Event-Driven Suits and the Rethinking of Securities Litigation

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Event-driven securities suits—ones that arise after an issuer has experienced some kind of disaster—have become increasingly prevalent in recent years. These suits are based on the fraud-on-the-market doctrine, a doctrine that ultimately gives rise to the bulk of the damages paid out in settlements and judgments pursuant to private litigation under the U.S. securities laws. The theory behind fraud-on-the-market cases is that when an issuer's share price has been inflated by a Rule-10b-5-violating misstatement, investors who purchased shares at the inflated price have suffered a compensable injury if they still hold the shares after the inflation is gone. Although these event-driven suits differ in important ways from their more traditional cousins based on the same doctrine, they constitute a kind of stress test for the overall doctrine. The growth of event-driven cases thus provides a unique opportunity to reconceptualize the overall system of adjudicating fraud-on-the-market suits more generally.

In this Article, we identify the basic logic behind this cause of action and consider what that logic implies as to when liability should and should not be imposed from a social welfare perspective. The result suggests ways we can both solve the challenges posed by event-driven litigation and improve fraud-on-the-market jurisprudence more generally.

In an event-driven case, the plaintiff points to a pre-disaster statement that allegedly underplayed the likelihood that the disaster would occur and argues that the disaster announcement was the corrective disclosure. But in these cases, the price drop on the day of the disaster announcement is almost never a reasonable measure of the misstatement's share price inflation. By focusing on the price drop at the time of a corrective disclosure, as courts generally do in fraud-on-the-market suits, they have lost track of the real issue: whether the misstatement inflated the share price by a meaningful amount in the first place. More often, the answer to that question is better indicated by the price change back at the time of the misstatement.

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For all fraud-on-the-market suits where the plaintiff can establish a misstatement made with scienter, we argue that liability should be imposed where the misstatement's price impact appears to be at least as great as an inflation threshold chosen to trade off the costs and benefits of adjudicating securities class actions. Liability should not *be imposed where both the misstatement's price impact appears to be smaller than this inflation threshold, and the market would not have drawn negative inferences had the issuer stayed silent instead of making the misstatement. Where the misstatement's price impact is less than the inflation threshold, but the market would have drawn negative inferences from issuer silence, liability should be imposed if and only if both the corrective disclosure's price impact is a reliable proxy for how much the misstatement inflated the share price and this impact appears to be at least as great as the inflation threshold.*

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I. Introduction

When disaster befalls a publicly traded company, two consequences often follow: first, its stock price falls sharply; and second, a plaintiff's law firm files a securities class action alleging that the company previously deceived shareholders by concealing a risk that led to the disaster. Wildfires? The firm misled shareholders as to its risky environmental practices. Airplane crash? Shareholders were lied to as to navigation system risk. A major government investigation or action? The issuer erroneously understated the likelihood of employee malfeasance. If this sounds broad, it is. One commentator has coined the phrase "*everything is securities fraud*."[1] We use the term "event-driven" securities litigation, a common term for this particular kind of securities class action.[2]

Event-driven securities class actions are based on the fraud-on-the-market theory of liability, just like their more traditional cousins, which arise from events with more certain implications for future prices such as erroneous financials. This cause of action gives secondary-market share purchasers the right to recover from the issuer losses incurred from paying a price inflated by a misstatement made in violation of Rule 10b-5 of the U.S. Securities & Exchange Commission (SEC). It allows them to do so even if the purchasers cannot prove that they each relied upon (or even knew about) the misstatement and even if neither the issuer nor its insiders were sellers during the period that the misstatement inflated the issuer's share price.[3]

Event-driven class actions pose many challenges to the way fraud-on-the-market actions have traditionally been adjudicated. When what has appeared to be a tolerably workable system comes under a new stress, that often provides

1. Matt Levine, *Everything Everywhere Is Securities Fraud*, Bloomberg News (June 26, 2019), https://www.bloomberg.com/opinion/articles/2019-06-26/everything-everywhere-is-securities-fraud. For a systematic treatment of the broadening scope of securities fraud claims, see Emily Strauss, *Is Everything Securities Fraud?*, 12 U.C. Irvine L. Rev. (forthcoming 2022) (finding that "roughly 16.5% of securities class actions arise from conduct where the most direct victims are not shareholders" and "these cases have roughly a 20% lower likelihood of being dismissed, and settle for significantly higher amounts").

2. John C. Coffee, Jr., *Event-Driven Securities Litigation: Its Rise and Partial Fall*, NYLJ (Mar. 20, 2019), https://www.law.com/newyorklawjournal/2019/03/20/event-driven-securities-litigation-its-rise-and-partial-fall/?slreturn=20190919193203. We recognize that all securities litigation is "event-driven" to some extent, but the type of cases we have in mind concern under-disclosed risks that impact future performance rather than misstatements concerning historical financial results.

3. *See* Basic Inc. v. Levinson, 485 U.S. 224, 241–42, 250 (1988). The fraud-on-the-market theory is discussed in more detail in *infra* Part II.

the opportunity for a rethinking of the overall system. This rethinking leads to improvements in the functioning of the system in general, not just to a solution for the particular stresses that prompted it. We believe that the rise of event-driven cases provides just such a moment for a rethinking of the overall system of adjudicating fraud-on-the-market suits. In this Article, we reconceptualize this overall system, identifying the basic logic behind the cause of action and considering what that logic implies as to when liability should and should not be imposed from a social welfare perspective.

In the traditional fraud-on-the-market action based on, for example, erroneous financials, courts tend to focus on the share price drop at the time that the truth becomes public. The sometimes-correct logic of doing so is that this drop, when adjusted for changes in the overall market prices that day, is a reasonable measure of how much the misstatement had previously inflated the price. Thus, the persons losing because of this misstatement are those who purchased the shares while the price was still inflated by the misstatement and who still hold them at the time of the "corrective disclosure." They paid too much due to the misstatement and will not be able to recover this overpayment whenever they ultimately sell. In contrast, for an event-driven suit, this price drop is almost never a reasonable measure of the misstatement's share price inflation. In such a suit, the plaintiff points to some earlier issuer statement that she claims suggested the likelihood of this disaster to be less than it really was and points to the disaster announcement as the corrective disclosure. Much or all of this price drop is due to a materialization of a risk, not a dissipation of any inflation in price due to the market's underestimation of the risk, and as such would have occurred whether or not the issuer had made the misstatement.

Reconceptualizing the fraud-on-the-market action in the way we will do here is an important task. These actions give rise to the bulk of the damages paid out in settlements and judgments pursuant to private litigation under the U.S. securities laws[4] and, accordingly, absorb large amounts of legal talent assisting each side. Thus, how well these suits are adjudicated significantly affects both the proper functioning of our legal system and the overall performance of our capital markets and the economy more generally.

We make four basic points of application to *all* fraud-on-the-market cases:

> ***First***, by focusing on the price drop at the time of a corrective disclosure, courts have lost track of the critical point that the real issue is whether the misstatement inflated the share price by a meaningful amount in the first place.
>
> ***Second,*** the logic of the fraud-on-the-market cause of action requires that the appropriate counterfactual for determining the extent to which the misstatement inflated price is what the price would have been if the issuer had

4. *See* Merritt B. Fox, *Securities Class Actions Against Foreign Issuers*, 64 Stan. L. Rev. 1173, 1176 (2012).

instead stayed silent, not what it would have been if the issuer had affirmatively told the truth.[5]

Third, the misstatement's and corrective disclosure's price impact are alternative proxies for estimating the degree of share-price inflation. Between these, the misstatement's price impact is the generally more accurate. When, however, there is reason to think that the market would draw negative inferences from an issuer remaining silent instead of making the misstatement, the corrective disclosure's price impact is sometimes more accurate.

Fourth, even where there is reason to think that the market would draw negative inferences from an issuer remaining silent, the share-price decline accompanying a corrective disclosure, though sometimes useful, is inherently vulnerable to problems as a proxy for share-price inflation. Such problems almost always will render the corrective disclosure's price impact an unreliable proxy in event-driven cases.

Where neither proxy is reliable, there is often no way of measuring whether the misstatement significantly inflated price and so no basis for awarding private damages. Thus, our third and fourth observations have far-reaching implications for the practice of securities class actions in light of the current near-ubiquitous use of price drops accompanying corrective disclosures as the measure of loss causation and damages.

Many event-driven litigations are premised on plausible claims that the issuer made some kind of misstatement and we are not suggesting this is not a matter of concern. In many such cases, some kind of legal response is called for. But civil damages litigation is not the only kind of legal response, and such litigation is costly, class actions especially so. There are strong social welfare considerations that counsel in favor of a principled, systematic approach to delineating the scope as to which misstatements generate fraud-on-the-market liability. Other misstatements are better left to SEC enforcement action or criminal prosecution, where prosecutorial discretion, rather than entrepreneurial lawyering, picks which cases to pursue.[6] Fraud-on-the-market suits based on misstatements that substantially inflate share price are arguably both socially useful and an

5. The situation is more complicated where, at the time of the misstatement, the issuer is under an affirmative legal duty to disclose what would have been the truth, for example pursuant to the Exchange Act's mandatory disclosure provisions. There, whether the proper counterfactual is the issuer remaining silent or affirmatively telling the truth is less clear, both from a legal and social welfare point of view. This issue is discussed in *infra* Part III.B.6.

6. *See* Merritt B. Fox, *Why Civil Liability for Disclosure Violations When Issuers Do Not Trade*, 2009 Wis. L. Rev. 299 (discussing why, with securities-related misstatements, a governmental regulatory system backed by public enforcement can be usefully supplemented by a private damages regime, something that is the exception rather than the rule when looking across governmental regulation of the full range of human activities). To the extent that the recommendations in this Article lead to a reduction in private damages litigation in response to such misstatements, it would be important that the enforcement arms of the SEC and the U.S. Department of Justice (DOJ) receive additional funding to help deter misstatements in situations no longer generating such private suits.

appropriate province of entrepreneurial lawyers. In contrast, ones where share price is not inflated substantially but that nevertheless lead to large settlements or damages judgments often simply result in high-transaction-cost wealth transfers with little to justify them.

We propose three simple rules of adjudicatory design for all cases where the plaintiff can establish a misstatement made with scienter:

> ***Rule 1:*** Liability should be imposed in cases where the misstatement's price impact appears to be at least as great as an inflation threshold chosen to trade off the costs and benefits of adjudicating securities class actions.
>
> ***Rule 2:*** Liability should not be imposed in cases where (i) the misstatement's price impact appears to be smaller than this inflation threshold, and (ii) the market would not have drawn negative inferences had the issuer instead stayed silent.
>
> ***Rule 3:*** Where (i) the misstatement's price impact is less than the inflation threshold, but (ii) the market would have drawn negative inferences from issuer silence, liability should be imposed if and only if the corrective disclosure's price impact is a reliable proxy for how much the misstatement inflated price and appears to be at least as great as the inflation threshold.

One conclusion from applying these three simple rules is that event-driven suits generally should not survive a motion to dismiss unless the plaintiff alleges facts providing plausible grounds to infer that the plaintiff will be able to introduce at trial a convincing event study showing a statistically significant price increase at the time of the alleged misstatement. Another is that many cases are allowed to proceed past the motion-to-dismiss stage based on the "price maintenance" theory—i.e., that the misstatement prevented the price from falling—where there is little reason to think that such is the case. As a more general matter, we think that the application of these three simple rules to a consideration of what constitutes a properly pled fraud-on-the-market complaint will lead to the dismissal of far more suits at the relatively inexpensive motion-to-dismiss stage than happens now. This can occur without at the same time significantly blocking merited actions from proceeding.

Part II of this Article briefly explores the origins of the fraud-on-the-market cause of action and how it works doctrinally. Part III presents our "stripped-down model" of the cause of action that abstracts out doctrinal terms in order to see what is going on economically and then uses this model to explore the social benefits and costs of such suits and how to discriminate between which such suits on net are socially useful and which socially harmful. Part IV uses this analytic frame to explore how to design the optimal adjudicatory process for determining whether a misstatement inflated price sufficiently to justify imposition of liability. Part V takes what has been learned so far and applies it to the special problem of event-driven suits. Part VI returns to doctrine and uses our approach to critique existing judicial practice, particularly with regard to the treatment of materiality and loss causation in motions to dismiss and to determining the absence of price impact in class certification proceedings. Part VII concludes.

II. The Doctrinal History of the Fraud-on-the-Market Cause of Action

In order to assess what to do about event-driven suits and to engage in a more general reevaluation of fraud-on-the-market jurisprudence, it is essential to first understand the origins of the fraud-on-the-market cause of action and how it works doctrinally. This doctrinal discussion lays the groundwork for the social welfare analysis of the cause of action in Part III and, in turn, the discussion in Part IV of how ideally we should structure the process by which fraud-on-the-market claims are adjudicated.

A. The Nature of the Fraud-on-the-Market Action

The principal target of the typical fraud-on-the-market class action is an issuer whose shares trade publicly in an efficient secondary market and that is alleged to have made a misstatement in violation of section 10(b) of the Securities and Exchange Act of 1934 (the "Exchange Act") and Rule 10b-5 promulgated thereunder.[7] A misstatement by an issuer can be a violation even if neither the issuer nor any of its officials traded in the issuer's shares.[8] This violation of a public law can give rise to a private damage action based on a judicially developed implied right of action, the theory being that the public law violation is a tort against certain persons damaged by the violation.[9] More specifically, the fraud-on-the-market action allows buyers of the issuer's shares to recover losses that they incurred from paying a price inflated by the misstatement, and it does not require proof that each buyer individually actually relied upon (or even was aware of) the misstatement.[10] Thus, the typical class consists of all persons who suffered losses as a result of purchasing an issuer's shares during the period in which an issuer's share price was inflated in this way.

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7. A fraud-on-the-market action is a form of an implied right of action for civil damages based on a misstatement made in violation of Securities Exchange Act of 1934 § 10(b), 15 U.S.C. § 78j(b) (2018), and Rule 10b-5 promulgated thereunder. Rule 10b-5 provides in relevant part that "[i]t shall be unlawful for any person, directly or indirectly, . . . [t]o make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading . . . in connection with the purchase or sale of any security." 17 C.F.R. § 250.10b-5 (2022).

8. Any statement that is "reasonably calculated to influence the investing public," for example one made by a publicly traded issuer to the media, satisfies Rule 10b-5's requirement that it be "in connection with the purchase or sale of a security," and this is so even if neither the issuer nor its officials buy or sell shares themselves. SEC v. Tex. Gulf Sulphur Co., 401 F.2d 833, 862 (2d Cir. 1968).

9. *See* Kardon v. Nat'l Gypsum Co., 69 F. Supp. 512, 513–14 (E.D. Pa. 1946); Superintendent of Ins. v. Bankers Life & Casuality Co., 404 U.S. 6, 13 & n.9 (1971).

10. *See* Basic Inc. v. Levinson, 485 U.S. 224, 241–42, 250 (1988).

B. History of the Cause of Action

The fraud-on-the-market cause of action was blessed by the U.S. Supreme Court in its 1988 *Basic Inc. v. Levinson* decision.[11] Prior to the courts embracing the fraud-on-the-market theory, each plaintiff in a Rule 10b-5-based private damages action was required to prove "reliance" as this term was traditionally understood, i.e., that the misstatement was "a substantial factor in determining the *course of conduct* which results in [the recipient's] loss."[12] In other words, each plaintiff needed to prove that but for the misstatement, the plaintiff would not have made the purchase. This traditional reliance requirement meant that prior to *Basic*, it was essentially impossible for a private damages suit based on a Rule 10b-5 violation to proceed as a class. A class action requires that common issues of fact and law predominate,[13] and this requirement cannot be met if each plaintiff must individually prove that the misstatement was an important determinant in his or her decision to purchase the shares in question.[14] This unavailability of a class action was critical because a securities action is very expensive to pursue and a class action's aggregation of claims allows the class members to enjoy substantial economies of scale in the costs of litigation. In this earlier period, with a class action and these associated economies not available, a claim based on an issuer misstatement violating Rule 10b-5 was infeasible for all but persons who engaged in very large trades.

Basic changed all this. It introduced a fundamentally new and different way for plaintiffs to prove a causal relationship between an issuer's misstatement and the plaintiffs' losses. Under this then-new fraud-on-the-market theory, if an issuer whose shares trade in an efficient market makes a material misstatement, the misstatement is expected to affect the issuer's share price.[15] The Court said that because the misstatement will have an impact on the issuer's share price and because all traders rely on the integrity of this price as being free of the influence of such misstatements, individual reliance can be presumed rather than proven.

In essence, the Court created a new action based on a different theory of the causal connection between the misstatement and the investor's losses: the idea that the issuer's misstatement caused a plaintiff to *pay too much*, rather than

11. 485 U.S. 224.

12. List v. Fashion Park, 340 F.2d 457, 462 (2d Cir. 1965) (emphasis added) (internal quotation marks omitted).

13. *See* Fed. R. Civ. P. 23.

14. *See* Castano v. Am. Tobacco Co., 84 F.3d 734, 745 (5th Cir. 1996) ("[A] fraud class action cannot be certified when individual reliance will be at issue.").

