECON. J.* 696 (1939); Nicholas Kaldor, *Welfare Propositions of Economics and Interpersonal Comparisons of Utility*, 49 *ECON. J.* 549 (1939) (together introducing the Kaldor-Hicks conception of efficiency). The Kaldor-Hicks conception of efficiency, with all its limitations, remains the standard welfare criterion in law-and-economics analyses of corporate and securities law. Cf. John Armour et al., *What is Corporate Law*, in *THE ANATOMY OF CORPORATE LAW: A COMPARATIVE AND FUNCTIONAL APPROACH* 1, 23 n.87 (3d ed. 2017).

40. Other conceptions of fairness are of course possible (and plausible), and to the extent that such views are held, this Article simply offers a complementary critique of manipulation.

41. See, e.g., MICHAEL LEWIS, *FLASH BOYS: A WALL STREET REVOLT* (2014).



unfair to the participant if, on average, she is not worse off entering into such transactions due to the practice. The idea that fairness can be assessed in terms of expected outcomes is bolstered by the fact that most investors engage in many transactions over time, and, like the myriad of other risks that investors undertake, the risk of being hurt by the practice can essentially be eliminated by holding a diversified portfolio. To the extent that any of the assumptions in this characterization—repeated transactions or diversification—turn out not to characterize a given trader, then our argument above will not apply.<sup>42</sup> This approach to fairness may also have far less appeal in other arenas of social life.

What we will see is that each of the different kinds of manipulation that we examine does not have unfair effects from this *ex ante* perspective. However, the perspective will reveal that relative to a practice's effective elimination by regulation, the free occurrence of the practice can affect certain classes of participants favorably or unfavorably in terms of the rents paid on their specialized assets, skills, or abilities. A prospective flow of rents is not an entitlement. In a market economy, the offer of rents to prompt the suppliers of specialized inputs to come forward is simply the mechanism by which these resources get directed to support a particular activity. In other words, such rents are an inevitable part of the use of a market economy to allocate resources and no particular flow of rents, say for the work of talented engineers, is any more or less fair than any other as long as the resulting allocation of resources is desirable. We judge such a resulting allocation of resources in terms of whether it is efficient or not, leaving fairness based corrections to more general policies of redistribution. Thus, we consider whether the indirect wealth effects from a given trading practice are desirable or not as depending on whether the resulting allocation of productive resources enhances efficiency.

### *C. Market Characteristics that Impact on These Goals*

A given form of trading may impact these five social goals in complex ways that are related to a stock market's two most important characteristics: the price accuracy and the liquidity of the stocks trading in it.<sup>43</sup> The social impact of any given form of trading is most easily evaluated through a two-step process: first assessing the effect of the type of trading on each of these two market characteristics and then identifying the effect of the characteristic on the five basic social goals discussed above.

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42. See Alicia J. Davis, *Are Investors' Gains and Losses from Securities Fraud Equal Over Time? Theory and Evidence* (Univ. of Michigan Law Sch., Empirical Legal Studies Ctr. Working Paper Series, no. 09-002, 2015), [http://papers.ssm.com/sol3/papers.cfm?abstract\\_id=1121198](http://papers.ssm.com/sol3/papers.cfm?abstract_id=1121198) [<http://perma.cc/GNJ7-KBEG>] (arguing, *inter alia*, that diversification assumptions are often false).

43. THIERRY FOUCAULT ET AL., MARKET LIQUIDITY: THEORY, EVIDENCE, AND POLICY 31 (2013) ("The two main roles of a securities market are to provide trading services for investors who wish to alter their portfolios, and to determine prices that can guide the allocation of capital by investors and firms . . . . [A] market is efficient if it enables investors to trade quickly and cheaply (i.e., if it is liquid) and if it incorporates new information quickly and accurately into prices.").

### 1. Price Accuracy

Price accuracy relates to the accuracy with which the market price of an issuer's shares predicts the issuer's future cash flows. Because the price of any new share offering by a publicly traded issuer will be determined largely by the price of its already outstanding shares in the stock market, more accurate stock market prices will lead to capital raised by new share issuances being more likely to go to the issuers with the most promising new real investment projects, the first basic social goal.<sup>44</sup> Share price also influences the availability of new project funding from other outside sources and the willingness of managers to use internal funds for investment, and so greater price accuracy assists the efficient allocation of capital in these other ways as well.<sup>45</sup>

More generally, more accurate share prices help reveal managers who are performing poorly both in terms of their deployment of internal funds for new investment projects (again assisting the efficient allocation of capital) and in terms of their management of the issuer's current assets (assisting the efficient operation of the economy's existing productive capacity, the second basic social goal).<sup>46</sup> They also improve the effectiveness of share price compensation schemes, the threats of hostile takeovers, and activist hedge fund pressures as incentives for better managerial decision-making in terms of promoting these first two basic social goals.<sup>47</sup>

Over time, more accurate share prices also likely lead to a greater sense of fairness on the part of investors, part of the fifth basic social goal, because they will experience fewer negative surprises at some point in time after their purchase or sale.<sup>48</sup>

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44. See, e.g., Qi Chen et al., *Price Informativeness and Investment Sensitivity to Stock Price*, 12 REV. FIN. STUD. 619 (2007) (showing that the number of investment decisions tend to increase when a stock's price has just risen).

45. See Merritt B. Fox, *Civil Liability and Mandatory Disclosure*, 109 COLUM. L. REV. 237, 260-64 (2009); Marcel Kahan, *Securities Laws and the Social Costs of "Inaccurate" Stock Prices*, 41 DUKE L.J. 977 (1992).

46. *Id.* at 258-60.

47. *Id.* There is ample empirical evidence to suggest that accurate price signals do in fact have efficiency-enhancing effects on managerial decisions. See FOUCAULT ET AL., *supra* note 43, at 361-68 (collecting relevant empirical studies); see also, e.g., Philip Bond et al., *The Real Effects of Financial Markets*, 4 ANN. REV. FIN. ECON. 339 (2012).

48. In an efficient market, the market price, whether it is relatively accurate or inaccurate, is an unbiased predictor of an issuer's future cash flows. If it is inaccurate, it is just more likely to be far off, one way or the other, from how things ultimately turn out. Thus an efficient, but relatively inaccurate, price would result in as many positive surprises as negative ones. To many investors, the negative surprise is likely to be more salient, however. So when a negative surprise materializes, it generates a sense of grievance even though, ex ante, a positive surprise was equally likely. See, e.g., DONALD C. LANGEVOORT, *SELLING HOPE, SELLING RISK* 11 (2016).

## 2. Liquidity

A second characteristic is how liquid the market is. Liquidity is a multi-dimensional concept that relates to the size of a trade, the price at which it is accomplished, and the time it takes to accomplish the trade. Generally, the larger the size of the purchase or sale and the faster one wishes to accomplish it, the less desirable will be the price. The more liquid the market is, however, the less severe these tradeoffs are. For a small retail purchase or sale of stock, the “bid-ask spread” (the spread between the best available bid and best available offer in the market) is a good measure of liquidity because the trader can effect a buy or sell transaction immediately at those respective prices and, in essence, will be paying half the spread to do so. For larger orders, the volume of stock available at prices not too inferior to this best bid or offer (the “depth of the book”) is relevant as well.<sup>49</sup>

Liquidity also has an impact on a number of social goals:

### a. More Efficient Allocation of Resources Over Time

To start, the prospect of greater liquidity promotes more efficient allocation of society’s scarce resources between uses that support current consumption and uses that support new real investment that in turn allows greater consumption in the future. This relates to the third basic social goal, the efficient allocation of resources with regard to consumption over time. Consider this first in terms of enterprises seeking new capital to devote to real investment projects through the issuance of stock. In essence, they are purchasers of current dollars in return for the promise of future dollars. The more liquid an issuer’s shares, the more valuable their shares are to hold for any given level of expected future cash flow.<sup>50</sup> Thus, when an issuer offers shares in the primary market, the more liquid that investors anticipate the shares will be in the future, the higher the price at which the issuer can sell its shares, all else equal. Hence, the lower will be the issuer’s cost of capital.<sup>51</sup>

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49. This concept of the best bid and offer—the prices at which small retail traders can fill, respectively, a market sell order and a market buy order—and the idea of depth of book will be explored further in *infra* Part III.

50. For a purchaser of the shares in the primary market—the sellers of current dollars in return for the promise of receiving future dollars—more liquidity means it is less costly to sell her shares in the future to provide for future consumption because the bid will be less below the mid-point. In addition, more liquidity means that buyers in the market at the time of this sale would value the shares more highly so that this mid-point will be higher. This is so for two reasons. First, it is less expensive for these buyers because the offer price they pay will be less above the mid-point. Second, it will be less expensive for these buyers to sell at yet some further point in the future because the bid then will be less below the mid-point.

51. The cost of capital is lower because the prospect of a smaller bid-ask spread results in the issuer’s expected future cash flow being discounted to present value at a lower discount rate. See Yakov Amihud & Haim Mendelson, *Asset Pricing and the Bid-Ask Spread*, 17 J. FIN. ECON. 223 (1986); Yakov Amihud & Haim Mendelson, *Liquidity and Asset Prices: Financial Management Implications*, 17 FIN. MGMT. 5 (1988).

In welfare economics terms, illiquidity, just like a tax, results in a “wedge” between the value of what the savers (the purchasers of future dollars) expect to receive in the future and the value of what the entrepreneurs or issuers (the suppliers of future dollars in the form of future dividend streams) expect to give up in the future.<sup>52</sup> This wedge prevents certain transactions from occurring that would have occurred if the shares were expected to be more liquid. The fact that, absent this wedge, the issuer and savers would have willingly entered into these transactions means that the transactions prevented by illiquidity are ones that would have made both parties better off on an expected basis. These lost transactions are projects with expected returns that are lower than those of the marginal project that gets funded in a world with a certain degree of illiquidity, but still high enough to make some people feel that, absent liquidity concerns, sacrificing their current dollars for the projects’ promises of future ones would be a worthwhile exchange.<sup>53</sup>

In essence, illiquidity harms the efficiency with which society allocates its scarce resources between uses that support current consumption and uses that support consumption in the future. Savers save less, and entrepreneurs and issuers engage in less real investment, than the levels that would be mutually more advantageous but for the savers’ concerns about the liquidity of the issuers’ shares.

### b. More Efficient Allocation of Risk

Greater liquidity also promotes the more efficient allocation of risk, the fourth basic social goal. At any given point in time, each investor has an optimal portfolio in terms of the proportion of his total wealth that is invested in risky securities and the proportion of this risky security portfolio that should be invested in each available risky security. An investor’s taste for safety versus risk may stay relatively steady over at least the medium run. However, almost everything else determining what portfolio is optimal for him—for example his personal circumstances, the risk-free rate of interest, the expected returns associated with each available risky asset, and the variances of the returns on each such asset and the co-variances among them—may be subject to frequent change. Thus what constitutes an optimal portfolio is likely to be always shifting. By reducing the transaction costs associated with both the purchase and sale of securities, greater liquidity allows the individual investor to cost effectively adjust her portfolio over time to keep it closer at each moment to what at that point is optimal for her.

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52. See FOUCAULT ET AL., *supra* note 43 at 322-25 (analyzing how illiquidity functions as a wedge separating transaction prices from assets’ fundamental values).

53. HARRIS, *supra* note 22, at 214-15.

### c. Greater Share Price Accuracy

More liquidity also lowers the transaction costs associated with speculative trading based on acquiring a variety of bits of publicly available information and observation of the world and analyzing them to make more accurate predictions of an issuer's cash flows, i.e., trading which creates fundamental-value information. Thus, more liquidity stimulates such activity and in the process increases share price accuracy, with the attendant benefits discussed just above in terms of more efficient capital allocation and utilization of existing productive capacity—the first two basic social goals.

## III. The Workings of the Equity Market

A basic understanding of how the equity market works is a necessary starting point for determining any particular trading strategy's impact on price accuracy and liquidity. Accordingly, this Part provides a quick survey of the different types of participants; the nature of trading venues and the types of orders used on them; how liquidity is generated; and the determinants of the prices at which transactions occur. From what follows, the reader will be able to see a baseline description of how the market would work in the absence of naked open market manipulation, open market manipulation with an external interest, or misstatement manipulation, and will have the tools to understand the discussion in Parts IV, V and VI concerning their impact.

### A. *Market Participants and Their Reasons for Trading*

Traders in the market can be broken down into four categories: informed traders, uninformed traders, noise traders, and anti-noise traders.<sup>54</sup> In addition, the buyers and sellers in the market include professional suppliers of liquidity. As will be developed in Parts IV, V, and VI, traders involved in either kind of open market manipulation are special kinds of uninformed traders and traders engaged in misstatement manipulation are a special kind of informed trader. In this baseline description of the market, however, we are assuming that there are no traders engaging in any type of manipulation.

#### 1. Informed Traders

Informed traders are motivated to buy or sell based on information that allows a more accurate appraisal of the stock's value than what its current market price implies. This information can be one of several kinds. Fundamental-value information is an estimate of the future cash flows to a

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54. While separating traders into informed and uninformed is a basic building block of microstructure economics, our taxonomy owes much in general to Larry Harris's work. See HARRIS, *supra* note 22, at 194.

shareholder discounted to present value. Such information is based on a person gathering bits of publicly available information or observations about the world and analyzing what the person has learned in a sophisticated way that allows a superior assessment of these cash flows.<sup>55</sup> Announcement information involves information contained in an announcement by an issuer or other institution with obvious implications as to the issuer's future cash flows. Announcement information remains profitable only during the brief period of time between the announcement and when the information is fully reflected in price. Issuer inside information is information held within an issuer that is relevant to predicting its future cash flows but is not yet public and reflected in price. Non-issuer inside information is information relevant to predicting an issuer's future cash flows that is held within an institution other than an issuer and is not yet public and reflected in price.