15. *See Basic*, 485 U.S. at 246–47 (endorsing presumption that "market price of shares traded on well-developed markets reflects all publicly available information, and, hence, any material misrepresentations"). Although courts have subsequently developed the requirement that plaintiffs must establish the efficiency of the market for the issuer's shares, the U.S. Supreme Court in *Basic* did not strictly call for this. *Id.* at 246 n.24. In this regard, Professors Bebchuk and Farrell have urged instead a focus on the simple question of whether the statement distorted price. Lucian A. Bebchuk & Allen Ferrell, *Rethinking* Basic, 69 Bus. Law. 671 (2014).

that the misstatement induced a plaintiff to make what turned out to be an unfortunate share purchase.[16]

This presumption eliminated the requirement for proof of individual reliance and in the process removed the obstacle that the requirement had imposed for Rule 10b-5-based class actions. In so doing, it exposed misstatement-making issuers to a much larger chance of needing to pay out substantial sums as the result of a securities suit.[17]

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16. *Basic*, 485 U.S. at 243 ("Reliance provides the requisite causal connection between a defendant's misrepresentation and a plaintiff's injury. There is, however, more than one way to demonstrate the causal connection." (citations omitted)). For further discussion of how the fraud-on-the-market theory represents a new cause of action, not just an ordinary evidentiary presumption, see Merritt B. Fox, Halliburton II: *It All Depends on What Defendants Need to Show to Establish No Impact on Price*, 70 Bus. Law. 437, 457–59 (2015).

17. The fraud-on-the-market doctrine's origins date back to a handful of lower court decisions handed down in the years preceding *Basic*. Most notable is the Ninth Circuit decision, *Blackie v. Barrack*, 534 F.2d 891 (9th Cir. 1975), where the court stated "proof of subjective reliance on particular misrepresentations is unnecessary to establish a 10b-5 claim for a deception inflating the price of stock traded in the open market." *Id.* at 906 (citations omitted).

In *Blackie,* and in the Fifth Circuit decision, *Rivkin v. Crow*, 574 F.2d 256 (5th Cir. 1978), the courts each suggested a second path as well by which plaintiffs could be relieved of the class-action-killing burden of affirmatively establishing individual reliance. *Blackie*, 534 F.2d at 905–06; *Rivkin*, 574 F.2d at 263. The *Blackie* court, for example, stated "the class members' substantive claims either are, or can be, cast in omission or non-disclosure terms" and then went on to quote from the U.S. Supreme Court decision in *Affiliated Ute Citizens of Utah v. United States*, 405 U.S. 128 (1972), saying:

> The Court has recognized that under such circumstances "involving primarily a failure to disclose, positive proof of reliance is not a prerequisite to recovery. All that is necessary is that the facts withheld be material in the sense that a reasonable investor might have considered them important in the making of his decision."

534 F.2d at 905–06 (quoting *Affiliated Ute*, 538 U.S. at 153–54).

In the decades that have followed *Blackie* and *Rivkin*, however, the fraud-on-the-market approach has dominated this second path, for good reasons in our view. The circumstances in *Affiliated Ute* were in fact very different from those in these other two cases. *Affiliated Ute* involved defendants who had one-on-one interactions with the plaintiffs and who had stayed totally silent in a situation where the Court found they had an obligation to disclose. *Affiliated Ute*, 405 U.S. at 154. *Blackie* and *Rivkin* each involved plaintiffs who were purchasers of the defendant issuer's stock in the secondary trading market where the issuer affirmatively did make statements. The claim of the plaintiff in each of these two cases was that the issuer's statements were untrue or misleading. The "omission" to which the *Blackie* court refers did not involve the failure to observe a pre-existing duty to disclose, rather the omission was what made the statement that was made misleading. *See infra* note 37.

This difference in circumstances between *Affiliated Ute* and these other two cases is important. Recall that traditionally, for a plaintiff to establish reliance, she must affirmatively show that she would have acted differently but for the defendant's violation, and this, at a minimum, requires that she show she was aware of the defendant's misstatement. *See supra* note 12 and accompanying text. When applied in a case with facts like those in *Affiliated Ute* where the defendant's Rule 10b-5 violation arises out of its total silence, the plaintiff who in fact would have acted differently will have a great deal of difficulty proving this to be the case. The problem is that she has no statement to which she can point and demonstrate her awareness. The U.S. Supreme Court in *Affiliated Ute* gives such a plaintiff a break by creating in essence a presumption of reliance where the nondisclosed information is material. This presumption makes sense since the information's materiality implies that the reasonable investor might well have acted differently had she known it.

In contrast, plaintiffs in cases like *Blackie* and *Rivkin* who in fact would have acted differently but for the issuer making the misstatement do not have this problem. They do have a statement to point to and show their awareness. So the special difficulty in establishing traditional reliance that arises in total silence cases is not a good reason for a rule that gives these *Blackie* and *Rivkin* type plaintiffs a

III. Social Welfare Analysis

A. The "Stripped-Down" Economic Model of the Fraud-on-the-Market Cause of Action

Assume that a plaintiff will be able to establish that an issuer, whose shares trade in an efficient market, made a misstatement with scienter.[18] Analyzed doctrinally, there are four remaining legal issues in a fraud-on-the-market action for damages: the materiality of the misstatement, loss causation, transaction causation, and the measure of damages.[19] As we will discuss in more detail later, the litigation of such an action can be described in terms of the meaning of each of these terms, the rules of pleading with respect to them, the allocation, between the parties, of the burdens of proof and persuasion on each of these issues at each stage of the litigation beyond the motion to dismiss, and the forms of evidence allowable to meet these burdens.[20]

For the purposes of our discussion here, however, the important point is that resolving these four doctrinal issues ultimately boils down to answering just two basic questions: (1) Relative to what the price would have been if the misstatement had not been made, did the misstatement inflate the price paid by at least some threshold amount, and, (2) if so, did the plaintiff suffer a loss as a result? Viewing things from this perspective is what we will refer to as the "stripped-down" economic model of the fraud-on-the-market cause of action. Where both these questions can be clearly answered in the affirmative, these four doctrinal elements for the cause of action will be satisfied.[21]

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break. Rather, as discussed in *supra* notes 15–16 and accompanying text, if relief is to be provided from the traditional reliance requirement for this type of plaintiff, a wholly different rationale is needed. That rationale is that for a stock with liquid secondary trading markets, the misstatement inflates its price relative to what it would have been absent the misstatement, thereby providing a causal link between the violation and the injury to the plaintiff that is an alternative to the causal link provided by the traditional reliance rule.

Consistent with the rationale suggested here for giving a plaintiff in the total silence situation a break is the fact that the Court clearly did not make the break available to a plaintiff who alleges that the defendant affirmatively made an untrue statement. There is no obvious reason to distinguish between this untrue statement situation and the one where the allegation is that the defendant affirmatively made a statement that was misleading because of some omission. Whether the omission makes the statement made materially misleading is, just like the materiality of an untrue statement, assessed by the objective reasonable man standard, not by how the omission affects an individual plaintiff.

18. To establish a claim under section 10b-5, plaintiffs must plead a mental state evincing an intent to deceive, manipulate, or defraud, which, in the case of an alleged misstatement, means knowledge of the truth or extreme carelessness with respect to the truth of the statement. *See, e.g.*, Ernst & Ernst v. Hochfelder, 425 U.S. 185, 194 n.12 (1976).

19. *See, e.g.*, Dura Pharms., Inc. v. Broudo, 544 U.S. 336, 341–42 (2005) ("[T]he action's basic elements include: (1) a material misrepresentation (or omission); (2) scienter . . . ; (3) a connection with the purchase or sale of a security; (4) reliance [or] 'transaction causation'; (5) economic loss; and (6) 'loss causation' . . . ." (internal citations omitted)) (emphasis omitted).

20. See *id.* at 342–43 (noting plaintiff must independently establish causation; "an inflated purchase price will not itself constitute or proximately cause the relevant economic loss" because of "tangle of factors affecting price").

21. This observation parallels Daniel Fischel's insight in a seminal pre-*Basic* article, which commented on lower court cases that were the origin of the fraud-on-the-market cause of action. Daniel R. Fischel, *Use of Modern Finance Theory in Securities Fraud Cases Involving Actively Traded Securities*,

This point can be seen as follows. Suppose the issuer does in fact make a misstatement that, relative to if the misstatement had not been made, inflates its share price by at least the specified threshold amount. An investor who purchases shares of the issuer while the price is still inflated pays more than if the issuer had not made the misstatement. And she clearly suffers a loss if she still holds the shares at the time the truth is fully revealed since she cannot by this point recoup this injury by selling into a still-inflated market. In an efficient market, revelation of the truth fully dissipates whatever portion of the inflation, if any, still remained. This investor's loss would thus satisfy the loss causation requirement (with transaction causation being satisfied as well by the mere fact that the situation receives the fraud-on-the-market presumption).[22] The amount of this loss is her damages, thereby satisfying the damages requirement.[23] As for the materiality requirement, the U.S. Supreme Court held that a fact is material if there is a substantial likelihood that a reasonable investor would consider it important in a decision whether to purchase or sell a security.[24] Anytime a misstatement meaningfully inflates the price of a security trading in an efficient market, it has obviously had an actual effect on the behavior of investors. This strongly suggests that a reasonable

38 BUS. LAW. 1, 12–13 (1982). Fischel suggested that the adoption of the cause of action reflected an underlying view of the market that most investors were price takers. As a consequence, the way that they are hurt by a misstatement is by its effect on price, not by its effect on their decisions to buy or sell. Fischel observed that for an action based on this view, the traditional doctrinal issues of materiality, reliance, and damages reduce to a single inquiry: Did the misstatement affect price and if so by how much? *Id.* at 13. The Supreme Court cited Fischel's article in *Basic*. 485 U.S. at 246 n.24.

22. In the pre-fraud-on-the-market years preceding *Basic,* the courts refined their causation analysis to require two showings: transaction causation and loss causation. Transaction causation required the plaintiff to show she would not have purchased but for the misstatement. Loss causation required the plaintiff to show that the untruth was responsible for the loss in some reasonably direct or proximate way. *See* Merritt B. Fox, *After* Dura*: Causation in Fraud-on-the-Market Actions*, 31 J. CORP. L. 829, 834–36 (2006) (discussing pre-*Basic* framework). These concepts do not fit well the alternative causal connection allowed in the fraud-on-the-market actions, but the courts have maintained the two requirements. Transaction causation is presumed in any situation where the fraud-on-the-market presumption is allowed, i.e., where there is a material misstatement by an issuer whose shares trade in an efficient market. *See, e.g.*, Semerenko v. Cendant Corp., 223 F.3d 165, 178–83 (3d Cir. 2000). Thus, the fundamental causal inquiry in the fraud-on-the-market theory is framed in terms of loss causation. A showing of loss causation requires not only that the misstatement inflated the issuer's share price, but also that there was a causal connection between this inflation and a loss by the plaintiff. *Dura Pharms.*, 544 U.S. at 346–48. Under current law, the statement in the text that the investor's loss would satisfy the loss causation requirement is a slight simplification. Language in *Dura*, incorrectly in our view, suggests that if an intervening event unrelated to the misstatement led to the issuer's shares losing all of their value, loss causation would not be demonstrated. *Id.* at 342–43. *See infra* Part VI.A.2.a.

23. This corresponds to the "out-of-pocket" measure of damages that is the standard measure in Rule 10b-5 cases. *See* Green v. Occidental Petroleum Corp., 541 F.2d 1335, 1341–46 (9th Cir. 1976) (Sneed, J., concurring in part & concurring in the judgment).

24. *Basic*, 485 U.S. at 231 ("We now expressly adopt the *TSC Industries* standard of materiality for the § 10(b) and Rule 10b-5 context."). In *TSC Industries, Inc. v. Northway, Inc.*, a case involving the federal securities law regulation of proxy voting, the U.S. Supreme Court found that a fact is material "if there is a substantial likelihood that a reasonable investor would consider it important in deciding how to vote." 426 U.S. 438, 449 (1970).

investor, like those actually trading in the market, would have found it important.[25]

B. Social Welfare Analysis: Assuming the Misstatement's Inflationary Effect Can Be Assessed Precisely

We can use this stripped-down economic model to identify the social benefits and costs of fraud-on-the-market actions generally. We will take as our starting point the example from above of the issuer that makes with scienter a misstatement that inflates its share price, and an investor who purchases shares of the issuer while the share price is still fully inflated by the misstatement and who still holds the shares at the time the truth is revealed. As noted, the investor has suffered a loss because of the misstatement: she paid more than she would have if the misstatement had not been made and she has not recouped any of this loss by reselling into a still inflated market.

In this section, we simplify the world by assuming that the extent of this inflation can be determined with precision and consider why it would be socially desirable to limit the availability of damages liability to cases where the extent of the misstatement's inflationary effect is above some minimum percentage threshold. In the section that follows, we will relax this assumption and recognize the inevitable imprecision of whatever legal process is used to determine whether any such threshold has been met. This imprecision has two consequences. The inflationary effects, if any, of some misstatements will be assessed as at or above the threshold when they are in fact below the threshold or even zero, i.e., the assessments will sometimes yield false positives. And the inflationary effects of others will be assessed as below the threshold when they are in fact above it, i.e., the assessments will sometimes yield false negatives.

There are both compensation and deterrence-based rationales for the legal system providing for a wealth transfer from the example's issuer to its investor in the amount of the investor's loss. We find the deterrence rationales to be stronger and so we will devote most of our attention to them. As we suggest below, however, even if one were to find the compensation rationales stronger than we do, there still would be a need, for reasons paralleling the ones set out here with regard to deterrence, to consider the need for some minimum threshold percentage amount of inflation. There would also still be the need to consider the implications of the false positives and false negatives that will inevitably be associated with whatever legal process is used to assess whether this threshold has been met.

1. The threat of liability deters misstatements. Imposing liability on an issuer for making a share price–inflating misstatement deters other issuers from making such misstatements in the future. Indeed, this penalty is the key private enforcement mechanism for fending off the corrosive effects of misstatements

25. *See, e.g.*, *In re* Merck & Co., Inc. Sec. Litig., 432 F.3d 261, 273–74 (3d Cir. 2005) (noting "'reasonable investors' are the market" and in an efficient market information is reflected in price, and so when information changes price, it must be important to reasonable investors).

made by publicly traded issuers both in response to the Exchange Act's comprehensive system of mandatory issuer disclosure and in connection with their voluntary ongoing programs of public announcements such as in analyst calls.[26]

All else equal, an issuer's managers, who have pressures to maximize its expected future cash flow, will be less likely to make misstatements if doing so creates the prospect of the issuer needing to pay out a large amount of cash in response to a judgment or settlement. This is no different than a firm being more careful with respect to an environmental rule if its violation could lead to a large fine, or with respect to the design safety of a product if a defect could lead to a successful product liability class action.

Deterring issuer misstatements, as discussed below, has social benefits. But there are also social costs associated with having a private damages regime for issuer misstatements. Thus, whether it is desirable to use such a regime to deter issuer misstatements, and, if so, how it should be constructed, depends on a comparison of these social benefits and costs.

2. Social benefits from reducing misstatements. Reducing the incidence of issuer misstatements improves share price accuracy and issuer transparency. These improvements can in turn increase social welfare by enhancing, in a number of ways, the efficiency with which productive resources and risk are allocated in our economy.

Myriad problems flow from issuer misstatements. An issuer misstatement that affects its secondary market trading price makes that price a less accurate prediction of the issuer's future cash flows. And more generally, it renders the firm's inner workings more opaque. The less accurate an issuer's share price is, the less reliable it is in providing a signal when an issuer's management is utilizing the firm's current productive assets poorly, or is failing to seek out and implement promising new projects or to avoid the implementation of unpromising ones. This lower level of transparency and less accurate price signal make blockholder activism and hostile takeovers less effective mechanisms for controlling the agency costs of management. Less accurate prices also undermine the effectiveness of share price–based compensation as a means of aligning the interests of managers with those of shareholders.[27]

A higher incidence of issuer misstatements in the economy also makes secondary trading markets less liquid. The more corporate misstatements there are, the more instances where the market's perception of an issuer's situation is different from the issuer's true situation. The issuer's insiders are aware of the true situation and can then utilize their special knowledge to trade in the issuer's shares to their advantage. In response, secondary market liquidity suppliers will widen their bid-ask spreads because of the increased likelihood that, to the inevitable disadvantage of the liquidity suppliers, they will be on the other side of such

26. *See, e.g.*, John C. Coffee, Jr., *Law and the Market: The Impact of Enforcement*, 156 U. PA. L. REV. 229, 266–74 (2007).

27. These points relating to blockholder activism, hostile takeovers, and share price compensation are discussed in more detail in Merritt B. Fox, *Civil Liability and Mandatory Disclosure*, 109 COLUM. L. REV. 237, 252–60 (2009).

trades. As a result, market liquidity decreases and secondary trading becomes more expensive.[28] This added cost of trading leads to less efficient allocation of risk in the economy because it discourages timely portfolio rebalancing.[29] It also does its own damage to share price accuracy because, by adding to costs, it reduces the profitability of trades by persons who seek out new fundamental value information and so results in less of such activity.[30]

Moreover, less liquidity increases the cost of capital. Less liquid shares are less valuable to hold. The prospect that the shares in a new offering with a given expected future dividend stream will thereafter trade in a less liquid secondary market lowers the price that the issuer will be able to fetch for these shares. This means that some projects are not undertaken that, in a higher liquidity world, issuers would have undertaken with funds that investors would have wished to provide. It thereby leads to a less efficient allocation of productive resources between using them to produce goods for current consumption and using them to implement investment projects that result in greater future consumption.[31]

3. Social costs of deterring misstatements through fraud-on-the-market suits. These gains do not come for free. For deterrence to work, issuers that make misstatements must be subject to the threat of securities litigation that imposes damages liability on them. Such litigation uses substantial amounts of society's scarce resources that could otherwise be deployed for other useful purposes. These resources include the lawyers' and experts' time on both sides of the litigation, as well as the time and effort expended by the issuer's executives and by the judiciary.[32]

4. The inflation threshold. Securities litigation is complicated, and thus costly, whether the misstatement involved resulted in a large price distortion or only a small one. Assume, as we are in this section, that the extent by which an issuer's misstatement inflates its share price can be determined with

28. *See* Yakov Amihud & Haim Mendelson, *Asset Pricing and the Bid-Ask Spread*, 17 J. FIN. ECON. 223 (1986); MERRITT B. FOX, LAWRENCE R. GLOSTEN & GABRIEL RAUTERBERG, THE NEW STOCK MARKET: LAW, ECONOMICS, AND POLICY 145–56 (2019).

29. *Id.* at 46–48.

30. *Id.* at 152. For other treatments of the negative effect of insider trading on share price accuracy, see also Michael J. Fishman & Kathleen M. Hagerty, *Insider Trading and the Efficiency of Stock Prices*, 23 RAND J. ECON. 106, 110 (1992); Zohar Goshen & Gideon Parchomovsky, *On Insider Trading, Markets, and "Negative" Property Rights in Information*, 87 VA. L. REV. 1229, 1238–43 (2001).

31. FOX, GLOSTEN & RAUTERBERG, *supra* note 28, at 44–46.

32. Total settlements for the years 2009–2018 have averaged about \$3.55 billion per year. CORNERSTONE RESEARCH, SECURITIES CLASS ACTION SETTLEMENTS: 2018 REVIEW AND ANALYSIS 3 (2018). Available data suggests that contingent-fee awards to plaintiffs' lawyers in securities class-action lawsuits average around 25 percent. Lynn A. Baker et al., *Is the Price Right? An Empirical Study of Fee-Setting in Securities Class Actions*, 115 COLUM. L. REV. 1371, 1394 (2015). If we assume that defendants' lawyers are paid fees comparable to this amount, this would suggest that the total annual legal expenses in recent years for the two sides associated with securities class actions (the defense's legal fees ultimately being paid by shareholders and the plaintiff's legal fees coming out of the recovery) totaled about \$1.8 billion ((0.25 + 0.25) x \$3.55 billion). This figure on legal expenses does not include the additional social costs associated with the time consumed by issuer executives and the judiciary. It is possible, however, that this dollar estimate may be somewhat exaggerated because the total damages figure is driven in part by a few exceptionally large settlements where the average fee award is far less than 25 percent. For example, in the *Petrobras* case, Judge Rakoff awarded fees of 6.6 percent of the \$3 billion recovery.

precision, and hence also the percentage by which the misstatement has changed price. Liability should be imposed on this issuer only in cases where, at the margin, the improvement in society's economic welfare from deterring future issuer misstatements that inflate prices by this percentage is at least as great as the social costs arising from the litigation attracted by a standard imposing liability for misstatements that inflate prices to this extent.

Accordingly, misstatements that inflate share prices below some threshold percentage should not be subject to fraud-on-the-market damage liability because the litigation would still be complicated and its associated social costs would exceed the social benefits from the deterrence that would be achieved. We will call this threshold the "*inflation threshold*." Put the other way, this is the point at which the price distortion is large enough that the social costs associated with the litigations invited by such a standard are worth social gain from avoiding the misstatements that these litigations would deter.

5. Differences of opinion concerning where inflation threshold should be set. The level at which the inflation threshold should be set is subject to a range of opinion. Where a commentator stands on this range depends on her assessments of a number of factors, including the power of fraud-on-the-market suits to deter, the importance of finely accurate share prices in promoting efficiency in the real economy, and the total social costs of such litigation. At one end of this range are commentators who, as a policy matter, believe that the fraud-on-the-market cause of action should be eliminated altogether (a position conceptually equivalent to setting the threshold so high that even if the cause of action were theoretically still available, no suits would be brought). At the other end are those who believe that the suits are currently too difficult to bring (i.e., that the inflation threshold implied by existing court decisions is too high).[33]

The existing case law does not set an explicit inflation threshold. However, as will be discussed further in Part IV, the court in a fraud-on-the-market suit will typically grant the defendant's motion for summary judgment unless the plaintiff can introduce a competently performed event study rejecting with 95 percent confidence the null hypothesis that the price change accompanying the misstatement or its corrective disclosure was not due entirely to other causes. In so doing, the court is establishing an implicit, though rough, inflation threshold.[34]

We do not take a position in this Article as to where the threshold should be set per se. Consider, however, a suit with characteristics that strongly suggest little or no chance that the plaintiff will be able to establish that the misstatement involved inflated share price by more than at most only a very small amount. We believe that the claim should be terminated at the earliest adjudicatory stage at which these characteristics become apparent. As will be developed as we proceed, we think that event-driven suits can often be determined at the motion-to-dismiss stage to have such characteristics.

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33. This range of views, and the rationales behind them, are exemplified by the opinions of the various justices in *Halliburton Co. v. Erica P. John Fund, Inc.*, 134 S. Ct. 2398 (2014).

34. *See infra* Part IV.C.2.

6. The proper counterfactual for calculating the extent to which an issuer's misstatement has inflated price. Which is the proper counterfactual for determining how much an issuer's misstatement inflated price: what the price would have been if the issuer had instead not made the misstatement, or what the price would have been if the issuer had, at the time of the misstatement, instead affirmatively told the truth?

a. The absence of a continuous mandatory disclosure regime. The starting point for answering this question is to recognize that a fundamental feature of U.S. securities law is that we do not have a continuous mandatory disclosure regime requiring an issuer to disclose every item of material information at the moment management becomes aware of it. Rather, under the Exchange Act, publicly traded issuers are required annually to file a Form 10-K, which requires answers to a wide variety of specified questions. Answers to a subset of these questions must be updated quarterly on a Form 10-Q filing, and disclosure of a limited category of current developments must be disclosed within five days in a Form 8-K filing.

The vice of the non-continuous disclosure system is that material information known to management can remain non-public for a period of time, including, sometimes, that a risk of some disaster is higher than the market understands it to be.

A non-continuous disclosure system has a number of virtues as well, however. Requiring answers to a tailored set of questions permits in a clear way issuers to keep non-public certain proprietary information that took effort to develop, thereby maintaining incentives to create such information. It also allows an issuer the needed time to make a disclosure relatively definitive, rather than constantly needing to update it based on partial information. And it avoids the need for a daily assessment of whether a matter becomes important enough to be considered material. These virtues take on particular importance in a securities law system like that in the United States where private damages liability plays an important role. Requiring only periodic disclosure greatly reduces controversy in private damages suits over exactly when a matter became material. The determination in most cases need only be made at most four times a year and there is no need to fight over whether or when, between those dates, a matter became material.

b. The proper counterfactual when, at the time of a misstatement, the issuer is not required to make a disclosure relating to its subject matter. In the situation where the issuer making the misstatement is not required by the periodic mandatory disclosure regime to provide a response relating to the subject matter of the misstatement, the issuer could have avoided illegality simply by staying silent.[35] So the

35. *See, e.g.*, Roeder v. Alpha Indus., Inc., 81 F.2d 22, 26 (1st Cir. 1987). The apparently most applicable part of Rule 10b-5 is 10b-5(b), which provides in relevant part that "[i]t shall be unlawful for any person, directly or indirectly, . . . [t]o make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading . . . in connection with the purchase or sale of any security." 17 C.F.R. § 250.10b-5 (2022). Thus, it creates no affirmative duty to speak, rather it makes illegal speech that is misleading because it leaves something out. Professor Langevoort, in his own quite subtle take on what to do about event-driven suits, suggests that there are situations where the SEC has fallen short and failed to create a rule mandating disclosure of particular recurring kinds of material risks. He suggests that sometimes courts, perhaps attempting a second-best solution,

"but for" counterfactual should be what the price would have been if the issuer had instead stayed silent.[36] Liability is based on the Rule 10b-5 violation and the plaintiff cannot be more damaged by this violation than the difference between what she paid and what she would have paid in the absence of the violation.[37]

impose liability in such situations, thereby creating a precedent that serves as a court-made affirmative disclosure rule concerning similar risks. Donald C. Langevoort, *Disasters and Disclosures: Securities Fraud Liability in the Shadow of a Corporate Catastrophe*, 107 GEO. L.J. 967, 971–72, 975 (2019). We are less optimistic that coherent disclosure rules can be effected in this way, as opposed to waiting for the SEC to act. In any event, Professor Langevoort agrees with our concern that if the courts, in doing this, award damages based on the price drop at the time of the disaster announcement, they would overcompensate the plaintiffs because this price drop seriously exaggerates how much the non-disclosure of the risk inflated price. *Id.* at 1009.

36. The situation would be different if, contrary to the hypothetical situations being considered in this Article, the issuer was selling shares. In that event, there is precedent that Rule 10b-5's prohibitions against insider trading apply to issuers and so an issuer selling shares would be in violation unless it disclosed all material non-public information in its possession. *See* Shaw v. Digital Equip. Corp., 82 F.3d 1194 (1st Cir. 1994). Courts have also found under Rule 10b-5 a "duty to correct" where an issuer makes a statement it believes to be correct but later finds out that the statement was false at the time it was made, as well as, perhaps, a "duty to update" where an initial statement contains an implicit representation that the statement will be updated over time as needed to keep it accurate, situations also different from those being considered in this Article. *See, e.g.*, *In re* Burlington Coat Factory Sec. Litig., 114 F.3d 1410, 1430–33 (3d Cir. 1997).

37. The U.S. Supreme Court recently articulated this theory well in the context of discussing the "price maintenance" theory for finding price inflation when a misstatement prevents a price from falling rather making the price higher than it was before. The Court referred to a misstatement's inflationary effect as "the amount that the stock's price would have fallen 'without the false statement.'" Goldman Sachs Grp., Inc. v. Ark. Tchr. Ret. Sys., 141 S. Ct. 1951, 1961 (2021) (quoting Glickenhaus & Co. v Household Int'l, Inc., 787 F.3d 408, 415 (7th Cir. 2015)). Indeed, the very existence of the price maintenance theory implies that the counterfactual is what would have happened to price if the issuer stayed silent. There would be no need for the price maintenance theory if the counterfactual were what would have happened if the issuer had told the truth. Where, relative to staying silent, telling the truth would have a negative effect on price, every misstatement helps maintain price.

This said, as Donald Langevoort has noted in a different article, there are a number of instances in the case law where courts have made statements suggesting that the appropriate counterfactual is what the price would have been if the issuer had told the truth. Donald C. Langevoort, *Compared to What? Econometric Evidence and the Counterfactual Difficulty*, 35 J. CORP. L. 183, 183 (2009). With one exception, the courts that have done so have not, however, engaged in any analysis as to why this is the more appropriate of the two possible counterfactuals; indeed they have not even recognized that there is an issue here. In our view, these courts have in essence sleepwalked into this position without any apparent recognition that they were making a choice. Langevoort agrees with our assessment, saying that the courts have "simply invoke[ed] the truth-telling counterfactual as a matter of course" and "gloss[ed] over th[e] problem." *Id.* at 187. He speculates that this is because of a combination of the appeal of using an event study to calculate whether liability is appropriate and the fact that there is a much greater likelihood of getting a statistically significant result if the event in the study is the corrective disclosure rather than the original misstatement. *Id.*

The exception, decided after the Langevoort article, is *In re Vivendi, S.A. Securities Litigation*, 838 F.3d 223 (2d Cir. 2015). In this case, the Second Circuit seeks to dismiss an argument invoked by the defendant to deny the admissibility of the price impact study prepared by the plaintiff's expert. This study did not find a price increase at the time of the misstatement, only decreases at times the truth allegedly came out, and the defendant argued that if there was no such price increase, the misstatement had no price impact. The defendant's rationale was that "'the preexisting inflation would have persisted' had the defendant who made those inflation maintaining statements '*simply remained silent*.'" *Id.* at 257 (emphasis added).

In response, the court starts by pointing out the possibility that if the defendant had remained silent, the inflation might have dissipated, a dissipation the misstatement may have prevented. *Id.* at 258. This ground, which is quite correct and would have been sufficient on its own to defeat the defendant's argument, implies that silence, not truth telling, is the proper counterfactual.

This reasoning is consistent with the U.S. Supreme Court's majority opinion in *Basic*, where it wrote:

The court, however, then adds a second, much more questionable ground in seeking to defeat the defendant's argument, one that carries a different implication: "[t]he proper question for purposes of our inquiry is not what might have happened had a company remained silent, but what would have happened if it had spoken *truthfully*." *Id.* at 258. In support of this proposition, the Second Circuit cites two of its earlier opinions. Each contains language to the effect that even if a company has no preexisting duty to disclose information on an issue, once it has chosen to speak, there is a duty to speak the whole truth. *See* Meyer v. Jinkosolar Holdings Co., 761 F.3d 245, 250 (2d Cir. 2014); Ciaola v. Citibank, N.A., 295 F.3d 312, 331 (2d Cir. 2002). Neither case, though, stands for the proposition that an issuer, by making an untrue or misleading statement, acquires a duty to disclose the truth, and hence that the truth-telling counterfactual is the correct one.

In *Meyer,* the defendant allegedly made a statement that was "technically true" but where "investors would be misled" because of the failure to disclose more. 761 F.3d at 251. In other words, the issuer was simply alleged to have violated Rule 10b-5(b)'s prohibition against "omit[ing] to state a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading." The failure to disclose additional information is what makes the statement a violation in the first place. We recognize that the conceptual distinction between "half-truth" omissions and misstatements is a complex question that we cannot fully address here. However, we think there are strong reasons to view a "half-truth" omission case like *Meyer* as just one violation, which could have been avoided by not making the technically true but misleading statement. In our view, *Meyer* stands simply for the proposition that if defendant's omission makes its statement materially misleading and the issuer has scienter, Rule 10b-5 by its terms has been violated. There is no reason why the appropriate counterfactual in such a situation should be any different from where the issuer made a statement that is materially untrue on its face. In each situation, the issuer has affirmatively made a statement that leads the market to misperceive the issuer's situation and distorts its share price as a result, and in each case silence would have avoided the problem.

In *Ciaola*, the defendant was the subject of a Rule 10b-5 claim for allegedly orally making materially untrue statements about the way it was hedging against risks created by a contract involving synthetic trading that the defendant had entered into with the plaintiff. The defendant defended itself, *inter alia,* by pointing to language in this contract whereby the plaintiff agreed that he was "not relying on any advice, statements or recommendations" of the defendant. 256 F.3d at 320. The court rejected this argument, "deem[ing] irrelevant Citibank's contention that the disclaimers meant that it owed Caiola no duty to disclose its hedging position," and saying "upon choosing to speak, one must speak truthfully about material issues." *Id.* at 330–31. In other words, the case concerns whether the disclaimers immunized the defendant against a claim based on an oral misstatement that might otherwise have violated Rule 10b-5's prohibitions on making an "untrue statement of a material fact." The court concludes that the disclaimers do not provide such immunization. To say that if one chooses to speak, one must speak honestly, is just a different way of saying one should not speak dishonestly. So *Cialoa* is just a straightforward case involving a statement that is allegedly materially untrue on its face. The real focus of the case is on whether the plaintiff's disclaimers bar a Rule 10b-5 misstatement action that might otherwise have been valid absent these disclaimers.

In sum, the case law lacks any well-reasoned rationale for the proposition that if one violates Rule 10b-5 by making a materially untrue or misleading statement, one commits a violation for failing to disclose the truth. This is not surprising because such a proposition has no foundation in the language of section 10(b) of the Exchange Act or Rule 10b-5(b). Rule 10b-5(b) creates no duty to speak truthfully. It just prohibits speaking untruthfully or misleadingly. The untrue or misleading nature of the statement—i.e., the failure to disclose the whole truth when speaking—is what creates the violation. It does not create a new duty to disclose the truth, the violation of which would be a second violation. Put another way, it is correct that there are two ways of avoiding illegality under Rule 10b-5(b): one is staying silent and the other is to speak but do so in way that is true and not misleading. There is, however, no duty to avoid liability in this second way because there is no duty to speak in the first place. Hence, there is no foundation in the language of the statute or the rule for using truth telling rather than silence as the counterfactual.

> Reliance provides the requisite causal connection between a defendant's misrepresentation and a plaintiff's injury. There is, however, more than one way to demonstrate the causal connection.[38]

As noted earlier, the causal connection in a case based on the traditional, pre-*Basic* way of establishing reliance is that the misstatement induced the buyer into purchasing. Because the misstatement caused the purchaser to acquire the security, she is entitled to the difference between what she paid and its true value at the time of purchase. So she is entitled, in a rescissionary kind of way, to whatever losses occur when the truth comes out.[39] In that kind of case, the second of the two possible counterfactuals is the appropriate one.

In contrast, reliance in the newer fraud-on-the-market type of case is that the plaintiff relies on the integrity of the market price. The plaintiff is not required to show that absent the misstatement she would not have bought, or that she was even aware of the misstatement. This means that there is no reason to think that she would not have bought even in the absence of the misstatement. In this situation, the causal connection between the defendant's misstatement and the plaintiff's injury is that the misstatement causes her to pay more than she would have in its absence, i.e., the first of the two possible counterfactuals.

c. The proper counterfactual when, at the time of a misstatement, the issuer is required to make a disclosure relating to its subject matter. What, though, about a fraud-on-the-market suit based on a misstatement that *is* prompted by some mandatory disclosure requirement. Should a misstatement's inflationary effect instead be calculated as the difference between the price paid and what the price would have been if the issuer had instead responded truthfully to the mandatory requirement?

Complicated concerns are raised by this question. In calculating how much the misstatement inflated price, should the amount by which the price would have been lower had the issuer stayed silent have added to it the amount, if any, by which it would have been even lower if the issuer had gone further and affirmatively told the truth. Making a misstatement in response to a mandatory disclosure requirement involves two Exchange Act violations. The first is the misstatement itself, which, if material and made with scienter, violates Rule 10b-5 in just the same way as if the issuer had not been subject to the disclosure requirement. The second violation is that by making a misstatement instead of telling the truth, the issuer fails to satisfy the disclosure requirement, which is a violation of section 13 of the Exchange Act.