As developed below, informed trading, on the one hand, moves share price on average in the direction of greater accuracy, and, on the other hand, reduces liquidity.<sup>56</sup> Thus it is necessary to net out the tradeoff between the positive social impact from improved share price accuracy and the negative social impact from decreased liquidity. We have concluded in another paper that trading on the basis of fundamental-value information is socially desirable, while trading on the basis of announcement information, issuer inside information, and non-issuer inside information (unless permitted by the non-issuer institution that generated the information) is socially undesirable.<sup>57</sup>

### 2. Uninformed Traders

Uninformed traders buy and sell shares without possession of information that allows a more accurate appraisal of the stock's value than the assessment of value of the stock implied by current market prices. A trade by an uninformed person can be motivated by one of several reasons. For example, a purchase of a share is a way of deferring until a later period the consumption in the current period that the cash the trader possesses would otherwise permit. In the later period when the purchaser wishes to consume, she sells the share. The expected return at the time of purchase will simply be the expected return on the market as a whole adjusted to reflect the risk characteristics of the particular firm's shares.<sup>58</sup> Thus neither the purchase nor the sale of the share is motivated by information not yet reflected in share price at the time of the transaction. A purchase or sale of a share of stock may also be motivated by a change in what constitutes an investor's optimal portfolio—the mix of

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55. *Id.* at 194 (discussing the different forms of information on which an informed trader may transact).

56. *See infra* Section III.C.

57. *See* Fox et al., *Informed Trading*, *supra* note 19.

58. RICHARD BREALEY ET AL., *PRINCIPLES OF CORPORATE FINANCE* 302-08, 689 (11th ed. 2013).

securities that achieves the best tradeoff of risk for return and that best suits the investor's tastes in terms of how risk averse she is and her particular circumstances—and thus again is not motivated by information yet to be reflected in share price at the time of the transaction. As noted in Part I, facilitating trades associated with consumption deferral and portfolio risk adjustment is one of the social benefits that a well-functioning stock market can provide. The market can also be a source of entertainment for traders who do not believe they have any special information, but buy and sell because they enjoy gambling.

### 3. Noise Traders

Noise traders believe they have information not reflected in a stock's price that permits a more accurate appraisal of an issuer's future cash flows. What distinguishes them from fundamental-value traders is that, in fact, the information either already is reflected in price or is irrelevant to making a more accurate appraisal. To the extent that idiosyncratic beliefs drive noise traders, their buy and sell trades will tend to cancel each other out and have no effect on price. To the extent that a widespread fad or fashion drives noise traders, however, their trades will push a stock's price in the direction suggested by the fad or fashion. Such trading would thus drive price away from being the best estimate of an issuer's future cash flows given all publicly available information.

### 4. Anti-noise Traders

Anti-noise trading is a particular form of informed trading. A trader engaging in anti-noise trading actively searches for new information about an issuer's future cash flows and is prepared to transact in the opposite direction when she sees prices move at a time when her search suggests there is no new information. Thus, when fad-driven noise traders push price in one direction and anti-noise traders become reasonably confident that there is no new information to justify this price move, anti-noise traders will trade in the opposite direction. Before the anti-noise traders reach this level of confidence that there is no news to justify an observed price change, time may elapse as they engage in a search to see whether there is in fact such news. So, there may be a delay in their countertrading, leaving prices for a time at unjustified levels.

Because of the synergies of engaging in fundamental-value informed trading and the information search that is the basis of anti-noise trading, the same person or entity often engages in both types of trading.

Anti-noise traders play a special role in our story about naked open market manipulation discussed below in Part IV because, as with fad-driven noise trading, the price changes caused by the manipulator are also not based

on new information that would help predict an issuer's future cash flows. Such manipulation involves a person with no belief that the current price is incorrect trading in one direction, then reversing and trading in the opposite direction, and profiting because the price reaction to the first set of trades is greater than the price reaction to the reverse trades. On the one hand, the ability of the manipulator to push price in the first direction represents a situation where the anti-noise traders did not identify in time that there was no information driving the price change. On the other hand, the price at the end of the manipulator's trading is not back to the price that would have prevailed absent the manipulation. Anti-noise traders can be the force that ultimately brings the price back to this level as, over time, they become sufficiently confident that no new information drove the changes in price caused by the manipulator.

### 5. Professional Liquidity Suppliers

The professional supplier of liquidity in an issuer's shares engages in both their frequent purchase and frequent sale, making a business out of standing ready to buy and sell these shares up to stated amounts at quoted prices (respectively a "bid" and an "offer" or "ask"). Today, this is typically a high frequency trader ("HFT"). An HFT uses high-speed communications to constantly update its information concerning transactions and the quotes of others occurring in each stock that it regularly trades and changes its own quotes accordingly, rather than using information about the issuer itself to determine these quotes. Thus, the professional liquidity supplier is not "informed" in the sense that we use the term here. Indeed, because of its unique intermediary market making role, unlike all other buyers and sellers of securities in the market, we will not refer to it as a "trader."

### B. Trading Venues and Orders

Any given stock is potentially traded in each of a number of competing venues. Almost all these venues are *electronic limit order books*, where a liquidity supplier or a trader can post, as a *limit order*, its firm commitment, until cancelled, to buy or sell up to a specified number of shares at a quoted price. A computer (the venue's *matching engine*) matches these posted limit orders with incoming buy and sell *market orders*, which are orders from traders willing to trade immediately and unconditionally at whatever is the best available price in the market. HFTs, acting as professional liquidity suppliers, post a significant portion of the limit orders that are matched in this fashion and result in executed trades.<sup>59</sup> The law further requires that orders transact at the

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59. See Jonathan A. Brogaard et al., *High Frequency Trading and Price Discovery*, 8 REV. FIN. STUD. 2267 (2014) (finding that HFTs supply liquidity for forty-two percent of all trades and provide the market quotes forty-two percent of the time).



best prices displayed at any stock exchange.<sup>60</sup> The lowest offer displayed at any exchange is known as the national best offer (NBO) and the highest bid displayed at any exchange is known as the national best bid (NBB).<sup>61</sup>

### C. *The Economics of Liquidity Provision*

What follows provides a baseline of how securities markets would work if there were no naked open market manipulation, open market manipulation with an external interest, or misstatement manipulation. With this baseline set, the three Parts that follow will consider the impact of these three forms of trading. Throughout, we will assume that, for expository simplicity, all limit orders posted on trading venues are from HFT professional liquidity suppliers and all traders use market orders.

#### 1. The Liquidity Supply Business

The professional liquidity supplier makes money if on average it sells the shares that it buys for more than the price paid.<sup>62</sup> Doing so is not as easy as it might seem, even though at any one point in time the liquidity supplier's offer is always higher than its bid. The problem begins with the fact that the stock market is largely anonymous. Thus, the person with whom a liquidity supplier transacts generally does not reveal her identity and, what, if anything, she knows. So there is always the possibility that she is an informed trader. Liquidity suppliers, as will be demonstrated immediately below, lose money on average when they transact with informed traders.

#### 2. Transacting with Informed Versus Uninformed Traders

An informed trader will buy from the liquidity supplier only when her superior assessment of the stock's value suggests that the value is above the liquidity provider's offer. And she will sell to the liquidity supplier only when her superior assessment suggests that the value is below the liquidity provider's bid. Thus, in transactions with an informed trader, the liquidity supplier sells at

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60. See 17 C.F.R. § 242.611(a)(1) (2016) (establishing the rule); *id.* § 242.600(b) (defining relevant terms).

61. *Id.* Generally, the NBB and NBO are the highest price that any liquidity supplier is willing to pay to buy a firm's shares in response to sell orders and the lowest price any liquidity supplier is willing to sell a firm's shares in response to buy order, respectively, as posted on a national stock exchange. See Fox et al., *Sense and Nonsense*, *supra* note 19, at 207-16 (providing a detailed exposition of the mechanics of stock market trading).

62. As used here, "makes money" means that the revenues that it generates from its sales at the offer exceed its expenditures from its purchases at the bid. For purposes of simplicity, the analysis here assumes that liquidity supply involves no costs of operations or utility decreasing risks to its principals and requires no capital. This is because these other costs are not relevant to the points being made. There is in fact empirical evidence that the adverse selection factors being discussed here account for a majority of the spread between the bid and the ask in most markets. See HARRIS, *supra* note 22, at 158.

prices that the informed trader's information suggests is below the value of the stock, and buys at prices that the informed trader's information suggests is above the value of the stock. These transactions on average will be losing transactions for the liquidity supplier. In essence, the liquidity supplier faces a classic adverse selection situation.<sup>63</sup>

Fortunately for the liquidity supplier, the rest of its transactions are with uninformed traders. On average, these transactions should be profitable. The assessment of value of the stock implied by current market prices is the midpoint between the NBO and NBB. Because the uninformed trader has no private information, there is no reason to think that on average this market assessment is wrong. So when a liquidity supplier purchases from an uninformed trader at the NBB and sells to an uninformed trader at the NBO, each of these transactions on average yields an expected profit equal to half the spread between the two quotes, with the liquidity supplier on average buying for a little less than value and selling for a little more than value.

In sum, whatever the source of an informed trader's private information, the liquidity provider will be subject to adverse selection and will on average lose money when it buys at the bid from informed sellers or sells at the offer to informed buyers. The liquidity provider can still break even, however, as long as there are enough uninformed traders willing to suffer the inevitable expected trading losses of buying at the offer and selling at the bid. There simply needs to be a large enough spread between the bid and offer that the losses accrued by transacting with informed traders are offset by the profits accrued from transacting with uninformed investors.

### 3. How Liquidity Suppliers Set Their Bids and Offers

A liquidity supplier operates in a competitive market. To survive, it must set its quotes aggressively enough to attract business, but not so aggressively that the money it makes by buying from, and selling to, uninformed traders is less than what it loses by engaging in such transactions with informed traders. Thus, in a world where a liquidity supplier rationally expects a higher level of informed trading, it will need to set its offers higher and bids lower to break even and survive in a competitive market.<sup>64</sup>

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63. See generally George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488 (1970) (analyzing how informational asymmetries can drive declines in the quality of goods traded in a market until only "lemons" are left). Liquidity suppliers face the constant threat that they are trading under conditions of information asymmetry and are thus only transacting when the trade is adverse to their interests.

64. A more complete model of how the bid-ask spread is set would include a consideration of the costs of operations, compensation for the utility decreasing risks to its principals of having a not fully diversified portfolio concentrated in particular securities, and the need for capital. See *supra* note 62. Breaking even in the long run requires covering these costs and a normal market return on capital.

A liquidity supplier knows that there is a certain possibility that the next marketable order that arrives to execute against one of its quotes will be from an informed trader. The liquidity supplier knows that if the next marketable order to arrive is a buy, there is a certain chance that it is motivated by positive private information and no chance it is motivated by negative private information. Similarly, if the next order to arrive is a sell, there is a certain chance that it is motivated by negative private information and no chance it is motivated by positive private information. Thus, the liquidity supplier knows that whichever kind of order arrives next, it will alter the liquidity supplier's estimate of the stock's value: up if the order is a buy and down if it is a sell order. The offer and the bid are set in advance of knowing which it will be, but with the offer being contingent on the next arriving order being a buy and the bid on it being a sell. Thus, when a liquidity supplier is deciding on its offer price, it knows that an informed trader will only transact against this price if the information possessed by the informed trader is positive and that the arrival of a buy order will cause the liquidity supplier to revise its estimate upward. So, for a transaction with a buy order to be regret-free, the liquidity supplier must, in advance of the arrival of the order, set its offer quote, based on the information it then knows, to reflect this upward revision of estimated value that will inevitably accompany the buy order's arrival. The same logic applies for setting the bid: to be regret-free it must reflect the downward revision that would inevitably accompany the arrival of a sell order. Once one kind of order or the other arrives, the liquidity supplier has new information and the process starts over again. Thus, in a world where the liquidity supplier rationally expects a higher level of informed trading, these upward and downward revisions will be larger and so again, it will need its offers higher and bids lower.<sup>65</sup>

#### 4. The Pattern of Transaction Prices in the Presence of Informed Trading

This description of how liquidity suppliers set their quotes highlights an important byproduct of rational liquidity provision in a market with informed traders. Liquidity suppliers will be constantly updating valuations in response to transactions. With a sufficient number of trades, the market price will come to reflect the informed trader's information. The behavior of rational liquidity providers thus reflects a kind of "invisible hand": simply as a result of their efforts to avoid losses to informed traders, liquidity providers are repeatedly revising their quotes so that, with time, they come to fully reflect informed traders' information.

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65. 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 (1985) (providing a model of trading behavior under information asymmetries in securities markets).

For example, suppose that there were one or more informed traders possessing a particular piece of positive information. During their period of trading, there would of course also be buying and selling by uninformed traders. So both marketable buy and marketable sell orders will arrive at trading venues, but there will be more buys than sells. As a result, although there will be ups and downs in the offers and bids as the liquidity-supplier estimates of value move up and down with the arrival of each buy and sell order, the ups will predominate and the mid-point between the bid and offer will trend upward until the offer gets high enough that it equals or exceeds the informed traders' estimate of the share's value. Empirical evidence strongly supports the results from these adverse selection models. Analyses of intraday changes in quotes and in the prices of executed transactions consistently show that they respond to the pattern of buy and sell orders at the time.<sup>66</sup> Simulations suggest that the adjustment in price described here often completes itself quite quickly.

#### IV. Naked Open Market Manipulation

Naked open market manipulation involves the purchase of a number of shares, with its upward push on prices, and then their resale under circumstances where the corresponding downward push on prices is less severe, thereby resulting in the average sale price exceeding the average purchase price.<sup>67</sup> The manipulator is not an informed trader in terms of knowing anything special about the issuer's future cash flows. Rather, his profits come purely from the trading profits yielded by this asymmetric price response.

The analysis below suggests that naked open market manipulation is a trading strategy that gives rise to an affirmative answer to each of the four foundational questions posed at the beginning, and hence is an appropriate target of a ban under the Exchange Act. It is socially harmful in a way that makes it distinguishable as a conceptual matter from other trading strategies. It also fits under a broad dictionary meaning of the word "manipulation."<sup>68</sup> There

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66. See Kalok Chan, Y. Peter Chung & Herb Johnson, *The Intraday Behavior of Bid-Ask Spreads for NYSE Stocks and CBOE Options*, 30 J. FIN. & QUANT. ANAL. 329 (1995) (suggesting that adverse selection is an important determinant of the intraday behavior of bid-ask spreads); Lawrence R. Glosten & Lawrence E. Harris, *Estimating the Components of the Bid-Ask Spread*, 21 J. FIN. ECON. 123 (1988) (estimating a model in which the bid-ask spread is divided into an adverse selection component and a transitory component due to inventory costs, clearing costs, and other factors).

67. Again, the concept also covers a sale of a certain number of shares and their repurchase under circumstances where the difference in the price reaction to the sale versus the repurchase results in the average repurchase price being less than the average sale price. Throughout this Article, we assume that the first transaction or set of transactions are purchases for simplicity.