There is no explicit statutorily based private right of action for damages for a section 13 violation. Moreover, unlike Rule 10b-5, no court has ever judicially established an implied private right of action for damages for such a violation. Given existing Supreme Court jurisprudence concerning the creation of implied

38. Basic Inc. v. Levinson, 485 U.S. 224, 243 (1988) (citations omitted).

39. We say "rescissionary kind of way" because, unlike true rescission, the concept of proximate cause bars compensation for losses unrelated to the difference between the price paid and the true value of the security at the time of purchase, i.e., the value if the truth had been told.

rights of action, it seems unlikely that a court will do so in the foreseeable future.[40] An issuer can thus reasonably argue that if it had stayed silent instead of making the misstatement, it would have violated just section 13 and there would be no basis for a private damages action against it. In that case, the argument goes, only the Rule 10b-5 violation gives rise to damages and thus there is no basis for its damages liability to extend beyond what it would have been if the issuer had just stayed silent.

No court has directly confronted this issue. We simply observe that although there may be good policy reasons for using truth as the counterfactual in mandatory disclosure cases, consistency with the existing larger legal regime appears to argue against it. Therefore, although we take no position on the issue, which is not central to our inquiry, we will proceed on the assumption that silence is the proper counterfactual in this special range of cases as well as in all others.

Even if it were decided that the proper counterfactual for these mandatory disclosure cases is what the price would have been if the issuer had affirmatively told the truth, all our conclusions would carry through, subject to the following exception. That exception, discussed in more detail later,[41] relates to the horse race between using the misstatement's price impact and the corrective disclosure's price impact as to which is the better proxy for the misstatement's inflationary effect. With misstatements not involving a mandatory disclosure violation, one of multiple strikes against using the corrective disclosure's price impact is that it can include part or all of the difference, if any, between what the price would have been if the issuer had instead stayed silent and what it would have been if the issuer had revealed the truth. With misstatements in response to a mandatory disclosure requirement, if the truth revealing counterfactual is decided to be the appropriate one, this strike against the corrective disclosure's price impact being the proper proxy becomes a strike in its favor. That said, even under these circumstances, other considerations may still render the corrective disclosure's price impact unreliable and hence not appropriate to use as the measure of the misstatement's inflationary effect, something that almost always would be so in event-driven cases.

In this connection, we should also note that where the mandatory disclosure regime affirmatively requires the issuer always to respond one way or the other, for example affirmatively to state whether some standard is met, silence would signal something amiss and cause a price drop.[42] Under the approach where silence is the counterfactual, it would be this lower price that would be the basis for determining how much the misstatement inflated price, and so there may be little or no difference between the two counterfactuals.

The issues discussed above come up in a bifurcated way in a different kind of case, which can also be labelled "event-driven." Consider an issuer that in

40. *See* Cort v. Ash, 422 U.S. 66 (1975); Cannon v. Univ. of Chi., 441 U.S. 677 (1979); Touche Ross v. Redington, 442 U.S. 560 (1979).
41. *See infra* Parts IV.A, IV.B, and VI.B.2.
42. *See infra* Part IV.A.3.

January knowingly understates the actual risk of a particular disastrous event. An example might be an assertion, not related to any mandatory disclosure requirement, that the issuer has rigorous procedures in place to minimize workplace sexual harassment. Its officials know, however, that these procedures are in fact not quite state of the art. In early September, they discover that a leading figure in the company has for some time been engaging in rampant sexual harassment, behavior that the very most effective procedures probably would have prevented. Several victims communicate with the company that they intend to sue unless, after negotiations, their demands for large settlement payments are met. The SEC's annual Form 10-K requires disclosure of pending litigation of this importance, and the issuer is due to make this filing at the end of September. The issuer makes the filing in a timely fashion without mentioning the pending harassment suits. These harassment suits are filed in October, making the whole matter public. Shortly thereafter, a fraud-on-the-market action is filed, which is based on the January misstatement and names as members of the class all persons who purchased shares since this misstatement. For the reasons discussed, the appropriate counterfactual for this case is what the price would have been if the issuer had stayed silent back in January. The failure to make the required disclosures in the 10-K, which likely had a much more profound effect on price but only for a short period of time, is a section 13 violation, which does not give rise to a cause of action for damages.

C. Expanding the Analysis to Account for Difficulties in Assessing a Misstatement's Inflationary Effect

The discussion so far has proceeded under the assumption that a misstatement's *inflationary effect*—the difference between the issuer's share price on the day the misstatement was made and what it would have been on that day if the misstatement had not been made—can be determined easily and with precision. This means it would be known with certainty whether the inflationary effect was sufficient to meet the inflation threshold, wherever the threshold is set. The real world is more complicated than this, however, and, as we will explore in Part IV, these complications are relevant to designing the legal process for adjudicating fraud-on-the-market actions in a way that maximizes social welfare.

The complication arises from the fact that a misstatement's inflationary effect is unobservable. This is because it involves the difference between the issuer's share price as affected by the misstatement, something the world did experience, and the price that would have prevailed if the issuer had instead complied with Rule 10b-5's prohibition against making misstatements by staying silent,[43] a counterfactual price that the world did not experience. So we need to look for proxies reflecting things that the world in fact did experience.

43. *See supra* Part III.B.6.

One proxy is the *misstatement's price impact*, i.e., the misstatement's contribution to whatever was the change in price from the day before the misstatement was announced. In other words, it is the difference between the actual observed price change from the day before the misstatement and the contribution to this observed price change as the result of every other piece of news that day. The idea is that any increase in price not due to these other factors is arguably a good proxy for the misstatement's inflationary effect since it is the portion of the price change due to the misstatement's announcement.

An alternative proxy is the *corrective disclosure's price impact*, i.e., the true-situation-revealing announcement's contribution to the price change from the day before. In other words, it is the difference between the actual observed price change from the day before the corrective disclosure's announcement and the contribution to this observed price change as the result of every other piece of news that day. The idea is that any decrease in price not due to these other factors is the market's reaction to the truth coming out. In turn, the market's reaction to the truth coming out is arguably a good measure of the misstatement's inflationary effect because the truth coming out eliminates any inflation in price caused by the misstatement.

There are two classes of problems—discussed in detail in Part IV—with the use of either of these proxies. One is that in many instances, neither proxy, even if it could be measured precisely, would equal the misstatement's inflationary effect. The other is that neither can in fact be measured precisely. As a result, we can at best only come up with an educated guess as to whether the misstatement's inflationary effect was above or below the inflation threshold, and sometimes we cannot even do that, a situation, as we will see, particularly likely to prevail with event-driven litigations.

These two classes of problems—the frequent lack of equivalence between a misstatement's inflationary effect and either the misstatement's or the corrective disclosure's price impact, and the fact each of these price impacts themselves can only be estimated—mean that whatever procedure the legal process uses to assess whether a misstatement's inflationary effect is greater than the inflation threshold, it will generate mistaken results a certain percentage of the time. It will sometimes impose liability on the issuer where the misstatement's inflationary impact, if any, is smaller than the inflation threshold. And it will sometimes block suits from succeeding where the misstatement's inflationary effect is larger than the inflation threshold.

Each of these mistakes has a social cost. Take first imposing liability where the misstatement's inflationary impact is less than the threshold. Doing so will deter some misstatements, but the kind of misstatements that it will deter are small enough in the damage they cause that the resulting social benefits are not as great as the social costs associated with the litigation attracted by such misstatements generating liability. Not imposing liability where the misstatement's impact is greater than the threshold results in the reverse situation: If liability had been imposed, the social gains from avoiding the damage that would be caused by the misstatements that are deterred is greater than the social costs associated with the litigation attracted by such misstatements generating liability. Because liability was not imposed, this potential net gain is lost.

D. Compensation Rationales

Commentators have also offered compensation-based rationales for the legal system providing for the wealth transfer effected by a successful fraud-on-the-market suit action. The transfer is from an issuer that has made a share-price-inflating misstatement in violation of Rule 10b-5 to an investor who has been made worse off because of this misstatement.

On the surface, at least, a claim for such compensation may seem compelling. The argument would be that it is unfair for the investor, who did nothing wrong, to suffer a loss because of the issuer's wrongdoing. This unfairness, the argument would continue, can be corrected by requiring the issuer to compensate the investor for this loss.[44] Alternatively, it has been argued that a system providing for this kind of wealth transfer provides a kind of insurance, a government-mandated spreading of the risk that an investor suffers such a loss.[45] However, the fairness and insurance rationales for imposing liability do not, in our view, hold up well under close examination,[46] a view widely shared by scholarly commentators on the issue.[47]

Even if one believes these rationales are more persuasive than we find them to be, parallel reasoning to the analysis of the deterrence rationale suggests that only misstatements with an inflationary effect above some minimum threshold should trigger a cause of action for such compensation. The larger a misstatement's inflationary effect, the more unfairness it creates for each share traded. Again, because securities litigation is complicated, and thus costly, whether the misstatement involved resulted in a large price distortion or only a small one, there is some level of unfairness below which the cost of a correction is not worthwhile. The same is true in terms of the insurance rationale: small losses are not worth the substantial transaction costs required to spread the risk.

44. *See* Randall v. Loftsgaarden, 478 U.S. 647, 664 (1986) ("in enacting the 1934 Act, Congress intended, not only to compensate injured investors, but to deter fraudulent and manipulative practices in securities markets and to ensure full disclosure of material information"); Elizabeth Chamblee Burch, *Optimal Lead Plaintiffs*, 64 Vand. L. Rev. 1109, 1117 (2011) (discussing the importance of compensating injured investors given their role in providing a public good—the efficient market). *See generally* Gary T. Schwartz, *Mixed Theories of Tort Law: Affirming Both Deterrence and Corrective Justice*, 75 Tex. L. Rev. 1801, 1823 (1997) (describing corrective justice's historical focus on victim compensation).

45. *See* James J. Park, *Shareholder Compensation as Dividend*, 108 Mich. L. Rev. 323, 347 (2009) (arguing that investor compensation reduces agency costs and plays an important loss spreading function in capital markets). *But see* A.C. Pritchard, *Who Cares?*, 80 Wash. U. L.Q. 883, 884 (2002) (investors seeking to protect themselves from fraud do so through diversification, not lawsuits).

46. For detailed critiques of the various rationales for compensatory damages, see Fox, *supra* note 4, at 1192–95; Fox, *supra* note 6, at 304–09.

47. *See, e.g.*, John C. Coffee, Jr., *Reforming the Class Action*, 106 Colum. L. Rev. 1534, 1556–66 (2006); Paul Mahoney, *Precaution Costs and the Law of Fraud in Impersonal Markets*, 78 Va. L. Rev. 623, 632 (1992).

Parallel reasoning to the analysis of the deterrence rationale also suggests that, given the inevitable imprecision in measuring whether a misstatement's inflationary effect meets the minimum threshold, the design of the legal process needs to recognize these tradeoffs between false positives and false negatives and to identify for any given case when, if ever, the point has been reached where the costs of a continuation of the litigation is on balance not socially worthwhile.

E. Establishing a Set of Conceptual Building Blocks

The discussion above introduces four terms that will repeatedly serve as conceptual building blocks throughout the rest of this Article, and so it is useful to flag them at this juncture. The terms are defined in terms of daily price changes, the conventional time span for discussions of price changes in fraud-on-the-market cases.

Misstatement's inflationary effect. A misstatement's inflationary effect is the percentage amount by which the issuer's share price was higher because of the Rule 10b-5 violation. To be more precise, the inflationary effect is measured by the difference between the issuer's closing share price on the day the misstatement was made and what that closing price would have been on that day if the issuer had stayed silent on the matter.

Inflation threshold. The inflation threshold relates to the minimum percentage price distortion—i.e., the minimum inflationary effect—required for an issuer misstatement to result in the imposition of damages. It should be set at the point whereby, in the eyes of the person setting it, the social gain from the misstatements avoided by the threat of liability equals, at the margin, the social cost associated with the litigations attracted by the prospect of receiving damages.

Misstatement's price impact. A misstatement's price impact is the misstatement's contribution to whatever was the change from the closing price the day before the misstatement to the closing price the day of the misstatement. More precisely, it is the difference between the actual observed price change from the day before the misstatement and the net contribution to the observed price change from every other piece of news during that twenty-four-hour period.

Corrective disclosure's price impact. A corrective disclosure's price impact is the corrective disclosure's contribution to whatever was the change from the closing price the day before the corrective disclosure to the closing price the day of the corrective disclosure. More precisely, it is the difference between the actual observed price change from the day before the corrective disclosure and the net contribution to the observed price change from every other piece of news during that twenty-four-hour period.

Using these four building block concepts, the key points of this social welfare analysis of the cause of action can be briefly summarized. Consider a case where a corporation has made with scienter a misstatement. Where the misstatement's inflationary effect can be assessed precisely and is greater than a properly set inflation threshold, it is socially beneficial to impose liability. This is because by doing so, the social gain from deterring misstatements with similar price distorting effects exceeds the social cost associated with the litigations attracted by the prospect of receiving damages. Where the inflationary effect can be assessed precisely and is less than this threshold, the reverse situation applies and it would be socially harmful to impose liability.

In the real world, however, a misstatement's inflationary effect cannot be directly measured because attempting to do so involves a counterfactual that never occurred. Instead the inflationary effect must be estimated by a proxy, either the misstatement's price impact or the corrective disclosure's price impact. As will be further developed in Part IV, use of these proxies introduces inevitable imprecision into the assessment of whether the misstatement's inflationary effect is in fact greater than the inflation threshold. This is because under many circumstances, one or both of these proxies, even if precisely measured, will not equal the misstatement's inflationary effect, and because in fact neither can be measured precisely. Thus, using the available proxies as best they can be measured can result in mistakes. The kind of misstatements that are deterred when liability is imposed in cases where the misstatements' inflationary impacts are less than the threshold are ones that do less damage than the social cost of the litigations attracted by imposing liability in such cases. The kind of misstatements that failed to be deterred when liability is not imposed in cases where the misstatements' inflationary impacts are greater than the threshold are ones that do more damage than the social cost of the litigations that would have been attracted if liability had been imposed in such cases. The adjudicatory process thus must be designed both to further the goal of imposing liability when the misstatement's inflationary effect is greater than the inflation threshold and to account for the inevitable errors involved in assessing whether this is the case.

IV. Designing an Optimal Adjudicatory Process for Assessing a Misstatement's Inflationary Effect

The question of whether a misstatement's inflationary effect is greater than the inflation threshold is potentially an issue at each stage through which a litigation can move: the motion to dismiss, the motion for class certification, the motion for summary judgment, and trial. This sequence of stages should be designed such that, at each stage, the suit can be terminated with no damages owing from the defendant if, given what is known at that stage, the likelihood of a false negative—throwing out a suit where the misstatement's inflationary effect was in fact greater than the threshold—is sufficiently low that continuing the suit is on balance not socially worthwhile.

At the completion of any given stage in the adjudication of a fraud-on-the-market claim prior to trial, one alternative is to allow the suit to continue onto the next stage. Continuation has the advantage that it allows more to be learned, thereby lessening the likelihood that the process ultimately yields a false negative. In other words, continuation lessens the chance that a plaintiff is denied a remedy where in fact the misstatement's inflationary effect was greater than the inflation threshold. The other alternative is to terminate the suit. Termination has the advantage of avoiding the social costs arising from litigating the matter through the next stage. The design of each stage of the adjudicatory process needs to recognize this tradeoff between the gains of continuation versus the gains of termination. The considerations associated with making the right choice involve what information economists refer to as the optimal-stopping problem.[48]

This Part explores some of these considerations. We start with a more extended discussion of the two potential proxies for a misstatement's inflationary effect—the misstatement announcement's own price impact and the corrective disclosure announcement's price impact—and the circumstances under which one or both will be so unreliable as to be essentially useless even if it can be precisely measured. If, at any point in the litigation, it becomes apparent that neither price impact can serve as a reliable proxy, the action should be terminated because there is no other plausible way for the plaintiff to demonstrate that the misstatement had an inflationary effect. The situation where neither proxy is useful can often be ascertainable as early as the motion-to-dismiss stage of the litigation, especially, as it turns out, in event-driven cases.

We then go on to consider cases where the price impact of at least one of these announcements appears at the motion-to-dismiss stage to be a sufficiently reliable proxy for the misstatement's inflationary effect that proxy unreliability is not a reason to discontinue the litigation. Neither proxy is directly observable and so the question then is how to estimate this price impact and its magnitude relative to the inflation threshold. The standard approach is to use an event study. The question addressed by the event study is the confidence with which we can reject the null hypothesis that the announcement had *no* price impact at all. We will see that setting the required confidence level at 95 percent, as courts normally do, translates into a crudely measured implicit inflation threshold. This discussion also allows us to consider, for each stage in the adjudicatory process, what, if anything, might be sufficient information to conclude that the plaintiff does not have a plausible chance of proving at trial that the misstatement meets this 95 percent standard and thus should be terminated.

Throughout this Part, we will assume that we are dealing with an issuer that has made a misstatement with scienter and that the plaintiff purchased her shares shortly after the misstatement was made and was still holding them at the time of the corrective disclosure. So the operative question, according to the stripped-down model, is whether the misstatement's inflationary effect was greater than the inflation threshold.

48. The optimal stopping problem concerns when the optimal time is to take a certain action, in this case to discontinue a litigation even though proceeding to the next stage would generate additional information that would further reduce the chance of a false negative (throwing out a suit based on a misstatement that has an inflationary effect that in fact is greater than the minimum threshold). For an application of optimal stopping in a somewhat different legal context, see Alan Schwartz, *Products Liability, Corporate Structure, and Bankruptcy: Toxic Substances and the Remote Risk Relationship*, 14 J. LEGAL STUD. 689, 697–700 (1985).

A. The Misstatement's Price Impact as a Proxy for Its Inflationary Effect

Consider the daily price change that is observed to accompany a misstatement: the difference between the closing price on the day of the misstatement versus that on the day before. A misstatement's price impact, as noted above, is the difference between this observed price change and the net price impact of all other news affecting the issuer's price that day. The question addressed here is the circumstances under which a misstatement's price impact is a good proxy for its inflationary effect and the circumstances under which it is not. As demonstrated below, the critical factor is whether the market would have drawn any negative inferences had the issuer instead stayed silent with respect to the subject matter of the misstatement.

1. No negative inferences from silence. Suppose that the market would *not* have drawn any negative inferences from silence. To see the consequences, we will start with an example. Assume that the price impacts of the other news affecting an issuer on the day of a misstatement, on a net basis, pushed the price down by \$2.00. The issuer's price is observed to increase by \$1.00 to \$61.00 on the day of the misstatement. In this case, the misstatement's price impact would be (\$61.00 – \$60.00) – (-\$2.00) = +\$3.00. Its inflationary effect would also be \$3.00 because the price would have been \$58.00 instead of \$61.00 had the issuer stayed silent. So in this example the misstatement's price impact is a perfect proxy for its inflationary effect.

Generalizing from the example, *in all cases, if the market would not have drawn any negative inferences had the issuer instead stayed silent with respect to the subject matter of the misstatement, the misstatement's price impact will be a perfect proxy for its inflationary effect.*[49] Under these circumstances, the counterfactual to which to compare the observed price change—what the price would have been absent the

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49. This point with respect to an issuer making a misstatement can be shown formally. Define the terms below as follows:

P_{1M} = the closing price on the day of the misstatement

P_0 = the closing price on the trading day immediately preceding the misstatement

ON = the net price impact of all the other news affecting the issuer on the day of the misstatement

NI = the negative impact on prices from any inferences the market would have drawn if the issuer had instead stayed silent with respect to the subject matter of the misstatement $NI > 0$.

$P_{1S} = P_0 + ON - NI$ = the closing price that would have occurred on the day of the misstatement if the issuer had stayed silent with respect to the subject matter of the misstatement

IE = the misstatement's inflationary effect = $P_{1M} - P_{1S}$

PI = the misstatement's price impact = $P_{1M} - P_0 - ON$

From this, it can be seen

$$IE = P_{1M} - P_{1S} = P_{1M} - (P_0 + ON - NI) = (P_{1M} - P_0 - ON) + NI = PI + NI$$

In other words, if NI = 0, i.e., if the market would *not* have drawn any negative inferences from issuer silence, then PI = IE, i.e., the misstatement price impact equals its inflationary effect and hence is a perfect proxy.

misstatement—is simply the change in price due, on a net basis, to price impacts of all the other pieces of news affecting an issuer on the day of the misstatement.

2. Negative inferences from silence. Now suppose that the market *would* have drawn negative inferences from silence. We will again start with an example. Assume again that the price impacts of the other news affecting an issuer on the day of the misstatement on a net basis push the price down by $2.00. This time, however, the observed price change is a drop of $2.00 to $58.00. Assume as well that the market would have inferred bad news to the extent of $3.00 if the issuer had stayed silent. The misstatement's price impact would be ($58.00 – $60.00) – (-$2.00) = $0. But its inflationary effect would have been, as in the first example, $3.00. This is because the price would have been $55.00, instead of $58.00, had the issuer instead stayed silent on the day the misstatement occurred. In other words, the misstatement just fully allays what would have been a $3.00 lower price had the issuer stayed silent. Thus, the misstatement is truly "price maintaining." In this second example, the misstatement's price impact is a highly imperfect proxy for its inflationary effect. The price impact suggests that the misstatement had no inflationary effect at all when it in fact had an inflationary effect of $3.00.

Generalizing from this second example, *to the extent that the market would have drawn negative inferences from silence, the misstatement's price impact understates its inflationary effect by the amount equal to what the negative inference's price impact would have been.*[50]

3. Reasons why the market might make negative inferences from silence. As just discussed, whether the market would have made negative inferences if the issuer had stayed silent can be critical to whether fraud-on-the-market liability should be imposed on an issuer. In essence, we are considering whether we have a situation where an issuer's misstatement allows existing expectations of its future cash flow to continue when failing to make a statement would have led to a decline in these expectations. In such a case, the misstatement does not push up the issuer's share price at all relative to the day before, but the price is inflated in a "but for" sense because it is higher than it would otherwise have been. The courts, under the so-called "price maintenance theory," have generally permitted suits claiming to be of this sort to proceed, but, as will be discussed in Part VI, have not given much attention as to whether in any given case the claim is in fact plausible.[51] The discussion here suggests that, despite this judicial inattention to date, it is worthwhile to identify what would be reasonably reliable guides as to whether this claim—that silence would have led to negative inferences—is likely to be correct.

50. Using the same notation and calculations from the immediately preceding note, recall that:

$$IE = P_{1M} - P_{1S} = P_{1M} - (P_0 + ON - NI) = (P_{1M} - P_0 - ON) + NI = PI + NI$$

In other words, if $NI > 0$, i.e., if the market *would* have drawn any negative inferences from issuer silence, then $PI = IE - NI$, i.e., the misstatement's price impact understates it inflationary impact by the amount by which the market would have marked down the price of the issuer if it had instead stayed silent.

51. *See infra* Part VI.A.2.b.iii.

One situation in which silence would lead the market to infer negative news is a misstatement made where the Exchange Act's mandatory disclosure regime requires some kind of response to a question one way or the other. The absence of any response in such a situation would likely lead to a decline in expectations: the issuer's willingness to incur a securities law violation rather than provide an answer would suggest that a truthful answer would have involved bad news.

Another situation is where a misstatement is in response to a question from an analyst or the media at a time when a refusal to answer would have led to expectations of lower expected future cash flows. A third is where a misstatement preemptively answers an analyst or media question very likely to be asked in the near future that, if it had been asked and not answered, would have led to the same lowered expectations. Although there are almost certainly a range of cases where it would be difficult to determine one way or the other whether the misstatement in fact was preemptive in this fashion, there also will be many that on the face of things either pretty clearly are preemptive this way, or are not, as will be illustrated when we discuss in Part V our six representative apparently event-driven cases.

More generally, signaling theory suggests that there are yet other occasions where an issuer's silence would lead to negative inferences. Suppose an issuer's competitive rivals make statements with regard to some aspect of their respective businesses. These statements correctly and credibly indicate states of affairs at their businesses that are better than the actual state of affairs at the business of the issuer in question. The issuer makes a false statement that suggests that its affairs were similarly good to those of its competitors. If the misstatement-making issuer had instead stayed silent, the market might have inferred that its situation was worse than that of the other firms.

4. Why no liability if a misstatement's price impact is less than the threshold and there would be no negative implication from silence? Suppose that an issuer voluntarily states, consistent with what the market already thought, that all is going fine with regard to some matter when in fact it knows there is a serious problem. Assume again that the price impacts of the other news affecting an issuer on the day of its misstatement, on a net basis, pushed the price down by $2.00. The issuer's price is observed to decrease by $2.00 to $58.00 because the statement did not change the market's expectations concerning the issuer's future cash flows. The price would also have declined to $58.00 if the issuer had stayed silent, so there would be no negative inferences from silence. If the issuer announced the truth, the stock would have dropped by $7.00 instead of $2.00.

In this case the misstatement's inflationary impact is zero and in our view the issuer should have no liability under a fraud-on-the-market theory. This may bother some readers because the issuer made a statement suggesting that the value of its shares was $5.00 greater than it really was. This is an understandable reaction and there may be good reasons to find this misstatement to be a Rule 10b-5 violation as materially false, triggering SEC or DOJ enforcement action. Nevertheless, making the misstatement did not distort price and those who purchased between the time of the misstatement and the truth coming out suffered no loss because they would have paid the same price amount as if the issuer had stayed silent and avoided the violation. It is hard to see how persons who cannot show that the misstatement induced them into the purchase (i.e., those who cannot establish traditional reliance) can claim to be damaged. Nothing in this is changed by judicial assertions to the effect that once an issuer has chosen to speak about a matter, it has a duty to reveal the whole truth.[52]

B. The Corrective Disclosure's Price Impact as a Proxy for the Misstatement's Inflationary Effect

The alternative proxy for measuring a misstatement's inflationary effect is the price impact of its corrective disclosure: the difference between the actual observed price change from the day before the corrective disclosure and the net contribution to the observed price change from every other piece of news during that twenty-four-hour period.

1. The underlying logic. As noted earlier, the idea of using the corrective disclosure's price impact as the proxy is that any decrease not due to these other pieces of news is the market's reaction to the truth coming out: in an efficient market, the corrective disclosure would eliminate any inflation in price caused by the misstatement and so the price drop represents the amount of inflation eliminated. Compared to the misstatement's price impact, the corrective disclosure's price impact has the positive feature of including any portion of the inflation that represents what would have been a negative inference from silence. But, as with the misstatement's price impact, this proxy too has reliability problems.

2. Understating the misstatement's inflationary effect. One such potential problem is that the market may have become totally or partially aware of the truth prior to the announcement of a formal corrective disclosure. In that case, the corrective disclosure's price impact would be zero or at least some amount less than the misstatement's inflationary effect. Obviously, however, if this were the only problem with this proxy, then, in any given case, should the corrective disclosure's price impact nevertheless be greater than the inflation threshold, this would unambiguously show that liability should be imposed.

3. Overstating the misstatement's inflationary effect. Other potential problems with using the corrective disclosure as the proxy work in the opposite direction and result in it overstating the misstatement's inflationary effect.

a. The issuer's announcement includes other negative news. One frequent problem working in the opposite direction is where the disclosure that the plaintiff alleges corrects the misstatement contains as well additional negative news that management did not know at the time of the misstatement. In that case, the corrective disclosure's price impact will appear to be larger, sometimes much larger, than the misstatement's inflationary impact. That does not necessarily make it useless because there may be ways of at least roughly estimating the price impact of this

52. *See supra* notes 17 and 37.

additional information. However, where there is reason to believe that this additional information would swamp the price impact of eliminating any inflation caused by the misstatement, and no good way of estimating the price impact of this other information exists, the corrective disclosure's price impact cannot be considered a reliable proxy. The U.S. Supreme Court expressed just this concern in the recent *Goldman Sachs* case, where it said:

> [T]hat final inference—that the back-end price drop equals the front-end—starts to break down when there is a mismatch between the contents of the misrepresentation and the corrective disclosure.[53]

As will be discussed in more detail in Part V, the typical event-driven case constitutes a prime example of this problem: in an efficient market, the occurrence of the disaster will, like an announcement correcting an earlier misstatement, eliminate any inflation still (if ever) in the share price, but the disclosure's price change includes as well the impact of the disaster on the issuer, which is likely many times larger.

b. The corrective disclosure's price impact reflects what would have happened if the issuer had revealed the truth, not just stayed silent. We argued earlier that where the issuer is not required, pursuant to the periodic mandatory disclosure regime, to provide a response relating to the subject matter of the misstatement, the issuer could have avoided illegality simply by staying silent. So the "but for" counterfactual from which the misstatement's inflationary effect should be calculated is what the price would have been if the issuer had instead stayed silent.[54] Assuming that the truth has not already leaked out in part or in whole in advance of the corrective disclosure, its price impact reflects both the difference between the price at the time of the misstatement and what it would have been if the issuer had stayed silent, and the additional difference in price if the issuer instead had affirmatively disclosed the truth. In doing so, it overstates the misstatement's inflationary impact.

53. Goldman Sachs Grp., Inc. v. Ark. Tchr. Ret. Sys., 141 S. Ct. 1951, 1961 (2021). The quoted statement concerned the relevance of the corrective disclosure's price drop in a case relating to whether the no-price-impact rebuttal to the fraud-on-the-market presumption had been established at the class certification stage of the litigation. Our main focus will be on reforming judicial practice with respect to motion-to-dismiss cases on their pleadings. The problem identified by the court is the same in both contexts, however. Separately, another question raised by the Court's statement in *Goldman Sachs* is whether a securities fraud class action with such a "mismatch" between the back-end price drop and the front-end inflation can survive the *Comcast* standard of attribution of damages. In *Comcast*, the Court noted that "[a] model purporting to serve as evidence of damages in [a] class action must measure those damages attributable to [the] theory that supports legal liability—and not to any other theory." Comcast Corp. v. Behrend, 569 U.S. 27, 33 (2013). Courts must evaluate "whether the damage model can adequately connect with the theory of liability" at the class certification stage. This is so, even though damages may not yet be established exactly at that stage, because of the requirement under Rule 23(b)(3) that damages be "susceptible of measurement across the entire class." *Id*. In our view, a similar *Comcast* inquiry may be appropriate at the motion-to-dismiss stage: if the complaint, taken as true, cannot even *allege* a damages theory that satisfies the *Comcast* standard of adequately connecting with the theory of liability, then courts may very well dismiss the case on the pleadings for that reason as well as a failure adequately to allege loss causation.

54. *See infra* Part III.B.6.

As we also discussed, the situation is more complex where the issuer was required, pursuant to the periodic mandatory disclosure regime, to provide a response relating to the subject matter of the misstatement. A strict reading of existing law would suggest that the proper counterfactual is still issuer silence, but a policy-driven more expansive reading might argue for the issuer revealing the truth to be the proper counterfactual. Should the courts consciously adopt this more expansive reading where a mandatory disclosure provision is involved—a matter about which we do not take a position—the fact that the corrective disclosure's price impact reflects the revelation of the truth is a plus, not a minus, relative to the misstatement's price impact. But this plus can still easily be overwhelmed where the corrective disclosure's announcement includes other news that is highly negative, and the typical event-driven suit is a prime example of this problem.

c. The issuer's announcement reflects a decline in the issuer's reputation. There is an additional possible reason why, besides other negative news, a share-price decline accompanying a corrective disclosure may exceed the difference between the price given at the time of the misstatement and what it would have been if the company had at that time affirmatively disclosed the truth (a difference that itself would be greater than the difference if the issuer had simply stayed silent). This would occur if the discovery of a misstatement undermines the credibility of other statements the company has made to the market. In that case, the price decline accompanying a corrective disclosure would include the market's negative revisions in its expectations concerning the company's cash flows based on these now suspect other statements.

Empirical research supports this intuition. Professor Jonathan Karpoff has found that "for each dollar that a firm misleadingly inflates its market value, on average, it loses this dollar when its misconduct is revealed, plus an additional $3.08. Of this additional loss, $0.36 is due to expected legal penalties and $2.71 is due to lost reputation."[55] Similarly, Professor Donald Langevoort has argued that "most stock-price declines that follow a surprise revelation of fraud reflect not only the truth with respect to the specific facts misrepresented or omitted but also a readjustment in expectations regarding other matters on which management was previously thought credible."[56]

Although an exhaustive treatment of reputational damages in fraud-on-the-market class actions is beyond the scope of this Article, two simple points are worth making here. The first is that to the extent that a share-price decline reflects the market's loss of confidence with respect to other statements made by the company, that portion of the share-price decline is not a proxy for the misstatement's inflationary effect. Second, it is important to recognize that the market's loss of confidence is due to management's *decision* to lie, not to the

55. Jonathan M. Karpoff, D. Scott Lee & Gerald S. Martin, *The Cost to Firms of Cooking the Books*, 43 J. Fin. & Quantitative Analysis 581 (2008).

56. Donald Langevoort, Basic *at Twenty: Rethinking Fraud-on-the-Market*, 2009 Wis. L. Rev. 151, 183 n.40; *see also* Barbara Black, *Reputational Damages in Securities Litigation*, 35 J. Corp. L. 169 (2009).

information content of the lie itself. This decision is akin to any other managerial decision that is harmful for the company and leads to a share price decline as its implications become clear. Thus, the relevant question is whether this bad decision is serious enough to be a fiduciary duty breach. If so, it is properly the subject of a derivative suit, not a securities fraud class action. The typical misstatement is generally not part of an effort to inflate share price by developing a fake "brand" for honesty, integrity, and probity—rather, it is intended to make the future expected cash flows of the firm affected by the subject matter of the misstatement look better than management knows them to be.

In sum, whichever approach is chosen—focusing on the price change for the day the misstatement is announced or focusing on it for the day the corrective disclosure is announced—potential problems may result in the announcement's price impact not equaling the misstatement's inflationary impact.

C. Imprecision in Measuring the Misstatement's and Corrective Disclosure's Price Impacts

A second problem in measuring a misstatement's inflationary effect is that neither proxy, even when it is reliable, can be observed directly. A variety of kinds of news affects an issuer's share price every day. The change in price from the day before, what can be directly observed, is the product of both the impact, if any, of the misstatement's or corrective disclosure's announcement and the net impact of all the other pieces of news relevant to predicting an issuer's future cash flow arriving that day. The price impact of the announcement is the actual observed price change minus the net price impact of all these other pieces of news. This net price impact of everything else can only be estimated, typically by use of the event study methodology.