68. In its definition of "manipulate," the Merriam-Webster dictionary includes "to change by artful or unfair means so as to serve one's purpose." *Manipulate*, MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY (11th ed. 2009).

are circumstances under which the strategy can yield positive expected profits. And there are situations where it will be provable that a trader has reason to know of the existence of these circumstances, meaning that if legal sanctions are only imposed when such a situation can be proved to have existed, not many socially valuable transactions—ones not driven by this strategy—will be deterred.

### *A. Wealth Transfers: Fairness and Efficiency*

Understanding the wealth transfer implications of naked open market manipulation is most easily understood by starting with an example and seeing the ex post effect of the trade. Then we can consider, from an ex ante perspective, what the impact of the practice is as a generally known ongoing phenomenon occurring over the longer run within a competitive environment. From this, we can make conclusions both about the efficiency implications of the practice in terms of liquidity and share price accuracy and the fairness of its impact on different members of society.

#### 1. Ex post Perspective

Mani is a skilled manipulator who wishes to manipulate the price of NetSuite's stock by taking advantage of his rational assessment that it is probable that there will be an asymmetric price reaction to his purchases versus his later sales. For simplicity, assume that during the period of Mani's purchases and subsequent sales, although liquidity suppliers are unsure of whether there is any new information that has emerged or been developed about NetSuite, in fact none has. So Mani's trading is the exclusive cause of the initial upward trend and the following downward trend in NetSuite prices.

##### a. The Actual Manipulation

Mani uses a large number of market orders, averaging 1000 shares per trading day, to purchase 10,000 NetSuite shares over the next ten trading days. Prior to Mani's purchases, the national best bid (NBB) for NetSuite was \$10.00 and the national best offer (NBO) was \$10.10. The order flow arriving at trading venues from uninformed traders during this period involves an essentially even number of buys and sells because neither new information nor price changes motivate their trades.<sup>69</sup> Thus Mani's buy orders will leave liquidity suppliers facing each day an excess of 1000 buy orders over sell orders. Because the liquidity suppliers fear that the excess might be due to informed trading based on positive information, assume that each 1000 shares

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69. Microstructure models typically view uninformed trading as noise, such that the number of buy and sell orders submitted by uninformed traders are equal. *See supra* Part III; Fox et al, *Sense and Nonsense*, *supra* note 19, at 218-21.

of excess buy orders pushes their bids and offers up by \$0.10. Therefore, at the end of ten days, NetSuite's NBB is \$11.00 and its NBO \$11.10. Had Mani not traded, NetSuite's NBB and NBO would have remained roughly at \$10.00/\$10.10.

Mani now turns around and begins to sell his inventory of 10,000 NetSuite shares, this time selling 1,000 shares per day for ten days. This means that liquidity suppliers now face each day an order imbalance of 1,000 more sell orders than buy orders. Mani's expectation that the price response will be asymmetric proves correct: each 1,000 shares of excess buy orders pushes their bids and offers down by only \$0.05. Thus, at the end of his ten days of selling, the NBB and NBO are, respectively, \$10.50 and \$10.60.

Buying at the offer as the NBO rises, Mani accumulates 10,000 NetSuite shares for an average price of \$10.55. Selling at the bid as the NBB falls, Mani sells these 10,000 shares at an average price of \$10.75. Mani thus achieves a profit of  $10,000 \times \$0.20 = \$2000$ .<sup>70</sup>

The distributive question is who has benefited from these trades and who has been harmed. Because secondary market trading in pursuit of profits is a zero-sum game,<sup>71</sup> gains and losses by different market participants are mirror images of each other and must sum to zero. In the example, Mani makes profits of \$2,000. The liquidity suppliers, who sold him his shares for an average of

70. This \$2,000 loss assumes that the liquidity suppliers do not turn around and sell the shares quickly after they acquire them, perhaps rebalancing their inventory by the time they close each day. That is the case also with the adverse selection models of liquidity supply of the kind described in *supra* Section III.C in their treatment of informed trading. A more complicated story would recognize that liquidity suppliers might seek to rebalance their portfolios regularly and would not wait until the manipulation stopped. Using the example again, one could imagine that after each day's 1,000 share order imbalance resulting from the reversing sales transactions by the manipulator, liquidity suppliers would have a somewhat lower offer and lower bid than what would be called for by the pure adverse selection considerations described in *supra* Section III.C. The liquidity suppliers' object would be to find some price sensitive investors who would respond by sending in more buy orders and fewer sell orders than would otherwise have been the case. These investors are different from any of the market participants described in *supra* Section III.A. Each of these investors has its own reservation price for buying and selling ABC shares. An investor's reservation price is a product of its own best estimate of ABC's future cash flows based on its particular analysis of publicly available information, how long or short it already is in ABC shares, and a discount to reflect the chance that what appears to be an attractive purchase or sale price might be the result of informed trading or manipulation. See MERRITT B. FOX, FINANCE AND INDUSTRIAL PERFORMANCE: THEORY, PRACTICE AND POLICY, 34-43, 55-57 (1988). Well-developed models of inventory costs in the microstructure economics literature describe such an account. See Yakov Amihud & Haim Mendelson, *supra* note 51; Mark B. Garman, *Market Microstructure*, 3 J. FIN. ECON. 257 (1976); Hans R. Stoll, *The Supply of Dealer Services in Securities Markets*, 33 J. FIN. 1133 (1978). Because the liquidity suppliers are, as a result of needing to attract these price sensitive buyers, selling at a lower offer, but not buying at a lower bid, this strategy too is costly to liquidity suppliers. The prospect that manipulation will lead to such costs being incurred will lead liquidity suppliers to widen their spreads in order to break even, just like the \$2,000 lost in the example in the text. Because these trades are not motivated by either new private information, like those of fundamental-value informed traders, or on a search suggesting that a price change is not due to new private information, like those of anti-noise traders, these price-sensitive buyers otherwise act more like uninformed traders and are thus not considered as an additional kind of trader in the analysis in the text.

71. See LARRY HARRIS, TRADING AND ELECTRONIC MARKETS: WHAT INVESTMENT PROFESSIONALS NEED TO KNOW 22 (2015) (suggesting that "[t]rading is a zero-sum game when gains and losses are measured relative to the market index").

\$10.55 and repurchased them for an average of \$10.75, have suffered a corresponding loss of \$2,000. In aggregate, uninformed traders experience the change in stock price as a wash, with sellers being better off than if Mani had not traded and buyers being reciprocally worse off.

#### b. The Price Correction After the Manipulation

Even though the liquidity suppliers are back in balance, having purchased from Mani as many shares as they originally sold to him, this is not the end of the story. When Mani finishes his sequence of trades, the NBB and NBO are, respectively, \$10.50 and \$10.60, not down to \$10.00 and \$10.10, the prices that would have prevailed absent the manipulation. To be successful, the open market manipulator has caused the stock price to deviate from what represented the market consensus of its value. The dynamics of when, if ever, the stock price's distortion is "corrected," with the manipulation's impact having been eliminated, are crucially important to the welfare effects of manipulation. We see four plausible possibilities: three different ways in which the price can be corrected and then the stark possibility that correction never occurs.

The first two possibilities involve the price going back down to \$10.00/\$10.10, both of which involve further losses to the liquidity suppliers. One way is that NetSuite credibly announces that there is no undisclosed information within its possession that could explain the rise to \$11.00/11.10 and then the fall (part way) back to \$10.50/\$10.60. It would then be clear to the market that there was no reason the price should not be back at \$10.00/\$10.10. Announcement traders would be briefly able to profit at the expense of liquidity suppliers as the price quickly adjusted down to \$10.00/\$10.10.

Absent such an announcement, a second way that the price could adjust back to its original level is through the action of anti-noise traders. This may take considerably longer and involve considerably larger additional losses to the liquidity suppliers. The searches of the anti-noise traders to see whether there was new information justifying the price changes took too much time for them to have had the confidence to engage in trades that would have counteracted the price increases caused by Mani's purchases or accentuated the price decreases caused by Mani's sales. Eventually, however, an increasing number of anti-noise traders will become convinced that there is no new information that can justify the \$10.50/\$10.60 price level and will start to sell. As they do, they are, as noted earlier, engaging in a special kind of informed trading in the sense that they have good reason to believe that there is no such price-justifying information when others do not know this. Just like sales by a regular informed trader in possession of negative information, the sales of the anti-noise traders create an order imbalance that causes liquidity suppliers to acquire shares at a price above what the anti-noise trader correctly believes is their value and so leads to additional liquidity-supplier losses. And just like sales by a regular informed trader in possession of negative information, the

continuing order imbalance will prompt the liquidity suppliers to gradually lower their bids and offers until they reach the neighborhood of \$10.00/\$10.10, at which point the trades of the anti-noise traders will stop.<sup>72</sup>

Anti-noise trading cannot be assured to occur with every naked open market manipulation, however, because the potential anti-noise traders may not be sufficiently confident that there is no new information to justify the elevated price after the manipulation is completed.

A third way that price can return to its proper level is simply the materialization, at some later date, of what, immediately prior to the manipulation, were the future cash flows being predicted by the pre-manipulation price. For example, if the share price immediately prior to the manipulation suggested that expected future cash flows would remain steady in perpetuity, but the elevated price after the manipulation was completed suggested an increase in expected future cash flows, the price would return to its original, pre-manipulation level (barring any other news) once subsequent earnings reports showed that in fact cash flows had not increased. Obviously, this final process could take considerable time, leaving prices inaccurate for a significant period.

### 2. Ex ante Perspective

Now assume, not unrealistically, that all the players have unbiased (though not necessarily accurate) expectations concerning the prevalence of successful naked open market manipulation, and that all the players operate within a competitive environment. We want to compare what the longer run equilibrium would look like in a world where such a trading strategy is occurring freely with a world where it is somehow blocked. The object is to see how the availability of the practice affects the wealth positions of the various participants and the implications of these effects in terms of fairness and, through the incentives they create, on efficiency.

#### a. Manipulators

Naked open market manipulation will generate positive trading profits on an expected basis to the extent that its practitioners can accurately predict when asymmetric price responses will occur. The resources necessary to conduct a business in such trading are a combination of ordinary and specialized inputs. The ordinary inputs are physical, organizational, and financial assets that could equally usefully be deployed elsewhere in the economy. The specialized inputs are the efforts of key persons who possess abilities and skills uniquely useful for predicting such situations and acting on them. All of these inputs will be

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72. For a more detailed discussion of the interaction between informed traders and liquidity suppliers, see *supra* Section III.C.



drawn into this business up to the point where, at the margin, the expected profits from successfully predicting and acting on such situations equals the costs of paying for the inputs. This activity occurs in an openly competitive environment and so the suppliers of the ordinary inputs will be paid a market return comparable to what they would earn if the resources they supplied were deployed instead another way. Thus, whether naked open market manipulation occurs freely or not has no effect on their wealth positions. The persons with uniquely useful abilities and skills will be paid greater rents than they would be paid if they had to work in a different business because naked open market manipulation was somehow blocked. Thus their wealth positions will be enhanced if such manipulation is allowed to occur freely.

#### b. Liquidity Suppliers

As we have seen from the example, *ex post*, liquidity suppliers will lose in their transactions with a successful naked open market manipulator because the reversing purchases from the manipulators are on average at higher prices than the initial sales to them. The liquidity suppliers lose a second time in their transactions with the announcement or anti-noise traders that bring the price back to the level it would have been without the manipulation.

From the *ex ante* perspective, however, all these losses are passed on by the liquidity suppliers to the other traders in the market. This is because, as discussed in Part III, liquidity suppliers gain in their transactions with uninformed traders, making half the spread with each sale to the uninformed trader and half from each purchase from an uninformed trader. To survive in a competitive market, a liquidity supplier must set its bids and offers so that these losses and gains balance out (plus, if we add some real world flavor to the description, the gains must cover the returns paid to its personnel, a market return on the capital needed for real estate and equipment and for engaging in the trading itself, and compensation for the undiversified nature of the portfolio that the business will be holding most of the time).<sup>73</sup> If its spreads are wider than this, it will not attract orders because they will be undercut by other liquidity suppliers. If they are narrower than this, at least some of its inputs will be receiving less than a market return, and thus the business will not be able to survive in the longer run.<sup>74</sup>

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73. Recall that in *supra* Section III.C, we adopted a simplified analysis that abstracts away from all the costs of being a liquidity supplier except the “adverse selection” component of the spread, *i.e.*, the portion of the spread by which trading gains from transacting with uninformed investors compensate for the trading losses from transacting with informed traders.

74. The description in this paragraph is a bit of an oversimplification, because, unlike in the example here involving Mani, the market will include informed traders as well. Given the prospect of losses as the result of naked open market manipulation, the spread, which is the same for all traders, will be wider for informed traders as well, and so some of the losses are passed on to them. *See infra* Section IV.A.2.d.

Notwithstanding the passing on by liquidity traders of these losses, the existence of naked open market manipulations will still have a negative effect on the wealth positions of certain persons associated with the liquidity supply business, but only indirectly. As we have seen, the ex post trading losses are passed on through a wider spread between the bid and offer. This wider spread increases the cost of trading, which means that less trading occurs. Less trading means less of both their ordinary and specialized inputs will be pulled into the business. Suppliers of the ordinary inputs will earn the same ordinary market return whatever the level of liquidity supply activity. For persons with abilities and skills uniquely useful for liquidity supply, however, they will be paid less in rents and so their wealth positions would be negatively affected by the prospect of successful manipulation of this type.

### c. Uninformed Traders

The expected cost to uninformed traders from naked open market manipulation is the need, in the cycle over time of a purchase and sale, to pay the increase in spread because this kind of manipulation is occurring: they will purchase at the offer but only be able to sell at the bid. Calculating the ultimate incidence of this cost on uninformed traders is a bit complicated, however. When an issuer's entrepreneurs and initial investors engage in an initial public offering, the shares they are offering will be discounted to reflect the prospect that the spread must be paid with each subsequent sale and purchase in the secondary market as well as the prospect that any future equity offerings by the issuer over time will be similarly discounted. So, the entrepreneurs and early investors receive less than if there were no impact on the spread by this kind of manipulation. This discount continues at the same level for as long as the firm appears to have a long run future. For uninformed investors who buy and sell less frequently than average, this discount makes the purchase a bargain and so they are gainers from naked open market manipulation. Those who buy and sell more frequently than average<sup>75</sup> are hurt by repeatedly paying the spread more than they are helped by the discount, and so they are losers from the practice.

### d. Informed Traders

Informed traders of each kind pay the same increased spread due to the presence of naked open market manipulation that uninformed traders do. This increase in their cost of doing business has a depressing effect on the level of each of the kinds of informed activity. This decreases the level of resources going into each of these activities, with a negative wealth impact on the

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75. Brad M. Barber & Terrence Odean, *The Behavior of Individual Investors*, in HANDBOOK OF THE ECONOMICS OF FINANCE 1533, 1534 (George M. Constantinides et al. eds., 2013) ("Many apparently uninformed investors trade actively, speculatively, and to their detriment.").

suppliers of the specialized inputs. The level of fundamental-value informed trading will be most sensitive to this increase in cost. This is because fundamental-value informed traders create, at a cost to them, the information on which they trade. A wider spread means their trading will be less profitable and so they have less incentive to create information. In contrast, the level of issuer insider and non-issuer insider informed trading and trading based on the tips of such insiders depends mostly on the opportunities that the insiders encounter in their employment.

The decrease in the level of fundamental-value informed trading is unfortunate because the social gain from its contribution to long run price accuracy exceeds the social costs of the activity.<sup>76</sup> Thus, the social disadvantage from a lower level of fundamental-value informed trading is likely to dominate the advantage from the likely smaller decrease in the other, socially undesirable, forms of informed trading.

#### e. Anti-noise Traders

The prospect of naked open market manipulation will draw resources into the business of anti-noise trading, which increases the level of resources going into this activity. This produces a positive wealth impact on the suppliers of the specialized inputs.

### 3. Fairness Considerations

Based on the survey above, we can see that freely occurring naked open market manipulation will not affect the wealth position of uninformed traders from an ex ante point of view because they are as likely to benefit as to be hurt when the price at which they buy or sell is influenced by such a manipulation. It may add to the riskiness of their trading, but this is a risk that can typically be eliminated by holding a diversified portfolio. They will face an increase in the bid-ask spread, but on average this will be compensated by the lower cost of buying shares that earn a given expected return.

The wider bid-ask spread will result in fewer resources being drawn into the businesses of liquidity supply and fundamental-value informed trading, thereby decreasing the wealth positions of their specialized input suppliers. The prospect of profits will draw resources into the business of manipulation and the business of anti-noise trading, thereby increasing the wealth positions of their respective specialized input providers. A prospective flow of rents is not an entitlement, however. In a market economy, the offer of rents to prompt the suppliers of specialized inputs to come forward is simply the mechanism by which these resources get directed to the activity for which they are most particularly suited. The effects on the rents being paid in the case of the four

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76. See Fox et al., *Informed Trading*, *supra* note 19.

businesses being considered here do not raise any greater fairness issues than do the rents paid persons with special abilities and skills across the whole market-based part of our economy. The bottom line is that the more serious normative question concerning naked open market manipulation is whether its effect on the allocation of resources enhances or decreases efficiency.

### 4. Efficiency Considerations

From an efficiency point of view, naked open market manipulation has no redeeming virtues. It consumes resources that could be usefully employed elsewhere in the economy and has a negative impact on both price accuracy and liquidity.

#### a. Price Accuracy

As our discussion of the workings of the market shows, in the absence of manipulation, market prices have the remarkable quality of reflecting a large amount of information relevant to predicting an issuer's future cash flows. Naked open market manipulation moves price away from where it otherwise would be, at least temporarily (and sometimes for longer), reducing price accuracy. In essence, it acts as a kind of informational pollutant, making stock prices noisier signals of actual value. Interestingly, however, while most commentators and jurists focus on the price distortion effects of the practice, reduced price accuracy may be the less important of open market manipulation's negative social consequences, at least unless an issuer's shares were subject to such manipulation very frequently. Recall that the ways that accurate prices benefit the economy is by helping to allocate the economy's scarce capital to the most promising potential real investment projects and by improving the utilization of the economy's existing productive capacity through optimizing the signals provided to management about investment decisions and the signals given to boards and shareholders about the quality of management decisions.<sup>77</sup> Very short run distortions in price of the kind that will typically occur with naked open market manipulation will not seriously undermine the role that share prices play in guiding the real economy in these ways.

However, if neither of these corrective forces comes into play, then the price can remain significantly inaccurate for a substantial period of time.<sup>78</sup> In this event, the manipulation would result in both inefficiencies arising from longer term price inaccuracies as well as the negative efficiency related to liquidity we will now discuss.

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77. *See supra* Section II.C.1.

78. *See supra* Section IV.A.1.b.

### b. Liquidity

The prospect of freely occurring naked open market manipulation has a clear long-term, ongoing negative impact on the liquidity of an issuer's shares because liquidity suppliers will defend themselves against the possibility of losing to such manipulators, and losing again in the price correction process, by widening their bid-ask spreads and decreasing their depth of book. As we have seen, less liquidity reduces social welfare because of the resulting misallocation of resources over time and misallocation of risk: socially beneficial transactions fail to occur, leaving investors with suboptimal, riskier portfolios, and driving up the cost of capital for firms.<sup>79</sup> By raising the costs of fundamental-value informed trading and thereby lessening the incentives to search out and trade on new information, less liquidity also reduces longer run share price accuracy.<sup>80</sup>

### c. Resource Misallocation

The prospect of naked open market manipulation also pulls additional resources into the anti-noise trading business. While these traders perform the socially useful function of correcting prices from their distorted level at the end of a manipulation, their efforts would not be needed in the first place absent the manipulation. Without the prospect of manipulation, these extra resources would be used elsewhere in the economy, positively contributing to the production of goods and services.

### d. Market Confidence

There is one additional, more nebulous efficiency consideration: market confidence. This relates to a sense among investors that the market is fair, part of the fifth basic social goal discussed above. Even if naked open market manipulation does not in fact decrease the wealth position of ordinary investors, and the additional risk created by it can be diversified away, public awareness that it occurs may hurt everyday investors' "confidence" in the stock market. Such manipulations may strike the public as unfair and improper in some way that is harmful to them. As a result, to the detriment of both them and others, they may participate in the stock market to a lesser degree.<sup>81</sup>

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79. *See supra* Section II.C.2.

80. *Id.*

81. *See* Lydia Saad, *U.S. Stock Ownership Stays at Record Low*, GALLUP ECON. (May 8, 2013), <http://news.gallup.com/poll/162353/stock-ownership-stays-record-low.aspx> [<http://perma.cc/FU35-QUMR>]. Michael Lewis attributes this drop, which has occurred in the face of a sharply rising market over the last five years, to a sense that the market is unfair. *See* MICHAEL LEWIS, *FLASH BOYS: A WALL STREET REVOLT 200-01* (2014); *see also* Editorial Bd., *The Hidden Cost of Trading Stocks*, N.Y. TIMES (June 22, 2014), <http://www.nytimes.com/2014/06/23/opinion/best-execution-and-rebates-for-brokers.html> [<http://perma.cc/5U2M-MM2E>].

Typically, the best response to public misunderstanding is to resolve it through education, but where a perception may be especially difficult to eradicate and it is causing damage, then that perception may provide an independent policy ground for prohibiting the relevant conduct.

### *B. Are There Expected Profits?*

The example of Mani above suggests that there can be expected profits associated with naked open market manipulation. This is in sharp contrast with the conclusions of Daniel Fischel and David Ross's seminal article where they argue that manipulation should not be legally prohibited.<sup>82</sup> One of their two principal reasons for reaching this conclusion is that open market manipulation cannot have expected profits associated with it. Thus, it need not be made illegal because it is self-detering.

#### 1. The Fischel and Ross Arguments as to Why Profitable Manipulation Is Impossible

Fischel and Ross make two arguments as to why profitable manipulation is not possible.<sup>83</sup> First, they say, most securities markets, and especially the stock of large public firms, are highly elastic and liquid.<sup>84</sup> Because of this, they reason, trading will typically have no effect on price, as holders of a security will simply sell it to a willing purchaser and substitute into a different security with a similar cash-flow profile. This argument, though, ignores the basic lesson of microstructure economics that, to a liquidity supplier in an anonymous market, all trade in a stock is potentially informed trade and thus will in fact generally move price at least to some extent.<sup>85</sup>

Fischel and Ross's second line of argument at least recognizes the possibility that a trade could be interpreted as indicating someone has information not yet reflected in price. Here, they say that bids and offers may move up if a trader putting in purchase orders is perceived to be informed by the market, in which case quoting behavior will adjust to reflect the information thought to be motivating a transaction, but the trader will also be thought to be informed when she sells as well, thereby on average driving bid and ask back down to where they were.<sup>86</sup> Moreover, the would-be manipulator will buy at the offer on the way up and sell at the bid on the way down. So on average, she will actually suffer a net loss. Given this, in the long run, would-be manipulators will certainly lose, and so Fischel and Ross conclude that

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82. Fischel & Ross, *supra* note 3, at 506.

83. *Id.* at 517-18.

84. *Id.* at 517.

85. *See supra* Section III.C.

86. Fischel & Ross, *supra* note 3, at 518.

market manipulation is self-detering. Anyone foolish enough to be a would-be manipulator will eventually learn her lesson and stop trying.

The problem with this second argument is that it fails to recognize the possibility of an *asymmetric price response*.<sup>87</sup> Empirically we observe that the price response to new orders relating to any stock in fact can vary over time.<sup>88</sup>

## 2. Can an Asymmetric Price Response Ever Be Anticipated

The mere fact that the price response to new orders varies over time does not by itself prove that naked open market manipulation can generate expected profits. It is also necessary that circumstances arise under which an asymmetric response has some degree of predictability. Note that in the Mani example set out above, we posit that Mani rationally assesses that it is probable that his purchases will push price up by more than his subsequent sales will push them down, but we do not discuss his basis for this expectation.

Thus, a key question is whether there are in fact circumstances under which it is, more likely than not that, there will be an asymmetric price response in a particular direction. The answer is that there are. Below, we give examples of a few such circumstances.

### a. A Period of Unusual Uncertainty

One such circumstance is where it is predictable that there will be more fear of informed trading before a certain moment in time than after. For example: an issuer is expected to announce its earnings on a certain date and there is uncertainty as to what will be announced, with the possibility that it might be either above or below some mean expectation.<sup>89</sup> In the run up to the announcement, a liquidity supplier finds an order imbalance in either direction to have heightened significance because of the greater-than-usual likelihood that an issuer insider, or her tippee, is trading. Thus, if the manipulator put in

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87. Since Fischel and Ross's work, many other commentators have recognized this flaw in their argument, often in different respects. See HARRIS, *supra* note 16, at 259, 265-68 (developing the possibility of asymmetric price response); Franklin Allen & Douglas Gale, *Stock Price Manipulation*, 5 REV. FIN. STUD. 503 (1992); Steve Thel, *\$850,000 in Six Minutes – The Mechanics of Securities Manipulation*, 79 CORNELL L. REV. 219, 240-47 (1994) (discussing how a manipulator may profit by trading so as to alter others' expectations); see also Franklin Allen & Gary Gorton, *Stock Price Manipulation, Market Microstructure and Asymmetric Information*, 36 EUR. ECON. REV. 624 (1992); Robert A. Jarrow, *Market Manipulation, Bubbles, Corners, and Short Squeezes*, 27 J. FIN. & QUANT. ANALYSIS 311 (1992).

88. See *supra* Section III.C.5; see also David Easley, Marcos M. Lopez de Prado & Maureen O'Hara, *Flow Toxicity and Liquidity in a High Frequency World*, 25 REV. FIN. STUD. 1457, 1478 (2012); David Easley et al., *Time-Varying Arrival Rates of Informed and Uninformed Trades*, 6 J. FIN. ECONOMETRICS 171, 198 (2008) (arguing that trading dynamically reacts to the perception of information-based trading).

89. See Easley et al., *supra* note 88 at 197-99 (showing how the probability of informed trading varies around the days of earnings announcements with "the proportion of informed trades increases as the announcement date approaches and declines after the announcement").

orders creating such an imbalance during this period of extra uncertainty, it would prompt a greater than usual adjustment in the supplier's bid and offer. Once the announcement is made, the fear of issuer insider trading would diminish and the liquidity suppliers' bid and ask adjustments in response to order imbalances would diminish along with it. Thus, the manipulator can reverse her transactions with less impact on price and end up with a profit.

We should note, however, that while this kind of circumstance may arise quite often, it may not prompt very much manipulation. A manipulator trying to take advantage of such a circumstance will put herself in an unusually risky situation. The very reasons that make the liquidity supplier so sensitive to order imbalances mean that there is a heightened chance that informed trading is in fact going on. If it is, there is a 50-50 chance that the informed trader or traders are trading in the opposite direction from the manipulator, who is uninformed and hence has no idea which way they are trading. In such a case, the manipulator would need to transact in a very large number of shares for the price to move significantly because her orders would be just cancelling out the imbalance created by the informed trader or traders. At the end, the manipulator would be stuck with a huge inventory of shares at the time of the announcement, which, as predicted by the informed traders, moves the price in the wrong direction from what the manipulator wants.

### b. Shopping for Stops

Another circumstance, sometimes referred to as "shopping for stops," would be where there are an unusually large number of stop loss orders existing at the moment.<sup>90</sup> On the offer side, a stop-loss order is an order to buy if the price goes above a certain level. It would typically be placed by someone who is in a short sale position. He does so in order to place some kind of ceiling on his potential losses if the share price goes above a certain point. If there are an unusually large number of stop-loss orders on the offer side, the manipulator's purchases on the way up will have a supercharged effect on price because, as his orders drive the price up, the stop-loss orders are tripped, thereby triggering more buying orders. When the manipulator turns around to sell, the prices in the market, as they go down, will on average be well above the bid side stop-loss orders (typically put in by someone in a long position seeking a ceiling on her losses). So, prices do not decline as fast in reaction to the manipulator's sales because none of the bid stop-loss orders are tripped. The tricky part of this game, though, is that stop-loss orders that are posted with exchanges are typically not revealed. They may also just be resting with a broker who is directed to submit them if the price reaches a certain level. Still, with aggressive trading to test the state of the market, a manipulator might be

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90. HARRIS, *supra* note 71, at 14 (discussing the triggering of stop-loss orders as a market manipulation strategy).



able to detect a situation with an unusually large number of stop-loss orders, though it could be expensive to do so.