1. Application of event studies to determine whether the misstatement's or corrective disclosure's price impact was meaningful. Courts generally require a plaintiff seeking to establish loss causation to introduce expert testimony based on an event study of the observed market-adjusted price change on the day of the misstatement's or the corrective disclosure's announcement. The study's results must show that the price change, after adjustment for what was happening in the market as a whole, be in the proper direction (positive for the day of the misstatement, negative for the day of the corrective disclosure) and be large enough to satisfy the 95 percent two-tailed statistical confidence standard.[57]

This standard means, according to event study methodology, that at most only 2.5 percent of the time would liability be triggered where the announcement, if it

57. *See, e.g.*, Fener v. Operating Eng'rs Constr. Indus. & Miscellaneous Pension Fund (Local 66), 579 F.3d 401, 409 (5th Cir. 2009); *In re* REMEC Inc. Sec. Litig., 702 F. Supp. 2d 1202, 1266, 1275 (S.D. Cal. 2010); *In re* Imperial Credit Indus., Inc. Sec. Litig., 252 F. Supp. 2d 1005, 1015–16 (C.D. Cal. 2003), *aff'd sub nom.* Mortensen v. Snavely, 145 F. App'x 218 (9th Cir. 2005); *see also* Michael J. Kaufman & John Wunderlich, *Regressing: The Troubling Dispositive Role of Event Studies in Fraud Litigation*, 15 Stan. J.L. Bus. & Fin. 183 (2009) (concluding that an event study has become mandatory for a securities class action case to proceed).

could have been measured precisely, would be seen to in fact have had no effect on price in the proper direction.[58] This rate of false positives is often referred to as the Type I error rate.

Given this cap on the Type I error rate, the likelihood that liability is *not* triggered when the announcement in fact *does* have a price effect in the proper direction (what is often referred to as the Type II error rate) depends on the actual size of the announcement's price impact and how volatile the issuer's market-adjusted price changes tend to be.[59] The larger the actual impact, all else equal, the lower the Type II error rate and the greater the likelihood that liability will be imposed.[60]

58. An event study is an established tool in financial economics that can provide a probabilistic estimate as to whether a given item of news has had *any* effect on the price of a share. The first step in assessing whether the announcement had any impact on price is to adjust the share's observed price change from the day before by trying to take out the effect of any news that affects the market as a whole. After this first step has been taken, the mere fact that this market-adjusted price change was positive on the day of the misstatement or negative on the day of the corrective disclosure does not prove that the announcement had any effect on price. This is because lots of other news specifically relevant to the issuer also arrived that day as well. So instead the question is how unusual would it be that the observed-market-adjusted price change was due solely to the net effect of the day's *other* bits of firm-specific news and thus not in any part due to the announcement. This determination is made by comparing the magnitude of the market-adjusted change in the issuer's share price on the day of the announcement with the historical record of the daily, market-adjusted ups and downs in the issuer's share price. Some of these changes will be relatively large and many more relatively small but the overall pattern will resemble a normal distribution with a mean near zero. From this series of changes, a standard deviation can be calculated, which is assumed to be the standard deviation of the normal probability distribution that on the announcement day generated the net price impact of all the firm-specific news other than the announcement. This net price change from all the other firm-specific news will be within 1.96 standard deviations of the mean 95 percent of the time, with it being outside this range on the positive side 2.5 percent of the time and on the negative side 2.5 percent of the time. So, even if the corrective disclosure had absolutely no effect on price, it is still possible for us to observe a price change more negative than –1.96 percent, but it would only happen 2.5 percent of the time. Thus, requiring that the market-adjusted price change meet the 95 percent and be in the indicated direction (positive for the day of the misstatement, negative for the corrective disclosure) for the conclusion that the announcement has *any* inflationary price impact, in essence is a requirement that the Type I error rate, as measured by this methodology, be less than 2.5 percent. For a more detailed discussion of these points, see JOHN Y. CAMPBELL ET AL., THE ECONOMETRICS OF FINANCIAL MARKETS 149–80 (1997); Fox, *supra* note 16, at 442–47.

59. Fox, *supra* note 16, at 447.

60. *Id*. This discussion of the consequences of imprecision also sheds light on a question that might arise concerning our explication of the need for some minimum threshold. Suppose a very large *issuer* makes a misstatement with only a small inflationary effect on a per share basis. It could be argued that the misstatement's damage to the economy's overall efficiency would be at least as great as a misstatement with a much larger inflationary effect made by a much smaller issuer. If so, the argument goes, it would be as socially beneficial for the suit based on the larger firm's misstatement to succeed as it would be for one based on the smaller firm's misstatement to succeed, a result that some minimum *percentage* threshold might block. This argument might make sense if we could measure precisely a misstatement's inflationary effect. Where there is imprecision, however, any procedure that would regularly allow imposition of liability where the misstatement of a large issuer in fact had percentage-wise only a very small inflationary impact would also often impose liability where the misstatement of such an issuer in fact had no inflationary impact, a socially undesirable result.

This point is also a response to any argument that there is no need for a minimum threshold because, although a suit involving a misstatement with a small inflationary impact is as complicated as a suit involving a misstatement with a large inflationary impact, the plaintiff and defendant will each devote less resources to fighting the first one. Suppose, as would be the case without a minimum

2. How the event study's statistical significance cutoff suggests an implicit inflation threshold. The procedures described above that courts rely on to determine loss causation—whether the announcement is accompanied by a market-adjusted price change large enough whereby at most only 5 percent of the time would such a price change in this direction be seen if it were due entirely to other news—does not on the surface sound exactly like the stripped-down model's procedure of imposing liability only if a reliable proxy for the misstatement's inflationary effect is greater than some set percentage of the issuer's share price. But the stripped-down model as described above involved a world where the misstatement's inflationary effect could be measured precisely. In the real world, where that is not the case, the event study approach used by the courts is roughly analogous to the stripped-down model and yields a crude kind of implicit inflation threshold.

To see this, take an issuer with a market-adjusted price volatility equal to that of the average issuer in a normal year. Let us compare (a) the likelihood that the results of an event study would satisfy the 95 percent confidence standard where the announcement under study in fact has a 5 percent impact on price, with (b) the likelihood of their satisfying this standard if the misstatement in fact has a .5 percent impact on price.

It is very likely—four times out of five—that the announcement that actually had a 5 percent impact on price would be associated with a market-adjusted price change large enough to satisfy this 95 percent confidence standard and hence trigger liability.[61] In contrast, it is very unlikely—only one time in twenty-two—that an event study of an announcement that actually had only a .5 percent impact on price would be associated with a market-adjusted price change large enough to meet this standard and hence trigger liability.[62]

threshold, there is a significant chance that a suit involving a large issuer's misstatement with in fact no inflationary effect nevertheless subjects the issuer to liability due to the various sources of imprecision in assessing this effect. Substantial resources would then be drawn into litigating suits where there was no social benefit.

61. Edward G. Fox, Merritt B. Fox & Ronald J. Gilson, *Economic Crisis and the Integration of Law and Finance: The Impact of Volatility Spikes*, 116 Colum. L. Rev. 325, 356 (2016). This calculation concerning an announcement that in fact had a 5 percent inflationary effect is made in the same way as the calculation, set out in *infra* note 62, for an announcement that in fact had a .5 percent inflationary effect.

62. This calculation involves the distribution of possible observed values of the market-adjusted price change if the actual market-adjusted price impact of the announcement is .5 percent and is in the appropriate direction. The distribution of observed market-adjusted price changes accompanying an announcement with an actual impact of .5 percent will approximate a normal distribution with a mean of .5 percent (in the appropriate direction). The average corporation in normal times has a share price volatility, as measured by the standard deviation of historic daily market-adjusted price changes, equal to 1.78 percent, representing the effect, plus or minus, of the other ordinary bits of firm-specific information that move the issuer's share price around every day. *Id.* at 356. Since the observed change in prices will be considered statistically significant at the 95 percent level and be in the appropriate direction only if it is a change in that direction of more than 3.49 percent, the question becomes: What are the chances that the observed market-adjusted price change the day of the announcement will be at least this great? The required observed price change of 3.49 percent is greater than the announcement's actual price impact by 2.99 percent or 1.68 standard deviations. This means that the requirement will only be met if the net impact of all other firm-specific news the day of the announcement is positive 1.99 percent, which the historical record of the issuer's

D. Three Simple Rules of Thumb for Adjudicatory Design

The foregoing analysis yields three simple rules of thumb relevant to structuring the process for adjudicating fraud-on-the-market claims. Consider again a case where the plaintiff establishes all the other requirements for imposing liability: an issuer whose shares trade in an efficient market made a misstatement with scienter and the plaintiff purchased shares of the issuer very soon after the misstatement and still holds them at the time of the corrective disclosure. So, in accordance with the stripped-down model of the fraud-on-the-market action, imposition of liability should depend simply on whether the plaintiff can show that the misstatement's inflationary effect is great enough, from a social welfare point of view, to merit this result.

In fashioning these rules of thumb, we will assume, realistically we believe, that it is easily determinable whether circumstances suggest that the market likely would have drawn a meaningful negative inference if the issuer had instead stayed silent, but that it is difficult to assess how great the negative inference's price impact would have been because this counterfactual did not occur.

For each of these rules, the analysis starts with what the answer would be in a world where the price impacts of the misstatement and the corrective disclosure can be measured precisely. In that world, the outcome dictated by the rule depends simply on the respective reliability of the two proxies. Then the analysis will be modified to reflect the fact that the price impact of each proxy cannot be measured precisely and is instead measured indirectly through the use of an event study, with the question for imposing liability being whether the misstatement or corrective disclosure was accompanied by a market-adjusted price change large enough to meet some given level of statistical significance.

1. Rule 1: Liability should be imposed where the misstatement's price impact appears to be at least as great as the inflation threshold. Consider first the world in which a misstatement's price impact can be measured precisely. Where that price impact is at least as great as the inflation threshold, there can be no question that the misstatement had an inflationary effect that is at least as great as the inflation threshold. This is because a misstatement's price impact is the lower bound of what its inflationary effect can be and so the misstatement's inflationary effect must be at least as great as the inflation threshold.[63] Accordingly, liability should be imposed. The corrective disclosure's

market-adjusted price changes occurs only occasionally. Based on the assumption that the price impact of this other news is normally distributed with a standard deviation of 1.78 percent, there is only a 4.6 percent chance, or about one chance in twenty-two, that the observed market-adjusted price change will be in the appropriate direction and be greater than 3.49 percent, what would be required for it to be considered statistically significant at the 95 percent level in a two-tailed test. In other words, the Type II (false negative) error rate will be 95.4 percent.

63. If the market does not draw any negative implications from the issuer's silence, the misstatement's price impact just equals its inflationary effect. If the market does draw such negative implications, the price effect of these implications would be added to the misstatement's price impact to get its inflationary effect. To state this point more formally, using the notation and calculations from *supra* notes 49 and 50, IE = PI + NI. So PI = IE – NI. Since NI ≥ 0, IE ≥ PI.

price impact can add no new information and so it is irrelevant whether it is larger or smaller than the inflation threshold.

Now let's translate this rule into the real world where the misstatement's price impact, rather than being measured precisely relative to an inflation threshold, is assessed by an event study where the question for imposing liability is whether the misstatement was accompanied by a market-adjusted price change great enough to meet some cutoff level of statistical significance, which in essence indirectly forms a crude inflation threshold. Because, in a world of probabilistic assessment where harm from both Type I and Type II error needs to be considered, meeting this cutoff is the rough equivalent to meeting the inflation threshold in a world of precise measurement, the logic of the analysis of the precise measurement world carries over. So, where the market-adjusted price change accompanying the misstatement was large enough to meet this statistical cutoff, liability should be imposed.

To illustrate this rough equivalence, for the average issuer in ordinary times with the cutoff for statistical significance set at the 95 percent, if there were no negative inferences from silence, liability, as we have seen, would be imposed four times out of five if the misstatement's price impact was actually 5 percent, and only one time in twenty-two if the misstatement's price impact was only .5 percent.[64]

2. Rule 2: Liability should <u>not</u> be imposed where (i) the misstatement's price impact appears to be smaller than the inflation threshold, and (ii) the market would <u>not</u> have drawn negative inferences from silence. Under these circumstances, in a world where the misstatement's price impact can be measured precisely, the misstatement cannot have had an inflationary effect as great as the inflation threshold. This is because the alternative explanation for the misstatement not having a positive price impact that great—that the misstatement maintained expectations that would not have been maintained if the issuer had stayed silent—is unavailable.[65] Accordingly, liability should not be imposed. Again, the corrective disclosure's price impact can add no new information and so it is irrelevant whether it is larger or smaller than the inflation threshold.

The logic of the precise measurement world again, at least largely, carries over to the probabilistic assessment one. This suggests that, without further inquiry into the misstatement's inflationary effect, no liability should be imposed where the market-adjusted price change accompanying the misstatement does not meet the cutoff for statistical significance and there is little reason to think that the market would have made negative inferences from silence.[66]

64. *See supra* Part IV.C.2.

65. To state this point more formally, again using the notation and calculations from *supra* notes 49 and 50, IE = PI + NI. Call the inflation threshold IT. Where, as assumed in the text, PI < IT and NI = 0, then IE = PI + 0 < IT.

66. An argument can be made that for the probabilistic estimate world, in cases where the corrective disclosure's price impact is deemed a reliable proxy, the magnitude of the price change accompanying that disclosure should be taken into account for determining whether liability should be imposed. The idea would be that this price change represents some kind of second sampling of the size of the misstatement's inflationary effect. Thus, if, individually, the price change accompanying the misstatement

3. Rule 3: Where (i) the misstatement's price impact is less than the inflation threshold, but (ii) the market would have drawn negative inferences from silence, liability should be imposed if and only if the corrective disclosure's price impact is a reliable proxy and appears to be at least as great as the inflation threshold. Under these circumstances, the misstatement's price impact simply cannot tell us whether the misstatement's inflationary effect was or was not at least as great as the inflation threshold. This suggests that our attention needs to shift to whether instead the corrective disclosure's price impact is a reliable proxy for the misstatement's inflationary effect, and, if so, whether it appears great enough to merit imposing liability.

a. When the corrective disclosure's price impact is a reliable proxy. In the world where the corrective disclosure's price impact can be measured precisely, if it is a reliable proxy and is at least as great as the inflation threshold, then the misstatement's inflationary effect was that great and liability should be imposed. Under the same logic, where the corrective disclosure's price impact is not at least as great as the inflation threshold, the plaintiff's suit should fail because neither proxy can be used to show that the misstatement's inflationary effect was at least as great as the inflation threshold.

Again, the logic of the precise measurement world largely carries over to the real world where the corrective disclosure's price impact can only be estimated probabilistically. Accordingly, where the market-adjusted price change accompanying the corrective disclosure was great enough to meet the cutoff for statistical significance, liability should be imposed. Where it is not that great, neither of the two available proxies can be used to show that the misstatement's

and the price change accompanying the corrective disclosure each was not great enough to be statistically significant at some given level such as 95 percent, their joint distribution might be statistically significant at that level, which would suggest that liability should be imposed.

In theory, this argument has a point, but we are skeptical that performing the joint statistical test would be worthwhile. To start, as we have seen, the potential problems with the reliability of the corrective disclosure as a proxy are likely to be very common. Bias is introduced that helps defendants to the extent that some or all of the inflation has already dissipated before corrective disclosure, and bias is introduced that helps the plaintiff to the extent the corrective disclosure contains negative information beyond what would neutralize any remaining inflation that arose from the misstatement vis a vis the counterfactual of the issuer staying silent. So the reliability of the corrective disclosure's price impact as a proxy is more a matter of degree, with the question instead being how unreliable must it be to be too unreliable to use. In contrast, where there is little reason to think that the market would make negative inferences from silence, the misstatement's price impact involves no bias. Another reason for skepticism is that understanding the statistical analysis used to determine whether one proxy is large enough to be significant already strains the capabilities of the fact-finders in the legal process (a jury, or a judge in a bench trial), and this strain would be that much greater if the more complicated question of joint probabilistic distribution of the two proxies needed to be understood. Certainly, the current near universal default to using the corrective disclosure as the lone proxy does not suggest much judicial receptivity for a joint analysis. And in the mirror situation where the misstatement's price impact is unreliable because the market likely would make negative inferences from silence, plaintiffs would often object to a joint analysis because in many such cases the market-adjusted price change accompanying the misstatement is small or non-existent. In any event, this argument has no applicability where the corrective disclosure's price impact was clearly unreliable, which is typically the case in event-driven litigations, as will be discussed in more detail in Part V.

inflationary effect was sufficiently great to merit imposition of liability, and so liability should not be imposed.[67]

b. When the corrective disclosure's price impact is not a reliable proxy. Under these circumstances, in the precise measurement world, again the plaintiff will be unable to show, using either of the two available proxies, that the misstatement's inflationary effect was at least as great as the inflation threshold. The misstatement's price impact does not do the job because it is too small, and the corrective disclosure's price impact does not do the job because it is not reliable. In the real world of probabilistic assessments of the misstatement's price impact, similar reasoning leads to the same conclusion. Neither proxy demonstrates that the misstatement's inflationary effect is sufficiently great to merit imposition of liability: the price change accompanying the misstatement is not great enough to meet the statistical significance cutoff and the corrective disclosure's price impact is not a reliable proxy.

E. Implications of the Three Simple Rules for Adjudicatory Design

These three simple rules are derived from all that precedes them in this Article: an analysis that goes back to the basic logic behind the fraud-on-the-market cause of action and exploring what that logic implies as to when liability should and should not be imposed from a social welfare perspective. Relative to current practice, these rules suggest that there should be more focus on the price change at the time of the misstatement, a point that will be more fully examined in Part VI. It is worthwhile to set out the main points now, however.

1. The fallacy of regarding the corrective disclosure's price drop as the source of the plaintiff's loss. One reason that current practice underemphasizes the misstatement's price change is that courts often speak as though the price drop at the time of the corrective disclosure is the source of the plaintiff's "loss." As we will see, a prime example is some confusing language in the U.S. Supreme Court's opinion in *Dura Pharmaceuticals, Inc. v. Broudo*.[68] The plaintiff's loss, however, really comes from paying too much due to the misstatement and not recovering this overpayment through a sale before the inflation disappears. Making the corrective disclosure is not the Rule 10b-5 violation, the original misstatement is, and so the misstatement is the illegal action that leads to a possible loss.