### c. Book Fragility

A third possibility is that the manipulator detects that there is less depth of book than usual (a “fragile book”) on one or both sides of the market. Recall that a fragile book on the offer side, for example, would have standing visible offers for fewer shares than usual at prices above, but still close to, the NBO and the book would not refill quickly once marketable orders were executed against these quotes. A fragile book on the bid side is just the mirror image of this with the NBB as the baseline. If the fragility is on just one side, the manipulator’s orders in that direction will run through the limit orders in the book, quickly moving the price. But, when he reverses and starts submitting the opposite orders, there will be more limit orders on this side of the book, which will absorb his orders and soften their price impact. The trick again is to determine what the state of the book is given that many orders are not displayed. Again, this can be tested by putting in smaller orders and seeing if the visible book refills immediately or not. As discussed earlier, there is empirical evidence suggesting that that just such “exploratory trading” occurs often in the commodity futures market and is followed by naked open market manipulative trading.<sup>91</sup>

### C. *The Appropriateness of Legal Sanctions*

The other principal reason that Fischel and Ross oppose the legal prohibition of manipulation is that no observable conduct separates manipulative trading from trading for other purposes. Determining the purpose of the transaction is highly speculative. Thus, they argue, making open market manipulation illegal will deter many worthwhile transactions as well. This is because persons contemplating these worthwhile transactions will fear that their transactions will be mistaken for manipulative ones. We agree with their concern but take issue with their assumption that there is never observable conduct to distinguish manipulative transactions from socially useful ones.

Consider the three circumstances we discuss just above where it may be possible for a manipulator to assess that an asymmetric price response is more probable than not. In the case of the first circumstance – unusual uncertainty that will be resolved soon – there is indeed no observable conduct that would separate the manipulator from an investor who simply buys based on hard work analyzing the future of the issuer, and then sells when his best guess turns out to be correct when the issuer’s price increases. Thus, while, at least as a conceptual matter, there may be times in such a situation where naked open

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91. Clark-Joseph, *supra* note 37.

market speculation will have positive expected profits, we see no way of intelligently imposing legal sanctions except where there is direct evidence, such as an email, as to the trader's purpose.

In contrast, in the other two circumstances, shopping for stops and book fragility, a manipulative trader would need to engage in observable market conduct to enjoy expected profits: she would need to test the market to see what the stop loss or book fragility situation is. We thus advocate a rule that imposes legal sanctions for a series of purchases followed by a series of sales (or vice versa) that yield a profit where the first set of transactions was preceded by this kind of testing of the market. This kind of conduct would strongly suggest that the trader was entering into these transactions at least in part to profit from the socially negative practice of naked open market manipulation, and quite possibly this was the only motivation. In other words, there is a low risk that the rule would deter transactions solely motivated by some other socially worthwhile purpose. There is nothing wrong with deterring transactions that are motivated both by a desire to profit from such manipulation and by some other socially worthwhile purpose. This is because something affirmative and observable—the testing of the market—was necessary for the socially negative manipulation motive to be included. So imposing legal sanctions should deter undertaking the affirmative conduct, which is the vehicle for acting on the manipulative motive, but not transactions based on a socially worthwhile purpose.

### V. Open Market Manipulation with an External Interest

Open market manipulation with an external interest involves a trader who has some kind of interest in the price of a security independent of the price at which she can buy and sell it in the open market. Shortly in advance of the moment when the price will determine the value of this independent interest, the trader purchases a number of shares and the resulting upward push on prices leads to a gain based on the increase in the value of the external interest. Once this moment has passed, she resells the shares that she previously purchased to push the price up.<sup>92</sup> To yield an expected gain, this strategy does not require that the likelihood of an asymmetric price reaction be sufficiently great to make up for the costs of the trading involved. It only requires that the expected gain derived from the inflated price pushing up the value of the external interest be greater than the costs of trading. This is a condition that would be easily satisfied for an external interest of any real size.

The analysis below suggests that open market manipulation with an external interest is also a trading strategy that gives rise to an affirmative

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92. Again, the concept also covers the mirror set of transactions where the initial transaction is a sale and the trader has an external interest whereby he enjoys a greater gain from a lower share price.

answer to each of the four foundational questions posed at the beginning of this Article, and hence is an appropriate target of a ban under the Exchange Act. Again, it is socially harmful in a distinguishable way that would fit under the broad dictionary meaning of the word “manipulation,” there are circumstances under which the strategy can yield positive expected profits, and there is a legal rule available to deter it that will not deter many socially valuable transactions at the same time.

*A. The Example of United States v. Mulheren*

Open market manipulation with an external interest is well-illustrated by the famous case of *United States v. Mulheren*.<sup>93</sup> In *Mulheren*, Carl Icahn and Ivan Boesky had accumulated a substantial minority ownership position in Gulf & Western Industries, Inc. (“G&W”) and approached Martin Davis, the chairman of G&W, about Boesky’s interest in taking control of G&W or securing board seats on the company.<sup>94</sup> Davis was adamantly opposed to both of Boesky’s proposals. Boesky then called Davis and offered to sell back his block of shares to G&W at \$45, which was higher than its current trading price on NYSE. Davis replied that G&W would buy back Boesky’s block, but only at the price at which the company traded on NYSE at the time of purchase. Soon after, Boesky contacted John Mulheren. Their conversation was the centerpiece of the prosecution’s case. According to Boesky’s testimony, Boesky told Mulheren that he liked G&W’s stock, which was then trading at \$44.75, and that “I would not pay more than 45 for it and it would be great if it traded at 45,” to which Mulheren replied, “I understand.”

At 11:00 a.m., the morning after Boesky’s conversation with Davis, Mulheren’s trading firm submitted orders to buy 75,000 G&W shares. So far that morning, G&W had only traded 32,000 shares total, still at \$44.75. By the time Mulheren’s orders had transacted, however, the price of G&W stock had risen to \$45 per share. Within ten minutes of those transactions, Boesky and Icahn then called Davis to take him up on his offer to buy their G&W shares at the market price. As a result, they were able to sell their combined 6,715,700 G&W shares to G&W at \$45 per share, generating \$1,678,925 (6,715,700 x \$0.25) more in proceeds than if the sale to G&W had occurred at \$44.75. G&W closed at \$43.63 that day, leading to a loss of \$64,406 for Mulheren.

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93. 938 F.2d 364 (2d Cir. 1991). Steve Thel was the first to note how this case illustrates the weaknesses of Fischel and Ross’s arguments. See Thel, *supra* note 87.

94. *Mulheren*, 938 F.2d at 365-67.

*B. Wealth Transfers: Their Fairness and the Efficiency Effects of Their Incentives*

We will discuss *Mulheren's* tortured legal history later in this paper. In any event, the case provides an excellent illustration of open market manipulation with an external interest if we assume, as the jury did, that *Mulheren's* purchases were made as a favor to *Boesky*: to increase the price of *G&W* stock, so that *Boesky* could gain more out of his arrangement with *Davis*. The case shows that a manipulative scheme can be enormously profitable if there is a separate deal referring to the stock's price, even if direct trading of that security on the exchange system turns out to be unprofitable. So, while *Mulheren* may have lost \$64,406, *Boesky* and *Icahn* profited by almost \$1.7 million as a result of the price rise that accompanied *Mulheren's* purchases. The alleged schemers stood to profit not from *Mulheren's* trades themselves, but from the "off-market" side-deal between *Boesky* and *Davis*, which referred to a market price.

Other than the impact on the immediate parties, this kind of open market manipulation has little in the way of wealth consequences. Because there is no predictable price response asymmetry, professional liquidity suppliers suffer no expected losses from such a manipulation. In fact, it gives them extra business just like an additional uninformed trade. Thus the prospect that such manipulation will occur from time to time will not lead liquidity suppliers to widen their spreads and make stock trading less liquid. Uninformed and informed traders who happen to be trading in the same direction as the manipulator during the period that the price is distorted will be hurt, but those trading in the opposite direction will be helped by the same amount. As a result, the practice has no *ex ante* effects on the wealth positions of either uninformed or informed traders. In sum, there is little to raise fairness concerns about open market manipulation with an external interest beyond its effect on the immediate parties to the arrangement giving rise to the external interest.

What about the efficiency effects of freely occurring open market manipulation with an external interest? As we have just seen, it will not affect liquidity because liquidity suppliers do not need to widen their bid-ask spreads to protect against the possibility they are trading with such a manipulator. It will lead to a temporary distortion in price, but, just like the temporary distortions caused by naked open market manipulation, these distortions will not seriously undermine the role that share prices play in guiding the real economy.

The real concern that would be raised by this kind of manipulation is its effect on the cost of contracting. At least in principle, the government could take a *caveat emptor* approach toward financial arrangements that refer to manipulable market prices. Sophisticated parties could be relied upon to either eschew such terms or to require counterparties to avoid manipulative behavior and to then carefully monitor whether they comply. Suppose two parties enter

an arrangement referring to a market price, but the contract fails to prohibit price-changing trading. One might maintain that the party that loses as a result of price-changing trading by the counterparty simply entered into a freely negotiated, but not very intelligently considered, contract and that he should be held to it. One could reach a similar conclusion where the contract did contain such a prohibition but the trading occurred anyway and the negatively affected party failed to monitor the trading of the other party. In other words, the negatively affected party has no one to blame but himself because he could have negotiated a better arrangement. In the *Mulheren* example, for instance, rather than simply pegging his arrangement to the NYSE price at a given moment, Martin Davis could have pegged his deal with Boesky to the volume weighted average price for the stock over the course of an entire day, making it effectively impossible to profitably manipulate. It certainly makes contracting more expensive if parties must also monitor for manipulation, but that only clarifies that the real efficiency question here concerns the relative competence of private parties and the government in determining and enforcing contract terms and monitoring their compliance.

It is fairly obvious that the parties to almost all contracts making reference to stock prices would want a prohibition on manipulation, at least if each thought about the matter and there was reason to expect a high level of compliance. This is because allowing manipulation undermines the very purpose of the reference to a firm's share price. Moreover, a number of factors counsel that the government may more efficiently monitor for manipulation than private parties. First, simply avoiding the use of market price terms will not be easy. Hundreds of trillions of dollars in financial contracts make use of market prices as referents for the simple reason that they provide enormously important information about pertinent economic realities.<sup>95</sup> Second, the government is likely to enjoy significant economies of scale in monitoring for misconduct and prosecuting wrongdoers.

One might argue that it is inappropriate to use the securities laws to enhance simple contracting. Something very similar, however, is being done in cases involving trading by an insider of a non-issuer entity. Consider, for example, an insider of an acquirer in a potential hostile tender offer. When such an insider trades on the basis of the confidential material information that he has learned in his job, he violates SEC Rule 10b-5 under the misappropriation theory.<sup>96</sup> However, the insider is punished not for a breach of duty to the person with whom the securities transaction is being conducted, but for the insider's source of information. In other words, the securities laws are used to reinforce a more general legal obligation—not to use information gained from a principal

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95. See Gabriel Rauterberg & Andrew Verstein, *Index Theory: The Law, Promise and Failure of Financial Indices*, 30 YALE J. ON REG. 1 (2013) (describing the extensive use of market benchmarks in contracts); Andrew Verstein, *Benchmark Manipulation*, 56 B.C. L. REV. 215, 220, 242-43 (2015).

96. See *United States v. O'Hagan*, 521 U.S. 642 (1997).

for personal profit—simply because a securities transaction happens to be the means of making this profit.<sup>97</sup>

### C. *The Appropriateness of Imposing Legal Sanctions*

Assuming that one is comfortable with using the securities laws to protect contracting that depends on securities prices, the argument for imposing legal sanctions on open market manipulators with an external interest are strong. As the *Mulheren* example (or just one's imagination) shows, there are definitely circumstances under which the practice can generate large positive expected profits.<sup>98</sup> If the practice occurred freely, it would be socially costly because its free occurrence makes contracting more costly and contracting is socially valuable.

In our view, legal sanctions should be imposed where it is proved that a trader with such an external interest makes a purchase just in advance of the moment at which the security's price determines the gain that arises from the trader's external interest. Doing so is very unlikely to deter any socially useful transactions because it would be highly coincidental that a trader would want to engage in a purchase just at that moment for any purpose other than obtaining the external gain.

## VI. Misstatement Manipulation

Misstatement manipulation involves a trader who makes a materially false negative statement concerning an issuer that pushes down its price, purchases a certain number of shares in the market, waits until the truth comes out, and then resells the shares.<sup>99</sup> Even though the misstatement manipulator may have no connection with the issuer, he may be able to affect the price of its shares. The statement could be the trigger for a false rumor that spreads through the market, or it might be a public statement from a source that investors regard as trustworthy and knowledgeable concerning some aspect of the issuer's future. Our analysis suggests that misstatement manipulation is also a trading strategy that gives rise to an affirmative answer to each of the four foundational

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97. The point here is that one could argue that this conduct is more appropriately the province of state fiduciary or contract law, because it does not directly concern interactions between traders in a securities market.

98. See Thel, *supra* note 87, at 251-55, another seminal article on manipulation, for an extensive and illuminating discussion of the *Mulheren* case. Thel uses the case to respond the Fischel and Ross argument that open market manipulation cannot be profitable. Because the *Mulheren* case involves an open market manipulation with an external interest, it does not really show that naked open market manipulation can be profitable. So Thel did not fully rebut the Fischel and Ross argument that it cannot be. The case does show, however, that open market manipulation with an external interest can be very profitable.

99. Again, the mirror set of actions—making a falsely positive statement about an issuer that pushes its share price up, selling (or short selling) the shares, and then repurchasing (or closing the short position) after the truth comes out—would also be misstatement manipulation.

questions posed at the beginning of this paper, and hence is an appropriate target of a ban under the Exchange Act. Again, it is socially harmful in a distinguishable way that would fit under the broad dictionary meaning of the word “manipulation,” there are circumstances under which the strategy can yield positive expected profits, and there is a legal rule available to deter it that will not deter many socially valuable transactions at the same time.

#### *A. Misstatement Manipulation as a Kind of Informed Trading*

Misstatement manipulation is actually a special kind of informed trading. Just like a corporate insider who trades on confidential information that he obtained from his employer, the misstatement manipulator makes his purchases on the basis of something that he knows and the market does not: the falsity of the price-depressing misstatement for which he is responsible.

As we demonstrated earlier, informed trading, on the one hand, moves share price on average in the direction of greater accuracy, and, on the other hand, reduces liquidity.<sup>100</sup> Thus it is necessary to net out the tradeoff between the positive social impact from improved share price accuracy and the negative social impact from decreased liquidity. We have concluded in another paper that trading on the basis of fundamental-value information is socially desirable, while trading on the basis of announcement information, issuer inside information and non-issuer inside information (unless permitted by the non-issuer institution that generated the information) is socially undesirable.<sup>101</sup> Our efforts at netting out leading to these conclusions are just reasoned judgments, however. Misstatement manipulation is different. The act of trading itself moves price in the direction of greater accuracy because the purchases push the price up somewhat from its depressed level, but the larger strategy includes the misstatement that created the inaccuracy in the first place. So the overall strategy of misstatement manipulation unambiguously damages social welfare by both making prices less accurate and reducing liquidity. An arsonist does not become a hero by putting out the fire that he started in the first place.

#### *B. Wealth Transfers: Their Fairness and the Efficiency Implications of the Incentives Created*

The ex post and ex ante analyses are very similar to those for naked open market manipulation if we again explore a similar, simple story where there are just the misstatement manipulator, the liquidity suppliers, and uninformed traders.<sup>102</sup> The manipulator makes money because he buys the securities for

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100. See *supra* Section III.C.

101. See Fox et al., *Informed Trading*, *supra* note 19.

102. A more nuanced analysis would include price-sensitive, fundamental-value informed traders—those who sell in response to the price increase resulting from the misstatement manipulator’s purchases, because given the publicly available information including the false statement,

less than they are worth and sells them back for what they are worth (minus the bid-ask spread per share). The liquidity suppliers lose the same amount of money because they sell shares to the manipulator at a price below their value and buy them back from the manipulator at a price equal to what they are worth (again, these losses are reduced by the same bid-ask spread per share). Uninformed traders who sell while the price is depressed receive too little (though this is somewhat ameliorated for those that sell after the manipulator's purchases), but the uninformed traders who buy during this period acquire an equal number of shares and pay commensurately too little. Ex ante, the liquidity suppliers will increase their spreads to compensate for the prospect of losing money to misstatement manipulators, and so the only wealth effects are diminished rents to specialized inputs that occur because a wider spread means less business for liquidity suppliers. Uninformed investors are unaffected ex ante by the prospect of the practice since they are as likely to be winners as losers from it. While they will have to pay the additional spread, share prices will be discounted at the time of their original issue and in ongoing secondary trading to reflect this additional spread. In sum, fairness issues do not loom large.

From an efficiency point of view, misstatement manipulation both makes prices less accurate and decreases liquidity. Again, the decrease in liquidity may be the more serious socially negative effect. Particularly in the case of a misstatement that is the start of a false rumor, the truth may come out quickly. So, as with the other two forms of manipulation, the price distortions from misstatement manipulation will not seriously undermine the role that share prices play in guiding the real economy.

### *C. The Appropriateness of Legal Sanctions*

We propose a rule that imposes legal sanctions when a trader (i) knowingly makes a materially false or misleading statement under circumstances where a reasonable person would expect it to likely have an effect on price and (ii) then makes a securities transaction in the direction that would yield positive expected profits given the misstatement's effect, followed by later transaction(s) in the opposite direction. This kind of conduct would strongly suggest that the trader was entering into these transactions at least in part to profit from the socially negative practice of misstatement manipulation. As with our proposed rules for the other two kinds of manipulation, there is little risk that the rule would deter transactions motivated entirely by some other socially worthwhile purpose. Again, there is nothing wrong with deterring transactions that are motivated both by a desire to profit from such manipulation and by some socially worthwhile purpose as well. This is because

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they think that the stock has become overpriced. This does not change the basic conclusions, however. See *supra* note 55.



something observable and affirmative—the false or misleading statement—is necessary for the socially negative manipulation motive to be included. So, imposing legal sanctions should deter undertaking the affirmative conduct that is the vehicle for the socially negative motive, not transactions to the extent that they are based on the socially worthwhile motive.

## VII. The Law of Securities Manipulation

Mirroring the confusion among popular and scholarly commentators, the federal district courts and circuit courts of appeal are riven by a series of splits regarding some of the most foundational questions about manipulation: What is open market manipulation? Is any form of open market manipulation unlawful under SEC Rule 10b-5, the workhorse of securities enforcement? What is the relationship between a fraud claim and a manipulation claim involving a misrepresentation under SEC Rule 10b-5, and are they subject to different pleading requirements? After reviewing the relevant array of precedents, we will offer our view as to how these issues should be resolved.

The principal tools for attacking all three types of equity market manipulation discussed in this Article are Sections 9(a) and 10(b) of the Securities and Exchange Act.

### A. Open Market Manipulation

The courts have not made a formal distinction between naked open market manipulation and open market manipulation with an external interest and so the law relating to the two will be discussed together. Two provisions of the 1934 Act are relevant here: Sections 9(a) and 10(b).

#### 1. Section 9(a)

Section 9(a)(1) prohibits individuals from engaging in two specific forms of manipulation—“wash sales” and “matched sales”—whose anti-social aspects are relatively uncontroversial.<sup>103</sup> These sales involve, respectively, a trader who trades with himself and a trader who trades with a prearranged counterparty.<sup>104</sup> These trades result in no effective change in beneficial

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103. SEC v. Competitive Techs., Inc., No. CIV.A.3:04CV1331 (JCH), 2005 WL 1719725, at \*6 (D. Conn. July 21, 2005) (“In order “[t]o make out a violation of subsection 9(a)(1) . . . a plaintiff must prove the existence of (1) a wash sale or matched orders in a security, (2) done with scienter and (3) for the purpose of creating a false or misleading appearance of active trading in that security” (citations omitted)); see also *id.* (“Section 9(a) claims must allege that defendants acted with the purpose of creating a false appearance of active trading (in the case of 9(a)(1) claims) and the purpose of inducing others to trade in the stock (in the case of 9(a)(2) claims).”).

104. See 15 U.S.C. § 78i(a)(1) (2012) (prohibiting “effect[ing] any transaction in such security which involves no change in the beneficial ownership thereof, or (B) . . . enter[ing] an order or orders for the purchase of such security with the knowledge that an order or orders of substantially the same size, at substantially the same time, and at substantially the same price, for the sale of any such

ownership and so serve no socially useful purpose as trades. They are socially harmful, however, in terms of the transaction reporting that they generate. Other traders do not know that the reported transactions involve wash or matched sales. They assume the reported prices reflect the valuations of persons who are engaged in genuine purchases and sales of the stock and they react accordingly to their disadvantage. Moreover, at least briefly, the share price is made less accurate. For reasonably thickly traded stocks, the efficient market hypothesis assures that prices fully reflect all publicly available information. This assumes that the reported prices are the result of trades genuinely involving value calculations on the part of all buyers and sellers (other than the uninformed, who have no influence on price). Wash or matched sales cause the price to deviate from this efficient price and hence make it a less accurate appraisal of an issuer's future cash flows.

Section 9(a)(2) relates to a wider range of activity. It prohibits effecting “a series of transactions” in a security (i) that “creat[e] actual or apparent active trading” or affect its price, (ii) “for the purpose of inducing the purchase or sale of such security by others.”<sup>105</sup> For this prohibition to have practical meaning, its bite must come from defining what constitutes an illegitimate purpose. The case law reviewed below shows how difficult this has been for the courts and the help that can come from approach developed here. Recall that in the end, this simply boils down to the issue of what constitutes satisfactory evidence that the motivation of at least some portion of a person's trading activity is simply to move the price.

The case law on manipulation is littered with references to § 9(a)(2),<sup>106</sup> yet there has been a consistent failure to substantively analyze, precisely identify, or even define the improper purpose required by the provision or discuss what evidence would satisfactorily prove it. Rather, the cases typically reiterate the language of the statute<sup>107</sup> or provide such question-begging statements as the Seventh Circuit's:

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security, has been or will be entered by or for the same or different parties” where this is done for “the purpose of creating a false or misleading appearance of active trading in any security other than a government security, or a false or misleading appearance with respect to the market for any such security”).

105. See § 78i(a)(2). See generally *AnchorBank, FSB v. Hofer*, 649 F.3d 610, 616–17 (7th Cir. 2011); *Chemetron Corp. v. Business Funds, Inc.*, 682 F.2d 1149, 1164 (5th Cir. 1982), *vacated on other grounds*, 460 U.S. 1007 (1983); *Sharette v. Credit Suisse Int'l*, 127 F. Supp. 3d 60, 78 (S.D.N.Y. 2015); *Cohen v. Stevanovich*, 722 F. Supp. 2d 416, 424 (S.D.N.Y. 2010); *SEC v. Malenfant*, 784 F. Supp. 141, 144 (S.D.N.Y. 1992).

106. See, e.g., *Markowski v. SEC*, 274 F.3d 525, 529 (D.C. Cir. 2001); *Nanopierce Techs., Inc. v. Southridge Capital Mgmt.*, No. 02 Civ. 0767, 2002 U.S. Dist. LEXIS 24049, at \*20 (S.D.N.Y. Oct. 10, 2002).

107. See *AnchorBank, FSB v. Hofer*, 649 F.3d 610, 616–17 (7th Cir. 2011); *Sharette v. Credit Suisse Int'l*, 127 F. Supp. 3d 60, 78 (S.D.N.Y. 2015); *SEC v. Malenfant*, 784 F. Supp. 141, 144 (S.D.N.Y. 1992). A private suit under § 9(a)(2) would also require proof that the relevant transactions were relied on by the plaintiff, and affected the price of plaintiff's transaction. *Chemetron Corp. v. Business Funds, Inc.*, 682 F.2d 1149, 1165 (5th Cir. 1982), *vacated on other grounds*, 460 U.S. 1007 (1983).

[T]he essence of the offense is creating ‘a false impression of supply or demand,’ for example through wash sales, where parties fictitiously trade the same shares back and forth at higher and higher prices to fool the market into thinking that there is a lot of buying interest in the stock.<sup>108</sup>

Nonetheless, a few cases have offered helpful nuggets. For instance, *In re Federal Corp.*,<sup>109</sup> involved the purchase of shares in the secondary trading market in order to drive up the price at which a new primary offering could be made. This manipulation with an external interest was successfully prosecuted under § 9(a)(2) pursuant to an action brought by the SEC’s Enforcement Division and ultimately adjudicated by the Commission. Noting that manipulative purpose must almost always be proved circumstantially, the Commission determined that “[w]here a person is taking the legal steps necessary to make a substantial offering of a given stock . . . and he then artificially stimulates the demand by taking all the stock offered in that market at a given price” thus “raising the market by more than 14 percent and making it likely that his proposed offering will net him substantially more than it would on the basis of the untampered market price,” a manipulative purpose would be found.<sup>110</sup> In fact, the Commission explicitly articulated a special case of our more general principle that an external interest creates an evidentiary presumption, noting that “it appears to us that a *prima facie* case exists when it is shown that a person who has a substantial direct pecuniary interest in the success of a proposed offering takes active steps to effect a rise in the market for outstanding securities of the same issuer.”<sup>111</sup>

Other decisions finding a violation of § 9(a)(2) have also involved external interest manipulation cases, and at least demonstrated courts’ willingness to approve prosecution of this species of manipulation under the banner of § 9(a)(2). In *Securities & Exchange Commission v. Resch-Cassin & Co.*,<sup>112</sup> manipulators drove up the price of a stock in order to ease after-market sales to other traders. The court concluded that the defendants “had an obvious incentive to artificially influence the market price of the security in order to facilitate its distribution or increase its profitability. Here the defendants used the manipulated after-market to sell the Africa stock to the public.”<sup>113</sup> The court provided an analysis of § 9(a)(2), noting that the defendants “engaged in

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108. *Sullivan & Long, Inc. v. Scattered Corp.*, 47 F.3d 857, 863 (7th Cir. 1995) (citing *Santa Fe Indus., Inc. v. Green*, 430 U.S. 462, 476 (1977)).

109. 25 SEC 227, 230 (Jan. 29, 1947).

110. *Id.* at 230.

111. *Id.*; see also *In re Wright*, 3 SEC 190, 1938 WL 34042, at \*13 (Feb. 28, 1938) (“The very existence of an option when coupled with buying on the market by those having an interest in its exercise is an indication of a purpose to raise the market price, to increase market activity and thus to distribute profitably the stock covered by the option.”).

112. 362 F. Supp. 964, 975 (S.D.N.Y. 1973). Interestingly, the finding that § 9(a)(2) was violated in this case seems to be dicta as it was conducted to show that by analogy § 10(b) must also have been violated. *Id.*

113. *Id.* at 977.

a series of transactions . . . which created actual and apparent trading in, and raised the price of, that stock for the purpose of inducing its purchase by others.”<sup>114</sup> The manipulative outcome of this conduct “was to artificially stimulate the so-called market price of the stock while making it appear to be the product of the independent forces of supply and demand when, in reality, it was completely a creature of defendants’ subterfuge.”<sup>115</sup> The later case of *Crane Co. v. Westinghouse Air Brake Co.* involved similar facts, and similarly held that the purpose of profiting from a price change pursuant to an external interest was at least a form of manipulative purpose.<sup>116</sup>

Despite these cases, however, when plaintiffs allege a manipulative scheme in violation of both § 9(a)(2) and § 10(b), courts generally gravitate toward analysis of the latter statute.

Notwithstanding these few cases, the overall historical record shows that § 9(a)(2) has played only a minimal role in the development of manipulation jurisprudence in securities law, despite the obvious relevance of its language. The principal reason is that, until 2010, § 9(a)(2) was only applicable to alleged manipulations involving *exchange* traded securities. This made it inapplicable to most open market manipulations for two reasons. First, stocks that trade on exchanges tend to be traded in large volume and be highly liquid, whereas open market manipulation is much more likely to move price significantly with more thinly traded over-the-counter stocks. So, for most of § 9(a)(2)’s history, the lower float, lower volume securities most likely to be the victim of a market manipulation were outside its reach.<sup>117</sup> Second, Nasdaq—a principal trading venue for stocks—did not even become an exchange until 2006.<sup>118</sup>

114. *Id.* at 978 (“The apparent and actual trading was achieved with advancing pink sheet quotes, inducement of other brokers to enter quotes, and actual purchases. The price rise was effected by Nagler-Weissman’s dominion and control of the market in the stock and total price leadership in both the sheets and actual purchase, as further evidenced by the virtual collapse of the market in the stock following the manipulation.”).