The efficient market hypothesis guarantees that when a misstatement is corrected, any inflation that it created and still remains will immediately dissipate.

67. For reasons akin to those explored in *supra* note 66, an argument could be made that in these circumstances, the joint probability distribution of the market-adjusted price change accompanying the misstatement and the market-adjusted one accompanying the corrective disclosure should be explored to see if together they suggest that the misstatement's inflationary effect is large enough to merit imposition of liability. For largely the same reasons as is explored in the note above, however, we are skeptical that it would be desirable to structure the adjudicatory process to require this joint statistical test.

68. 544 U.S. 336 (2005). *See infra* Part VI.A.2.

Hence the hypothesis guarantees that each investor suffers a loss who still holds shares that she purchased while there was any inflation in their price. This means that there is no need to look to the price change at the time of the corrective disclosure to see whether such an investor suffered a loss. The key question is whether the misstatement in fact sufficiently inflated the share price in the first place. To answer this question, there is no need to look beyond the market-adjusted price change accompanying the misstatement to the one accompanying the corrective disclosure unless (i) the misstatement's market-adjusted price change, even if positive, is too small on its own to justify imposition of liability, (ii) there is reason to believe the market would have drawn negative inferences if the issuer instead stayed silent, *and* (iii) there is reason to believe that corrective disclosure's price impact would be a reliable proxy for the misstatement's inflationary effect.

2. Overly broad use of the price maintenance theory. A second reason that current practice underemphasizes the misstatement's price change is that courts engage in what we believe is an overly broad use of the so-called "price maintenance" theory, a doctrine whereby the lack of a substantial market-adjusted price increase at the time of the misstatement is excused and attention instead goes to whether there was a substantial market-adjusted price drop at the time of the corrective disclosure. As illustrated by Rule 3, the doctrine definitely has a function. Moreover, the courts, when they address the matter, correctly characterize the proper place for its application as one where the misstatement prevents the price from dropping. But a misstatement cannot have prevented the price from dropping unless there is reason to believe that there would have been some kind of negative reaction if the misstatement had not been made. A price drop at the time of the corrective disclosure cannot show this because negative news will have that effect whether or not earlier silence concerning it would have led to negative inferences.

The price maintenance theory's switch to focus on this price drop, therefore, can only be justified when circumstances suggest there would have been such a negative reaction to silence. Some cases involve such circumstances, but others do not. The courts, however, generally apply the theory without making an inquiry as to whether, in any given case, such circumstances do in fact exist. This is an important oversight because at least implicitly the price maintenance theory is applied in almost every fraud-on-the-market case, as we will see in Part VI. Rarely is any price increase at the time of the misstatement even alleged and rarely is its presence or absence discussed in published fraud-on-the-market cases. This is unfortunate because in any case where the market would not have made negative inferences from silence, the misstatement's price impact is a perfect proxy for its inflationary effect whereas the corrective disclosure's price impact, as just discussed, is often biased one way or the other. The plaintiff has the burden of demonstrating price inflation. Thus, for the corrective disclosure to be considered as a possible alternative proxy, the plaintiff should be required to show there is reason to believe that if, instead of making the misstatement, the issuer had stayed silent, the market would have drawn negative inferences from the silence.

3. The value of the three simple rules for the early resolution of cases where the plaintiff will not plausibly be able to prove that a misstatement's inflationary effect is sufficient to merit imposition of liability. As noted in the introduction to this Part, the adjudicatory process should be designed such that, at each stage, the suit can be terminated with no damages owing from the defendant if, given what is known at that stage, the likelihood of a false negative—throwing out a suit where the misstatement's inflationary effect was in fact greater than the threshold—is sufficiently low that continuing the suit is on balance not socially worthwhile. The first stage to which this principle applies is the motion to dismiss, a point that precedes most of what makes securities litigation expensive. So, if based on what is known at that time, the likelihood of such a false negative is very low, the process should be designed to result in the dismissal of the suit involved. However, as will be discussed in detail in Part VI, under current practice, many suits meeting this criterion, including in particular many event-driven ones, are not terminated at this stage. This could be corrected if the substantive law and pleading standards were adjusted to reflect what is suggested by the three simple rules set out above.

For now, briefly consider just one example involving an event-driven suit. Suppose that the observed price change the day of the misstatement is at most very modestly positive and the overall market went up that day. No further information is necessary to conclude that it is very unlikely that the plaintiff will be able to introduce into evidence a competently performed event study showing a statistically significant market-adjusted price increase on that day. This conclusion immediately takes us to Rules 2 and 3 without the need to run an event study. Suppose as well that, as would be the case with the typical event-driven suit, the negative impact on the issuer from the disaster is many times whatever amount, if any, that the misstatement plausibly inflated price. Even if there are good reasons to believe that the market would have made a negative inference if the issuer had stayed silent, thereby avoiding the suit being knocked out by Rule 2, Rule 3 will dictate that liability not be imposed because the price change accompanying the corrective disclosure is an inherently unreliable proxy. This is because, while the corrective disclosure will eliminate any inflation from the misstatement still (if ever) in the share price, the price change accompanying the disclosure will also reflect the impact of the disaster on the issuer, which in the typical such suit is many times larger.

The information in this example would be easily available at the time of the motion to dismiss. Thus, there would not be plausible grounds to infer that the plaintiff will be able to introduce evidence that would result in liability being imposed under these three simple rules. So, the suit should be terminated at this early point. In essence, no typical event-driven suit should make it past the motion-to-dismiss stage unless, on the day of the misstatement, the issuer's share price change, relative to the market, suggests a meaningful chance that the plaintiff will be able to introduce into evidence at trial a competently performed event study showing a statistically significant market-adjusted price increase.[69]

V. Implications for Event-Driven Suits

This Article was prompted by the rise of event-driven suits. So a good next step is to take what we have learned from our social welfare analysis of the stripped-down economic model and the lessons that analysis provides for the proper design of the adjudicatory process and see how they apply in particular to the typical event-driven suit. Throughout this Part, our focus will continue to be on the aspects of the litigation related to determining whether the misstatement's inflationary effect was large enough to justify imposition of liability. Thus, we will again assume that we are dealing with an issuer that has made a misstatement with scienter and that the plaintiff purchased her shares shortly after the misstatement was made and was still holding them at the time of what the plaintiff claims is the corrective disclosure.

A. The Typical Event-Driven Suit

An event-driven suit is typically triggered by an issuer announcing the occurrence of some kind of disaster. Examples would be a physical catastrophe at the issuer's facilities, a major government investigation of, or prosecution against, the issuer, or a serious defect in one of its major products. This announcement is immediately followed by a sharp drop in the issuer's share price.

The plaintiff claims that the disaster announcement is the corrective disclosure for some earlier misstatement that suggested that the likelihood of this disaster was nonexistent or less than it really was. The misstatement may have stated or implied, for example, that the issuer had undertaken some action that would have reduced the likelihood of the disaster when in fact it had not undertaken this precaution. Alternatively, the misstatement may have been a public assessment of the likelihood of such a disaster that suggested that its likelihood was lower than the issuer in fact knew to be the case. At the end of this Part, we review six apparent event-driven cases. In none of them is there an allegation that the misstatement itself was accompanied by a meaningful share price increase, rather, each instead alleges a sharp price drop accompanying the disaster announcement.

B. The Reliability of the Misstatement's and Corrective Disclosure's Price Impacts as Proxies for the Misstatement's Inflationary Effect

A misstatement's inflationary effect is not directly observable because it depends on a counterfactual that did not occur. So, to estimate whether it is

69. As will be discussed in *infra* Part VI.B.2.a, an exception would be made if the plaintiff alleges that such an event study in fact has already been conducted.

large enough to merit imposing liability, we need to turn to estimates of one of the inflationary effect's two available proxies. That in turn raises the question of the reliability of each. The ultimate conclusion from the exploration of this question below is that if Rules 1, 2, and 3 were to govern, most event-driven suits would not survive a motion to dismiss unless, relative to the market, there was a meaningful price increase accompanying the alleged misstatement.

1. The misstatement's price impact. If the circumstances suggest that the market would not have made a negative inference had the issuer stayed silent instead of making the misstatement, the misstatement's price impact is a perfect proxy for its inflationary effect. The sample of event-driven suits reviewed in the last section of this Part suggest that they often involve such circumstances. In most of these cases, the situation is not one where the misstatement relates to a matter with respect to which a response one way or another is required by the mandatory disclosure regime. The misstatement is also not a response to a question from an analyst or the media representative. Nor does it involve a situation where the misstatement preemptively answers an analyst or media question very likely to be asked in the near future. Rather, it is a quite unremarkable statement to the effect that the company is doing something that any well-run company would do under the circumstances, and indeed, many similar firms may not say anything addressing the issue. So if the issuer that is subject to the suit had not said anything with regard to the matter, its silence would have been unlikely to have raised an eyebrow.

For such a case, Rules 1 and 2 suggest that the size of market-adjusted price change accompanying the misstatement should be determinative. If the change is large enough to be statistically significant at the chosen cutoff level, liability should be imposed. Otherwise it should not.

As will be discussed in more detail in Part VI, these conclusions have important implications for the termination of suits at the motion-to-dismiss stage. Suppose there was not, relative to the market, a meaningful share price increase accompanying the misstatement. This will mean that the plaintiff will not be able to plead facts constituting plausible grounds to infer that it will be able to introduce at trial a convincing event study showing that this price change was large enough to be statistically significant at the cutoff confidence level. If Rules 1 and 2 were to govern, most such cases would not survive a motion to dismiss. This is because, as noted just above, for the misstatement in the typical event-driven case, the plaintiff also will be unable to plead facts constituting plausible grounds to infer that the market would have drawn a negative inference if the issuer had instead stayed silent.

2. The corrective disclosure. Suppose instead that although the price change accompanying the misstatement is not large enough to be statistically significant, the circumstances suggest that the market *would* have made a negative inference had the issuer stayed silent instead of making the misstatement, and there is not a statistically significant market-adjusted price increase change accompanying the misstatement. Then, attention needs instead to shift to Rule 3. In most event-driven cases, as discussed below, the price change accompanying the announcement that the plaintiff characterizes as the corrective disclosure will not be a reasonably reliable proxy. Under Rule 3, if the corrective disclosure's price impact is not a reasonably reliable proxy for the misstatement's inflationary effect, liability should not be imposed even when the price change accompanying the corrective disclosure is large.

Recall that a corrective disclosure's price impact should not be considered reasonably reliable if the announcement incorporating it substantially overstates the misstatement's inflationary effect by also including additional highly negative news that management did not know at the time of the misstatement. Event-driven suits raise a special problem here. The announcement that the plaintiff characterizes as a corrective disclosure is typically the revelation of some disaster that has befallen the company, not an explicit correction of an earlier misstatement.[70] The alleged misstatement relates to a risk of this negative event where the odds of it occurring typically are small but, if it does, the consequences are large. When, despite the low odds, the risk does materialize, the impact on share price of the fact that the company has suffered this setback is likely to be overwhelmingly larger than the amount, if any, by which the misstatement had previously inflated price by leading the market to underestimate the risk. The disaster announcement will eliminate from price the misstatement's inflationary effect to the extent that it still persists immediately prior to the disaster's announcement. In this sense, it will work in the same way as a corrective disclosure because any misstatement-driven underestimate of the risk of the disaster that has been buoying price prior to the disaster's occurrence will no longer buoy price once news of the disaster reaches the market. In most circumstances, however, it will be impossible to unravel what portion, if any, of the disaster announcement's price impact is due to the dissipation of this price inflation, from the much larger portion that is due to the damage the disaster has done to the firm.

As will be discussed in more detail in Part VI, if Rule 3 were to govern, even most event-driven cases where the plaintiff is able to successfully plead that the market would have drawn a negative inference from silence would be terminated at the motion-to-dismiss stage unless there was an allegation of a meaningful share price increase, relative to the market, accompanying the misstatement. This is because, as just noted, in the typical event-driven case, it will be very hard for the plaintiff to allege facts constituting plausible grounds to infer that the corrective disclosure's price impact would be a reasonably reliable proxy for the misstatement's inflationary effect.

70. Indeed, in the case of the false claim that the precaution had been undertaken, if there was some chance of the disaster even if the precaution had been undertaken, the fact that disaster occurred does not establish that the precaution was not undertaken, and so in this sense the disaster's announcement is not a corrective disclosure at all. The same is true where the misstatement involves a public assessment of the risk of the disaster that is lower than what the issuer knows to be the case unless the misstatement is that there was no risk.

C. A Stylized Example of an Event-Driven Suit

The stylized example set out below can help explore a variety of issues raised by event-driven suits, including the just-discussed problems with each of the two proxies for the misstatement's inflationary effect. In order to make clear how pervasive these issues are, the example uses conservative parameters and assumptions relative to the points that it will be used to make.

1. The scenario and the example's underlying assumptions. A disaster occurs on September 1 that cuts the value of the assets of an issuer, Firm A, which has 100 million shares outstanding, from $5 billion to $4 billion, a $1 billion or 20 percent drop. There was a precaution that Firm A could have undertaken on June 1, but did not, that would have reduced the chance of the disaster occurring from 25 percent to 5 percent.

We will assume for expository simplicity that undertaking the precaution would have cost nothing, that the appropriate discount rate is zero, that no other news affects the value of Firm A between May 31 and September 1, that the market is efficient and knows everything about Firm A except whether it has undertaken the precaution, and that we do not need to work into the calculations the prospect of a fraud-on-the-market suit.

In this scenario, assume that firms facing the risk of this disaster are not legally required to say whether they have undertaken the precaution. Historically, among such firms, 30 percent undertake the precaution and announce this fact. No firms both fail to undertake the precaution and announce that they have not done so. Of the firms that stay silent—the remaining 70 percent—four-fifths undertake the precaution and one-fifth do not. The ones that undertake the precaution but stay silent do so because taking the precaution is simply a good business practice and therefore does not seem worth remarking upon.

The market knows these historical ratios and believes that they will characterize the present period as well. In the present period, if a firm stays silent, the market does not know whether the firm did or did not undertake the precaution, it just knows there is a four-fifths likelihood that it did and a one-fifth likelihood that it did not. The precaution needs to be undertaken on June 1 and the market expects that any firm that will make an announcement as to whether it has undertaken the precaution will do so on this date. The market does not anticipate that any issuer will make a false statement.

2. Market prices of the issuer depending on what it does or does not say or do. Based on the foregoing, we can calculate the market's valuation of Firm A on June 1 depending on a variety of possibilities including, as described in the scenario, Firm A not undertaking the precaution but credibly announcing that it has. Alternative possibilities include Firm A (i) undertaking the precaution and credibly announcing that it has done so, (ii) not undertaking the precaution and credibly announcing that it has not, and (iii) simply staying silent. We can also calculate the market price prior to June 1 and the market's reaction to the news of the disaster on September 1.

a. The issuer truthfully announces that it has undertaken the precaution. If, contrary to the scenario, Firm A undertakes the precaution and credibly announces this to the market on June 1, the market would value Firm A at $5 billion – (.05 x $1 billion) = $4.95 billion, or $49.50 per share.

b. The issuer falsely announces that it has undertaken the precaution. Now suppose, as in the scenario above, Firm A does not undertake the precaution but falsely announces to the market on June 1 that it has. This announcement is fully credible because the market's expectations, based on past history, is that no issuer would make such a false statement. Since the market believes that Firm A did undertake the precaution, it would again value Firm A at $5 billion – (.05 x $1 billion) = $4.95 billion, or $49.50 per share.

c. The issuer truthfully announces that it has not undertaken the precaution. Although contrary to the scenario and the assumptions about firms historically, suppose that Firm A does not undertake the precaution and truthfully and credibly announces this fact to the market on June 1. The market would value Firm A at $5 billion – (.25 x $1 billion) = $4.75 billion, or $47.50 per share.

d. The issuer stays silent as to whether it has undertaken the precaution. If Firm A instead stays silent on June 1, the market will not know whether it has undertaken the precaution. The market would value Firm A as the probabilistically weighted average of the two possibilities. This would be .8 x [$5 billion – (.05 x $1 billion)] + .2 x [$5 billion – (.25 x $1 billion)] = $4.91 billion, or $49.10 per share.

e. The price immediately prior to June 1. Immediately prior to June 1, the market does not know whether Firm A will announce that it is undertaking the precaution or stay silent. The market's valuation of Firm A will thus be the probabilistically weighted average of the value it will assign to Firm A if it announces that it has undertaken the precaution and the value it will assign if Firm A instead stays silent. Thus it will be: .3 x $4.95 billion + .7 x $4.91 billion = $4.922 billion, or $49.22 per share.

f. The issuer announces the disaster. Regardless of whether Firm A undertook the precaution on June 1 and regardless of what it did or did not announce then, when the occurrence of the disaster is announced on September 1, the market will value Firm A at $4 billion, or $40 per share.

3. The example's values of the key conceptual building blocks. Suppose, as in the scenario above, that Firm A falsely announces on June 1 that it has undertaken the precaution and announces the occurrence of the disaster on September 1. From these calculations, we can ascertain a number of relevant figures.

a. The misstatement's inflationary effect with silence as the counterfactual. The misstatement's inflationary effect, it will be recalled, is the difference between what the price was given the misstatement, and what it would have been if Firm A had stayed silent, i.e., $49.50 – $49.10 = $.40 per share, which is 0.81 percent. For an investor that purchases a share on June 1 and still holds it on September 1, this is the amount by which she has been hurt because of Firm A's Rule 10b-5 violation. It is the additional amount she had to pay for the share relative to what she would have had to pay if Firm A had chosen the legal alternative of staying silent, none of which additional payment she will be able to recoup upon resale.

b. The misstatement's price impact. The misstatement's June 1 price impact is the observed price change from the day before minus what it would have been given all other news the day of the announcement. The observed price change would be $49.50 – $49.22 = $.28. Under the assumptions of the example, there was no other news that day and so the impact of other news on the price change would be zero. Thus, the misstatement's price impact would be $.28 – $0 = $.28, which is 0.56 percent or about a third less than its inflationary impact.