115. *Id.*

116. 419 F.2d 787, 795 (2d Cir. 1969) (“In furtherance of its interest in defeating the Crane tender offer and consummating its own merger with Air Brake, Standard took affirmative steps to conceal from the public its own secret sales off the market at the same time it was dominating trading in Air Brake shares at a price level calculated to deter Air Brake shareholders from tendering to Crane.”).

117. An additional reason for the predominance of § 10(b) cases is that some courts have also interpreted § 9(a)’s scienter requirement to have been more exacting than that of Rule 10b-5, where knowledge of the falsity of a material statement is sufficient. As one court put it, “[T]he ‘intent to induce’ requirement . . . is distinct from the scienter requirement of Rule 10b-5(b). While one may intend to do a fraudulent act thereby fulfilling Rule 10b-5(b)’s scienter requirement, the intent that that act induce a purchase or sale is a distinct and more specific requirement. Thus the ‘intent to induce’ requirement creates a higher burden of proof for the plaintiff . . . than that borne under Rule 10b-5(b).” *Chemtron Corp. v. Bus. Funds, Inc.*, 682 F.2d 1149, 1162 (5th Cir. 1982), *vacated*, 460 U.S. 1007, (1983); *see also* *Panfil v. ACC Corp.*, 768 F. Supp. 54, 59 (W.D.N.Y.), *aff’d*, 952 F.2d 394 (2d Cir. 1991); *Salvani v. ADVFN PLC*, 50 F. Supp. 3d 459, 477 (S.D.N.Y. 2014), *aff’d sub nom.*, *Salvani v. InvestorsHub.com, Inc.*, 628 F. App’x 784 (2d Cir. 2015). While these cases address § 9(a)(4), its “intent to induce” language is identical to that of § 9(a)(2) and these cases’ reasoning might logically extend to that section as well. *But see* *SEC v. Competitive Techs., Inc.*, No. CIV.A.3:04CV1331 (JCH), 2005 WL 1719725, at \*7 n.7 (D. Conn. July 21, 2005) (“The standard for scienter in securities fraud cases has generally been stated in relation to section 10(b) manipulation claims rather than section 9(b)

## 2. Section 10(b)

Because of this history, the jurisprudence concerning open market manipulations has centered predominantly on the circumstances, if any, under which such manipulations violate Section 10(b) of the 1934 Act. Section 10(b) prohibits any person from using in a securities transaction “any manipulative or deceptive device” in contravention of an SEC rule promulgated thereunder.<sup>119</sup> Rule 10b-5 is such a rule. It defines more specifically prohibited forms of conduct, rendering it unlawful to engage in various enumerated practices.<sup>120</sup> Although adopted without fanfare, Rule 10b-5 has become the foundation for prosecution of financial misconduct by the SEC as well as for suits by private litigants.<sup>121</sup> There is a certain awkwardness, however, when behavior is challenged as manipulation under this rule. Despite the broad language of § 10(b) itself, Rule 10b-5 reads much more as a provision focused on fraud than manipulation, a term that the language of the Rule does not even include.

Supreme Court precedent that narrowly interpreted § 10(b) in cases far removed from open market manipulation unfortunately set the stage for lower court confusion regarding what open market manipulation is and whether it is unlawful. In a series of decisions issued during the 1970s and 1980s, the Supreme Court repeatedly emphasized the role of deceit and misrepresentation in a § 10(b) claim, almost transforming § 10(b) into a statute that only caught fraud and fraud-like claims within its ambit.<sup>122</sup> This culminated in statements by the Court, such as, “Section 10(b) is aptly described as a catchall provision, but what it catches must be fraud.”<sup>123</sup> In the aftermath of this development, the

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manipulation claims; however, courts have consistently applied the same standard to both sets of claims.”); *see also* Fezzani v. Bear, Stearns, & Co., 384 F. Supp. 2d 618, 637 (S.D.N.Y. 2004), *SEC v. Schiffer*, No. 97 Civ. 5853 (RO), 1998 WL 226101, at \*3 (S.D.N.Y. 1998); *SEC v. Malenfant*, 784 F. Supp. 141, 145 (S.D.N.Y. 1992).

118. *See* NASDAQ Stock Mkt. LLC for Registration as a Nat’l Sec. Exchange; Findings, Opinions, and Order of the Common, SEC Release No. 34-53,128, 71 Fed. Reg. 3550 (Jan. 23, 2006).

119. 15 U.S.C. § 78j(b) (2012).

120. 17 C.F.R. § 240.10b-5 (2017) (“It shall be unlawful for any person . . . (a) To employ any device, scheme, or artifice to defraud, (b) To make any untrue statement of a material fact or [omission] . . . , or (c) To engage in any act, practice, or course of business which operates or would operate as a fraud or deceit upon any person, in connection with the purchase or sale of any security.”).

121. *See* *Blue Chip Stamps v. Manor Drug Stores*, 421 U.S. 723, 767 (1975) (Blackmun, J., dissenting) (citing Remarks of Milton Freeman, *Conference on Codification of the Federal Securities Laws*, 22 BUS. LAW. 793, 922 (1967)).

122. *See, e.g.,* *Schreiber v. Burlington N., Inc.*, 472 U.S. 1, 8 n.6 (1985) (“Congress used the phrase ‘manipulative or deceptive’ in § 10(b) and we have interpreted ‘manipulative’ in that context to require misrepresentation.” (citations omitted)); *Santa Fe Indus., Inc. v. Green*, 430 U.S. 462, 476 (1977) (manipulation “refers generally to practices, such as wash sales, matched orders, or rigged prices, that are intended to mislead investors by artificially affecting market activity” (citations omitted)); *Ernst & Ernst v. Hochfelder*, 425 U.S. 185, 199 (1976) (“[T]he word ‘manipulative’ . . . is and was virtually a term of art when used in connection with securities markets. It connotes intentional or willful conduct designed to deceive or defraud investors by controlling or artificially affecting the price of securities.” (citations omitted)).

123. *Chiarella v. United States*, 445 U.S. 222, 234-35 (1980).

lower federal courts were uncertain as to whether it was even possible that any open market trading behavior (whether naked or involving an external interest) could even by itself constitute illegal manipulation.

The lingering effect of these Supreme Court precedents is a sharp circuit split regarding whether open market manipulation, without an additional act that is unlawful by itself, is ever prohibited under Section 10(b). Both sides in this split agree on the black letter statement of the general elements of a private damages manipulation claim under Rule 10b-5: “(1) manipulative acts; (2) damages (3) caused by reliance on an assumption of an efficient market free of manipulation; (4) scienter; (5) in connection with the purchase or sale of securities; (6) furthered by the defendant’s use of the mails or any facility of a national securities exchange.”<sup>124</sup> The key question is what constitutes a “manipulative act.” On one side are a series of court opinions that have been read to assert that actual trading behavior *on its own* cannot constitute a manipulation; some additional unlawful act is necessary as well. In essence, this would mean that open market manipulation per se is not illegal under Rule 10b-5. Other circuits have come to the opposite conclusion, at least under certain circumstances.

The Third Circuit is the one that has been read as in the first group. In *GFL Advantage Fund, Ltd. v. Colkitt*,<sup>125</sup> it stated that, “[r]egardless of whether market manipulation is achieved through deceptive trading activities or deceptive statements as to the issuing corporation’s value, it is clear that the essential element of the claim is that *inaccurate* information is being injected into the marketplace.”<sup>126</sup> The facts of the case make clear that trading for the sole purpose of moving a securities price was not enough to be considered an injection of inaccurate information into the market place. Hence such trading would not, by itself be considered manipulation. Hence the defendant was not found to violate Rule 10b-5. What was being plausibly alleged in this case was open market manipulation with an external interest. The defendant was alleged to have depressed the price of the issuer’s stock in order to profit from a prior arrangement in which plaintiff agreed defendant could convert debt into equity at a discounted version of the average market price.<sup>127</sup> According to the Third Circuit, because the trading behavior was itself lawful, it could not be

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124. *Louisiana Pac. Corp. v. Merrill Lynch & Co.*, 571 F. App’x 8, 10 (2d Cir. 2014) (citing *ATSI Commc’ns, Inc. v. Shaar Fund, Ltd.*, 493 F.3d 87, 101 (2d Cir. 2007)). In the case of a government action for manipulation under Rule 10b-5, there would presumably be no need for a showing of two of these elements—damages and reliance—just as there is no need for showing these elements in a government action for a materially false or misleading statement under Rule 10b-5(b). See *SEC v. Kelly*, 765 F. Supp. 2d 301, 319 (S.D.N.Y. 2011) (“[U]nlike a private plaintiff, the SEC need not allege or prove reliance, causation, or damages in an action under Section 10(b) or Rule 10b-5.”).

125. 272 F.3d 189 (3d Cir. 2001).

126. *Id.* at 205 (citing *In re Olympia Brewing Co. Sec. Litig.*, 613 F. Supp. 1286, 1292 (N.D. Ill. 1985)).

127. *Id.*

considered as creating inaccurate information and therefore was not deceptive trading behavior.<sup>128</sup>

Until as recently as 2015, commentators could have plausibly placed the Second Circuit on the same side of this split as the Third Circuit. In *United States v. Mulheren*,<sup>129</sup> the Second Circuit in 1991 overturned the defendant's jury conviction regarding manipulative activity in an opinion expressing highly skeptical dicta on the question. While the specific grounds for the reversal was a determination that there was insufficient evidence that Mulheren was acting on Boesky's behalf, the Second Circuit stated as well that, "although we have misgivings about the government's view of the law, we will assume, without deciding on this appeal, that an investor may lawfully be convicted under Rule 10b-5 where the purpose of his transaction is solely to affect the price of a security."<sup>130</sup> It further noted that "[n]one of the traditional badges of manipulation are present in this case. Mulheren conspicuously purchased the shares for [a registered broker-dealer's] account in the open market."<sup>131</sup>

Still, more recent decisions suggest another view. To start, in the early 2000s, a district court noted that "[t]he law of the Second Circuit on so-called open market manipulation—where the alleged manipulator has made otherwise legitimate trades, yet with the subjective intent to affect the stock price thereby—is not yet fully settled."<sup>132</sup> More importantly, in 2015, however, the Second Circuit, in *Fezzani v. Bear, Stearns & Co. Inc.*, clarified its view to the extent of saying in dictum that manipulation under § 10(b) does *not* require "reliance by a victim on direct oral or written communications by a defendant."<sup>133</sup> A manipulation can stem from "'market activity' intended to

128. The Seventh Circuit appears to have joined the Third Circuit as part of this first group. In *Foss v. Bear, Stearns & Co.*, the Seventh Circuit, in reply to a plaintiff who wanted to "call the [alleged] conduct 'manipulation' rather than 'fraud,'" stated that "this is a distinction without a difference" because in "securities law, manipulation is a *kind* of fraud; deceit remains essential." 394 F.3d 540, 542 (7th Cir. 2005). It should be noted, however, that this is dicta because the case with facts significantly different than the kinds of open market manipulation being explored here.

129. 938 F.2d 364 (2d Cir. 1991).

130. *Id.* at 368.

131. *Id.* at 370-71.

132. *Nanopierce Techs., Inc. v. Southridge Capital Mgmt.*, No. 02 Civ. 0767, 2002 U.S. Dist. LEXIS 24049, at \*6 (S.D.N.Y. Oct. 10, 2002). Other district courts in the Second Circuit went even further. See *Sharette v. Credit Suisse Int'l*, 127 F. Supp. 3d 60, 82 (S.D.N.Y. 2015) ("[O]ther courts in this district have found that open market transactions that are not, in and of themselves, manipulative or illegal, may constitute manipulative activity within the meaning of Section 10(b) when coupled with manipulative intent."); see also *ATSI Commc'ns, Inc. v. Shaar Fund, Ltd.*, 493 F.3d 87, 102 (2d Cir. 2007) ("[I]n some cases scienter is the only factor that distinguishes legitimate trading from improper manipulation."); *SEC v. Masri*, 523 F. Supp. 2d 361, 372 (S.D.N.Y. 2007) ("The Court concludes . . . that if an investor conducts an open market transaction with the intent of artificially affecting the price of the security, and not for any legitimate economic reason, it can constitute market manipulation.").

133. See *Fezzani v. Bear, Stearns & Co. Inc.*, 777 F.3d 566, 571 (2d Cir. 2015). The case involved a broker-dealer that was accused of prompting its customers to purchase certain stocks and then later maintaining the price of these stocks by buying shares in the secondary market, presumably to increase its clients' appetites for its next round of recommendations. The case involves a defendant, who, rather than being the broker-dealer itself, was someone accused of allowing the broker-

mislead investors by sending ‘a false pricing signal to the market,’ upon which victims of the manipulation rely.”<sup>134</sup> The *Fezzani* decision built on the Second Circuit’s more thorough discussion in *ATSI Communications, Inc. v. Shaar Fund, Ltd.*,<sup>135</sup> where it stated that manipulation “refers generally to practices, such as wash sales, matched orders, or rigged prices, that are intended to mislead investors by artificially affecting market activity.”<sup>136</sup>

The Second Circuit’s analysis in *Fezzani* went further:

[M]anipulation “connotes intentional or willful conduct designed to deceive or defraud investors by controlling or artificially affecting the price of securities.” The critical question then becomes what activity “artificially” affects a security’s price in a deceptive manner . . . . [C]ase law in this circuit and elsewhere has required a showing that an alleged manipulator engaged in *market activity* aimed at deceiving investors as to how other market participants have valued a security.<sup>137</sup>

The D.C. Circuit is on the same side of the split.<sup>138</sup> In *Markowski v. SEC*,<sup>139</sup> a case with facts somewhat analogous to what we have termed a

dealer to “park” these shares in his account (i.e., allowing the broker-dealer to sell him the shares it had purchased but with an understanding that he would be protected against any drop in price). The language quoted in the text is dictum because the court dismissed the complaint against the defendant. According to the court, the plaintiff failed “to allege acts by [the defendant] that amounted to more than knowingly participating in, or facilitating” the broker-dealer’s fraud. *Id.* at 625. To be liable in a private damages action, the court concluded, the defendant would have needed himself to make the false communication. *Id.*

134. *Id.* at 571-72 (citations omitted).

135. 493 F.3d 87 (2d Cir. 2007).

136. *Id.* at 99-100. The court went on to say that “[a] market manipulation claim . . . cannot be based solely upon misrepresentations or omissions. There must be some market activity, such as ‘wash sales, matched orders, or rigged prices.’” *Id.* at 101 (citation omitted). The Second Circuit upheld the district court’s grant of the defendant’s motion to dismiss the complaint for different reasons, however. The type of security involved was a note convertible into common stock at a ratio determined by the share price at the time of conversion, very much like the security in *GFL*. Unlike the plaintiff in *GFL*, however, the plaintiff in *ATSI* did not effectively plead facts showing that the defendant actually shorted the shares right before conversion.

137. *Id.* at 100-01 (citations omitted) (emphasis added); see also *Gurary v. Winehouse*, 190 F.3d 37, 45 (2d Cir. 1999); *Mobil Corp. v. Marathon Oil Co.*, 669 F.2d 366, 374 (6th Cir. 1981); cf. *Pagel, Inc. v. SEC*, 803 F.2d 942, 946 (8th Cir. 1986); *Crane Co. v. Westinghouse Air Brake Co.*, 419 F.2d 787, 796 (2d Cir. 1969).

138. The SEC also joins the Second and D.C. Circuits in recognizing trades done with a manipulative intent, without any further unlawful act, as potentially unlawful manipulation. In an administrative proceeding against Terrance Yoshikawa, the SEC embraced an expansive, if vague, interpretation of § 10(b), which would encompass open market manipulation. See *In re Application of Terrance Yoshikawa for Review of Disciplinary Action Taken by NASD*, Release No. 53,731 (Apr. 26, 2006). The SEC took the position that manipulation is “‘intentional interference with the free forces of supply and demand,’” *id.* at 8, while the specific allegations against Yoshikawa were that he had “‘engaged in a manipulative scheme by artificially moving the NBBO in the specified securities and thereby fraudulently affected the nature of the market for these securities.” *Id.* at 11. In this case, the defendant repeatedly had placed a small limit order in one direction that reset the NBO or NBB and then placed a much larger order in the opposite direction that he had good reason to believe would be executed in a venue that used the NBO and NBB as reference prices even when the order it received was larger than the amount available in the market at the NBO or NBB. So the practice involved had a close analogy to an open market transaction with an external interest.



market manipulation with an external interest, the D.C. Circuit interpreted Section 10(b) to have proscribed manipulations involving trades based “solely because of the actor’s purpose” when that purpose was improper, without necessitating any further unlawful act.<sup>140</sup>

This circuit split has not gone without notice. In 2016, the D.C. Circuit reiterated its position that trading alone could give rise to liability for manipulation.<sup>141</sup> In response, the accused manipulator petitioned the Supreme Court, seeking review.<sup>142</sup> Noting the circuit split, the defendants filed a petition for a writ of certiorari with the Supreme Court, which noted—correctly—that the current split among the federal circuits creates significant confusion for market participants and disparities of outcome for those accused. The Court, however, denied the petition and so the confusion will continue for now.

### *B. Assessing the Law on Open Market Manipulation*

As developed in Parts IV and V above, naked open market manipulation and open market manipulation with an external interest are each strategies that can move market prices. Moreover, each can yield expected profits under given circumstances, and each is socially undesirable. For each of these two kinds of manipulation, we have identified objectively observable factors that can serve as a condition for imposing legal sanctions on undesirable trades, while minimizing prosecution of socially desirable trades. This analysis also shows how rules against the two practices based on these objectively observable factors fit within the prohibitory scope allowed by the language of Sections 9 and 10(b).

Against this background and the review of the case law above, we can now evaluate what the courts have done to date in interpreting these provisions and what they should do in the future.<sup>143</sup> First, the reluctance of many courts to even recognize the existence of open market manipulation and its potential unlawfulness under Section 10(b) is unjustifiable. In this connection, the Supreme Court should resolve the circuit split in favor of the Second and D.C.

139. 274 F.3d 525, 528 (D.C. Cir. 2001).

140. *Id.* at 529. The case involved a broker-dealer that acted as an underwriter for an IPO of the shares of a small issuer, Mountaintop. The broker-dealer sold a large portion of the offering to its own customers. *Id.* at 530. Then, for seven months, the broker-dealer “(1) maintained high bid prices for Mountaintop securities, and (2) absorbed all unwanted securities into inventory,” *id.* at 527, until this unsustainable effort forced the broker-dealer to close. At this point, Mountaintop’s share price dropped by seventy-five percent in one day. The DC Circuit noted that “[t]he activity in Mountaintop furthered an *external purpose*. At least in the short term, the [broker-dealer] supported Mountaintop’s price not to profit from later sales of Mountaintop, but to maintain customer interest in Global generally and to sustain confidence in its other securities.” *Id.* at 529 (emphasis added).

141. *See, e.g., Koch v. SEC*, 793 F.3d 147, 151 (D.C. Cir. 2015), *cert. denied*, 136 S. Ct. 1492 (2016).

142. Petition for Writ of Certiorari, *Koch*, 136 S. Ct. 1492 (No. 15-781, 3/28/16.)

143. In making these observations, we are not weighing in on the difficult question of what kind of higher showing, if any, should be required for violations of the rule to be considered criminal as opposed to some kind of SEC-enforced or private civil sanction.

Circuits. Second, even courts that do recognize the existence and potential unlawfulness of open market manipulation seem at a loss in formulating coherent, consistent rules that make policy sense. We suggest that they move toward the four-question approach we have proposed here. Specifically, at a concrete level, where there is a lack of documentary evidence that the sole purpose of a trade was to move price, courts should look for evidence of one of two phenomena beyond profitable buying and selling: 1) superficially unprofitable trading designed to generate information about the likelihood of an asymmetric price response (what we have referred to as a more general idea of “exploratory trading”); or 2) an external transaction that renders critically-timed, facially unprofitable trading behavior profitable in expectation.

In fact, our analysis leads us to an additional conclusion regarding the case law’s best path toward optimal deterrence of manipulative trading. Because of the pre-2010 limitations on § 9(a)(2)’s reach discussed above—particularly, its applicability solely to exchange-listed securities—the common law jurisprudence of securities manipulation has overwhelmingly developed around Rule 10b-5. While the ambit of § 9(a)(2) is now wide, path dependency seems to have resulted in § 10(b), rather than § 9(a)(2), continuing to be the regulators’ and private litigants’ statute of choice. They may be making a mistake. Section 9(a)(2) can now be more actively deployed, and offers the conspicuous advantage of being free from the confused Rule 10b-5 case law suggesting “deceit” is a necessary feature of manipulation. Our approach is well suited as a guide to the development of a new § 9(a)(2) case law.

### *C. Misstatement Manipulation*

Unlike the two kinds of open market manipulation, there has long been a basis in court-made law for imposing sanctions on traders engaging in misstatement manipulation. Rule 10b-5(b) makes it unlawful for any person “to make any untrue statement of a material fact or to omit to state any material fact necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading . . . in connection with the purchase or sale of a security.”<sup>144</sup> As far back as 1968, the Second Circuit ruled in *SEC v Texas Gulf Sulphur* that whenever an issuer makes a statement that is “reasonably calculated to influence the investing public,” such a statement satisfies Rule 10b-5’s requirement that it be “in connection with the purchase or sale of a security,” even if neither the issuer nor its managers buy or sell shares themselves.<sup>145</sup> This interpretation of the “in connection with” requirement rule has subsequently been expanded to reach other persons besides the issuer and its officials, and to include the statements of these other persons when they would predictably affect investors’ judgments. Moreover,

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144. 17 C.F.R. § 240.10b-5 (2017).

145. *SEC v. Tex. Gulf Sulphur*, 401 F.2d 833, 859-61 (2d Cir. 1968)

the courts have made clear that in government-based actions, there need not be a showing of reliance by the particular purchasers or sellers of shares. Indeed, one might reasonably argue that there is no reason to call “misstatement manipulation” manipulation at all; it is just fraud. Still, this evolution extends the reach of Rule 10b-5(b) far beyond that of common-law fraud, which contemplates a one-on-one transaction with reliance on the misstatement by the counterparty. The application of Rule 10b-5(b) to misstatement manipulation goes to the distortive effect of the misstatement on overall market pricing.

Given this background, for our purposes, it matters little whether what we label misstatement manipulation is considered manipulation or simply a fraud outlawed by the terms of Rule 10(b)(5). Courts, however, do struggle to distinguish between what they consider to be just fraud and what they consider to be a manipulation that involves a misstatement. They have generally held that manipulations involving misrepresentations require something more than mere misrepresentations. As the Second Circuit has put it, a manipulation claim under Rule 10b-5, even when it involves misrepresentations, also requires “manipulative acts.”<sup>146</sup> These acts must “create a false impression of how market participants value a security.”<sup>147</sup> “[A]llegations of misrepresentations or omissions alone cannot support a claim of market manipulation.”<sup>148</sup>

This nebulous distinction between fraud and manipulation involving a misstatement matters for reasons that are not at the center of our concerns in this Article. It nevertheless is not just semantics. Federal Rule of Civil Procedure Rule 9(b) adds a special obstacle to bringing any fraud suit by requiring the complaint to plead fraud with specificity. The Private Securities Litigation Reform Act (“PSLRA”), enacted by Congress in 1995, imposes significant additional pleading requirements on some securities claims, but these arguably do not stand in the way of private claims based on misstatement manipulation.<sup>149</sup> If they do not, the litigation advantages of manipulation claims over those in fraud may become highly consequential. The PSLRA responded to the perception that securities fraud class actions had become the centerpiece of significant abuse of the civil legal system with private plaintiffs bringing “strike suits” that extracted costly settlements from public corporations to dispose of meritless claims.<sup>150</sup> To counteract these perceived abuses, the

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146. ATSI Commc’ns, Inc. v. Shaar Fund, Ltd., 493 F.3d 87 (2d Cir. 2007).

147. *Id.*

148. Sharette v. Credit Suisse Int’l, 127 F. Supp. 3d 60, 77 (S.D.N.Y. 2015).

149. See Damian Moos, *Pleading Around the Private Securities Litigation Reform Act: Reevaluating the Pleading Requirements for Market Manipulation Claims*, 78 S. CAL. L. REV. 763, 764 (2005).

150. See S. REP. NO. 104-98, at 4 (1995), as reprinted in 1995 U.S.C.C.A.N. 679, 683; Richard M. Phillips & Gilbert C. Miller, *The Private Securities Litigation Reform Act of 1995: Rebalancing Litigation Risks and Rewards for Class Action Plaintiffs, Defendants and Lawyers*, 51 BUS. LAW. 1009 (1996).

PSLRA created heightened pleading requirements for private claims covered by the statute.<sup>151</sup>

The provisions of the PSLRA require a stricter standard of pleading than is required for an ordinary fraud claim, and apply to all private damages actions under the Exchange Act that require a showing of the defendant's state of mind. Some courts have questioned whether this applies to the kind of intent involved in manipulation-based claims and have ruled that manipulation claims are subject to lower pleading requirements than misrepresentation claims.<sup>152</sup> This makes sense in the case of what we describe as a misstatement manipulation because such a manipulation combines a misstatement with a purchase and sale. It makes no real sense in the case of the typical fraud-on-the-market Rule 10b-5 suit, which was what primarily prompted the PSLRA, where there is no requirement that the issuer or any other defendant engaged in any transactions at all. If claim involving a misrepresentation but no transaction was allowed to be characterized as a manipulation claim, parties would be able to simply do an end-run around the PSLRA heighten pleading standards. Nothing in our analysis suggests that there is a good reason for allowing such an end-run treatment.<sup>153</sup>

### Conclusion

Preventing the manipulation of securities has long preoccupied the popular and political imaginations. Yet, much of the scholarly literature has remained suspicious of manipulation as a coherent and useful concept. This

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151. The PSLRA requires that in any action “the complaint . . . state with particularity facts giving rise to a strong inference that the defendant acted with the required state of mind with respect to each alleged act or omission.” 15 U.S.C. § 78u-4(b)(2) (2012). In a famous misstatement case, the Supreme Court ruled that this requirement means the plaintiff must allege facts, which give rise to “an inference of scienter [that] must be more than merely plausible or reasonable—it must be cogent and at least as compelling as any opposing inference of nonfraudulent intent.” *Tellabs Inc. v. Makor Issues & Rights Ltd.*, 551 U.S. 308, 314 (2007).

152. *ATSI Commc'ns, Inc. v. Shaar Fund, Ltd.*, 493 F.3d 87, 102 (2d Cir. 2007) (holding that a “plaintiff need not plead manipulation with the same degree of specificity as a plain misrepresentation claim”). As another court put it, “[W]here the principal allegations of wrongdoing involve market manipulation rather than false statements, the Complaint sets forth a sufficient level of detail by alleging the nature, purpose, and effect of the fraudulent conduct and the roles of the defendants.” *In re Blech Sec. Litig.*, 928 F. Supp. 1279, 1290-91 (S.D.N.Y. 1996); *see also* *Baxter v. A.R. Baron*, No. 94 Civ. 3913, 1996 WL 586338, at \*8 (S.D.N.Y. Oct. 11, 1996) (“The degree of particularity required for pleading a market manipulation scheme is not as demanding as it is when Rule 9(b) is applied in other instances of fraud because the facts relating to a manipulation scheme are often known only by the defendants.”); *In re Initial Pub. Offering Sec. Litig.*, 241 F. Supp. 2d 281, 386 (S.D.N.Y. 2003).

153. Courts seem to have shown a careful awareness of this possibility. As a result, manipulation claims centered on misrepresentations are generally viewed as subject to the PSLRA's heightened requirements. For instance, in *Lentell v. Merrill Lynch & Co.*, 396 F.3d 161 (2d Cir. 2005), the Second Circuit held that while the plaintiffs sought to cast their claims in terms of market manipulation under Rule 10b-5, “where the sole basis for such claims is alleged misrepresentations or omissions, plaintiffs . . . remain subject to the heightened pleading requirements of the PSLRA.” *Id.* at 177-78; *see also* *Schnell v. Conseco, Inc.*, 43 F. Supp. 2d 438, 447-48 (S.D.N.Y. 1999).

Article synthesized various existing forms of manipulation, attempted to identify who was harmed by each from the perspective of microstructure economics, and assessed the economic welfare effects of these harms. It then turned to the legal landscape, which shares with the academic literature the confusion surrounding manipulation. The federal courts disagree among themselves about some of manipulation law's most basic questions. Through our four-question test, we attempted to offer a resolution to those questions and provide an approach that is both theoretically satisfactory and practically operational. It should thus offer counsel to both governmental enforcement agents and defense lawyers alike by developing a more precise approach to the evidentiary burdens regulators should impose in optimally prosecuting manipulation, while avoiding the deterrence of desirable trades.