The misstatement's price impact is less than its inflationary effect because the market would have made a negative inference if Firm A had instead stayed silent, but not as great a negative inference as if Firm A had told the truth. The price impact is greater than zero because in essence, by making a false statement, Firm A made the market believe it was separate from the pooled equilibrium of precaution takers and non-precaution takers represented by firms that stay silent.

c. The disaster announcement's price impact. The disaster announcement's price impact—what a plaintiff would allege was the corrective disclosure—is the observed price change minus what it would have been given all the other news the day of the announcement. The price on August 31 would have been $49.50 and so the observed price change would be $49.50 – $40.00 = $9.50. Under the assumptions of the example, there is no other news that day (or since June 1) and so the impact of other news on the price change would be zero. Thus, the disaster announcement's price impact would also be $49.50 – $40.00 = $9.50, which is 19.2 percent.

This 19.2 percent figure dwarfs the misstatement's inflationary effect of about 0.81 percent for two reasons. First, it represents the realization of what on June 1 was simply a risk. Whatever Firm A had or had not said on June 1, there was a 75 percent chance that this risk would not be realized. Second, the misstatement just downplays the extent of the risk relative to what would have been the market's misperception if Firm A had avoided violating Rule 10b-5 by staying silent. The misstatement made it appear that there was only a 5 percent chance that the disaster would occur. If Firm A had avoided the violation by staying silent, the market would have inferred from this silence that there was an expected 9 percent risk,[71] not the true 25 percent.

d. The price effect of the misstatement versus affirmatively revealing the truth. The difference between what the price was given the misstatement and what it would have been if Firm A had affirmatively told the truth (not just stayed silent) is $49.50 – $47.50 = $2.00, or about 4.2 percent.

4. Applying to the example the social welfare analysis and Rules 1, 2, and 3. Imagine now that the market does not know everything about Firm A and that

71. The market knows that if Firm A stays silent, there is an 80 percent chance that it nevertheless undertook the precaution and a 20 percent chance that it did not. Thus, the likelihood that a silent firm will experience a disaster is perceived to be (.8 x .05) + (.2 x .25) = .09.

news rains down on Firm A's share price every day, moving it up and down, to the extent of the average U.S. corporation in normal times. For expository simplicity and without loss of generality for the points being made, assume, however, that over the three months between the misstatement and the disaster the good and bad news just balance out so that the price on August 31 is the same as on June 1, i.e., $49.50, that the market as a whole was flat between its August 31 and September 1 close, and that, between June 1 and the disaster announcement, the market has learned nothing new about the likelihood of a disaster befalling Firm A.

a. Social welfare analysis. Consider first the social welfare analysis. As we have discussed, the courts have not established an explicit inflation threshold, but the fact that it requires a market-adjusted price change that is statistically significant for a two-tail test at the 95 percent confidence level strongly implies that 0.81 percent is below that threshold, i.e., below the level at which courts think imposing liability is socially worthwhile.[72]

b. Applying Rules 1, 2, and 3. If Rules 1, 2, and 3 were to govern the adjudicatory process for fraud-on-the-market suits, the suit would be terminated at the earliest possible stage. To see why, there are two points to note. First, it is unlikely that the price change accompanying such a misstatement will be large enough, relative to the market's price change that day, to be considered meaningful. We will discuss more in Part VI exactly what "meaningful" means, but the underlying concept is that this price change must be large enough to constitute plausible grounds to infer that the plaintiff will be able to introduce at trial a convincing event study showing that the market-adjusted price change was large enough to be statistically significant at the 95 percent confidence level. Here, in the vast majority of cases where the misstatement's price impact is of the size in the example, the observed market-adjusted price change will not be great enough to be considered statistically significant. The misstatement's price impact is $.28, or about 0.57 percent. The chances are only about one in twenty that other company-specific news affecting that day will, on a net basis, be positive, and sufficiently so, that the market-adjusted price change would be statistically significant.[73] So, it is quite unlikely that Rule 1 will be applicable.

72. Assume, contrary to fact, that at least one of the two proxies was reliable, i.e., that the market-adjusted price change at the time of either the misstatement's announcement or at the time of the corrective disclosure's announcement was an unbiased estimate of the misstatement's inflationary effect. An inflationary effect can be considered below the inflation threshold if it is small enough that the announcement would not frequently be accompanied by a market-adjusted price change large enough to satisfy the 95 percent confidence standard. This would be the case with an inflationary effect of 0.81 percent. Using the same calculation method used in *supra* note 62 to calculate the likelihood that the observed change in price would be large enough to meet this standard when the actual inflationary impact was 0.81 percent, the chances that the observed market-adjusted price change the day of the announcement will be large enough to satisfy the 95 percent confidence standard is only 6.7 percent, or about one chance in fifteen.

73. In the example, the misstatement's price impact is 0.57 percent. Using the same calculation method used in *supra* notes 62 and 72, the likelihood is only 5.1 percent, or about one chance in twenty, that, because of other positive news, the observed market-adjusted change in price would be large enough to be considered statistically significant at the 95 percent level.

The second point is that that the market would have made negative inferences had the issuer stayed silent, which means Rule 2 will be inapplicable. The plaintiff might have at least partial knowledge of the circumstances suggesting this to be the case and so will be able to allege facts relating to such circumstances in her complaint. For example, she might know that historically firms that disclose they have undertaken the precaution have in fact actually done so, but that some firms that stay silent have not undertaken the precaution, facts that suggest that the market would have to some extent reacted negatively to silence.

Combining these two points tells us that in most cases with parameters like those of the example, Rules 1 and 2 would be inapplicable and so we would need to turn to Rule 3. The threshold question for Rule 3 is whether the alternative proxy for the misstatement's inflationary effect—the corrective disclosure's price impact—is a reasonably good proxy. The answer is a resounding no, meaning that if these three rules are followed, the plaintiff will lose should the case go to trial. And because this futility is knowable at the time of the motion to dismiss, the motion should, according to ordinary pleading rules, be granted.

The key takeaway is that in such a case, the disaster announcement's price impact is not a reasonably good proxy and that this is knowable at the time of the motion to dismiss. The actors in the adjudicatory process do not know the underlying parameters generating the example. All they can do is observe the price change accompanying the disaster announcement. As demonstrated immediately below, this will not be sufficient to generate a reasonably reliable estimate of the misstatement's inflationary effect. These actors know that Firm A's share price the day before the disaster reflected all publicly available information concerning the future cash flows that would be generated by the firm's assets if they did not suffer the disaster, the future cash flows that would be generated by the firm's assets if they did suffer the disaster, and the extent to which the first cash flow figure should be discounted to reflect the risk (as assessed given the misstatement) that the future instead is the second cash flow figure. These actors also know that Firm A's share price on the day of the disaster announcement reflected all publicly available information, updated by a day, concerning the future cash flows of the firm's assets as damaged by the disaster. This updating news on the day of the disaster announcement would include the occurrence of the disaster and all other news relevant to how much future cash flow the assets would generate. What they do not know with any precision is how the observed price change the day of the disaster announcement was broken up among its three constituent factors. These three constituent factors are the following, the size which we, as readers knowing the parameters of the example, can calculate, but which are not directly observable by participants in the adjudicatory process. As the discussion of these factors will show, it would be impossible to extract the misstatement's inflationary effect from what is observable at the time of the corrective disclosure.

(i) **The negative impact of the difference between the future cash flow that Firm A's assets would have generated if the disaster had not occurred versus what they are expected to generate given that the disaster did occur**. In a case with parameters like the example, this would be \$50.00 – \$40.00 = \$10.00.

(ii) **The positive impact of the fact that there no longer needs to be any discount for what the market perceives to be the possibility of the disaster occurring**. In a case with parameters like the example, the \$50.00 in value of no-disaster future cash flows needs to be discounted by \$.50 to reflect the possibility of disaster (as assessed given the misstatement). Once the disaster occurs, the \$40.00 in value of post-disaster future cash flows does not need this discount. If the issuer had avoided a Rule 10b-5 violation by staying silent—the counterfactual—the \$50.00 would have needed to be discounted by \$.90 instead, meaning that this constituent factor would have been \$.90 instead of \$.50 and the price drop at the disaster's announcement would have been \$.40 less.

(iii) ***The net impact of any other news that day relevant to the firm's future cash flows.*** Given the misstatement, the negative impact of the first two items would be \$10.00 – \$.50 = \$9.50. This is the price impact of what the plaintiff will characterize as the corrective disclosure, i.e., the disaster announcement's price impact. The observed price change is then \$9.50 plus the net effect of this other news, both marketwide[74] and firm-specific. This net effect of the other news is probabilistic in size, roughly a normal distribution with a mean of zero. If the issuer had instead remained silent, the negative impact of the first two items would instead have been \$10.00 – \$.90 = \$9.10 and so the observed price change would have been \$9.10 plus the net effect of this other news, or \$.40 less of a drop.

It is the nature of an event-driven suit that it involves a far-less-than-certain risk of something very bad for the issuer, i.e., the disaster. Thus, if the disaster occurs, the size of the first of these three constituent factors alone almost guarantees that the market-adjusted negative price change accompanying the disaster's announcement will be substantial, one large enough that event studies would unambiguously reveal to be highly statistically significant. All that these event study's results would tell adjudicatory process participants, however, is that it is essentially certain the observed substantial price drop is not entirely due to the third constituent factor, i.e., not entirely due to news unrelated to the disaster.[75] Indeed, it is very likely that the observed market-adjusted price

74. In the example, we have assumed that the market as a whole was flat the day of the corrective disclosure and so the net impact of marketwide news would have been zero.

75. Consider a case with parameters equaling the example and an issuer with a standard deviation of market-adjusted price changes equal to that of the average U.S. issuer, i.e., 1.78 percent (*see supra* note 62). These price changes reflect the near normally distributed probabilistic impact of other news (the third constituent factor). For the observed market-adjusted price change to be considered statistically significant at the 95 percent level for a two-tailed test, the price drop must be 1.96 standard

change will be highly negative and that the combination of the first two constituent factors will dominate the influence of the third.[76]

Even more important, the relevant price change question is how much less positive the second constituent factor is than it would have been if the issuer had not made the misstatement, because that difference is the amount by which the price was still inflated by the misstatement the day preceding the disaster announcement. But that comparison involves the same unobservable counterfactual that forces the search for a reliable proxy in the first place. If the misstatement had been inflating share price prior to the misstatement, the accompanying price drop accompanying the disaster announcement will be larger than if the issuer had stayed silent. But whether the misstatement in fact did inflate price and by how much is essentially unobservable by the event study methodology, which can only address the combined effects of the first two components, not what is usually only a fraction of the smaller of these first two components, against a yardstick based on the standard deviation of the probability distribution of the third constituent.

D. Six Event-Driven Cases Critiqued

We have selected six litigations which, at least at first examination, appear to be event-driven, in order in each case to discuss their facts, to describe (except for PG&E) the judicial treatment of the defendants' motion to dismiss, and to analyze the case in terms of the approach we have developed in this Article, including our three simple rules.

1. *Strugo v. Barclays PLC*. The disaster in the *Strugo v. Barclays PLC* securities class action was the filing of a lawsuit against Barclays by the Attorney General of New York State relating to Barclays' dark pool operations, referred

deviations, which is 3.49 percent or $1.73. The impact of the first two constituent factors (which combined is the disaster announcement's price impact) is $9.50, which translates to 19 percent or 10.7 standard deviations. This means that for the price drop not to be large enough to be deemed statistically significant, the other news would need to have a net positive impact on price of $9.50 – $1.73 = $7.77, which is 15.7 percent or 8.8 standard deviations. Absent some identifiable discreet piece of positive information accompanying the disaster announcement (something that an event study would attempt to factor out), there is essentially no chance other news would be that positive and so no chance that the price drop would not be considered statistically significant.

76. Again consider a case with parameters equaling the example and an average U.S. issuer in normal times and refer to the calculations in the immediately preceding note. Given that the probabilistic impact of other news (the third constituent factor to the observed market-adjusted price change) approximates a normal distribution with a zero mean and a standard deviation of 1.78 percent, 95 percent of the time, other news will not add or subtract more than 1.96 standard deviations, or $1.73, to the disaster announcement's price impact (which equals the combination of the first two constituent factors) so as to result in the observed market-adjusted price change. This means that there would be less than one chance in forty that the third component—the net impact of the other news—would be positive and enough positive that the observed market-adjusted price drop would be less than $7.77 ($9.50 – $1.73), or less than 15.7 percent. Also, because 95 percent of the time the net impact, plus or minus, of the other news (the third constituent factor) is no more than $1.73, there would only be one chance in twenty that, relative to the contribution of the disaster announcement's price impact, it affects the observed market-adjusted price change (the total of all three components) by more than about 18 percent ($9.50/$1.73 = .182).

to as LX.[77] Barclays' ADS (American depositary share) price dropped 7.38 percent on June 25, 2014, the day the New York suit was announced. The class action was brought on behalf of all persons who purchased Barclays' ADSs between August 2, 2011, and June 25, 2014.

The district court denied Barclays' motion to dismiss. The plaintiffs' case was based on a set of statements relating to Barclays' dark pool operations. One such statement was made in January 2013 by the head of Barclays' electronic equities trading division and "attribut[ed] 'LX's success to Barclays' commitment to being transparent regarding Barclay's operations, how Barclays routes its orders, and the kinds of counterparties traders expect to deal with when trading in the dark pool.'"[78] The other statements were in marketing materials for LX, claiming LX had a system for monitoring the "toxicity" of the behavior of individual traders in its dark pool and that they would refuse clients access to the dark pool if a trader was revealed to have engaged in aggressive or "toxic" trading strategies.[79]

The plaintiffs alleged facts suggesting that in fact Barclays permitted "predatory traders" to trade on LX, presumably meaning that when LX's other customers traded on LX, their counterparties would be less desirable than Barclays was suggesting them to be in the alleged misstatements. The court found these allegations to be sufficient with respect to the false or misleading nature of Barclays' statements concerning LX and scienter.

Even if these statements were false or misleading, however, they would not be actionable unless they were materially so. The problem for the plaintiffs here is LX contributed only about 0.1 percent to Barclays' revenues. So even if the truth coming out concerning these alleged misstatements were to lead to the total collapse of the LX business, it would be difficult to characterize the possibility of such a result as "material" to someone considering buying or selling Barclays' stock.

By approaching the question a different way, the court nevertheless finds materiality to have been adequately pled. It points to allegations to the effect that "Barclays had staked its 'long-term performance' on restoring its integrity" after earlier revelations of other scandals, and it concludes that the alleged misstatements about LX "call into question the integrity of the company as a whole."[80] The court suggests that given this context, when management made the misstatement, it did so knowing that there was a risk that the truth would later came out, in which case questions would arise about the integrity of the whole company, making it look significantly less valuable.

This reasoning is unconvincing. In essence, the allegation is that management, by making these statements, undertook an act that, through the risk it created, made the company less valuable, and then stayed silent about what it had done. If management had instead made some operational decision that risked future

77. 105 F. Supp. 3d 330, 339 (S.D.N.Y. 2015).
78. *Id.* at 338.
79. *Id.* at 338–39.
80. *Id.* at 349.

damage and stayed silent about it, the risky act plus silence would not have given rise to a valid fraud-on-the-market claim. This is because there would be no affirmative misstatement and so no Rule 10b-5 violation for staying silent. The same logic should apply where management's value-diminishing act was a misstatement, the making of which risked future harm to the issuer but where the falsity of the misstatement's actual content was immaterial. As for loss causation, the court's opinion denying the motion to dismiss never even considers the adequacy of the plaintiffs' allegations.

Consider how our approach would address this case. Assume that the statements at the center of the case were indeed false or misleading. The remaining issue, in the language of the stripped-down model, is whether these misstatements had a large enough inflationary effect to justify imposition of liability. Two observations are critical here. First, it is very unlikely that if Barclays had not made the alleged misstatements, the market would have made negative inferences from Barclays' silence on the matter. The market may or may not push an issuer's share price up when it brags in the way Barclays did about a particular feature of one of its products, but it is hard to believe it will affirmatively push the price down for not bragging this way absent special circumstances.

Second, it is also very unlikely that a convincing event study would show that the misstatements alleged in this case were accompanied by a market-adjusted price increase large enough to be considered statistically significant at the 95 percent level. Positive statements about a service that generates only 1/1000th of a firm's revenues could not possibly by themselves push up prices by more than a small fraction of what would be needed. And absent a discrete, identifiable, obviously important other piece of news at the same time, the odds are strongly against the net impact of all the other pieces of news at that time pushing prices up enough to make the difference. Thus, if this case went to trial, it is very likely it would fit under Rule 2, which would say that liability should not be imposed.

Moreover, unlike what the district court decided in this case, the complaint would likely have been dismissed at the motion-to-dismiss stage if our approach were followed. That approach would require that the plaintiffs, to avoid such dismissal, allege either a meaningful share price increase relative to the market at the time of the misstatements,[81] or facts providing plausible grounds to infer that the market would have made negative inferences had the issuer instead stayed silent. It seems unlikely that the plaintiffs would have been able to allege either set of facts.

The district court's rather strained finding of something in the allegations that could be construed as material, and its failure to even opine on the adequacy of the loss causation allegations, show what can happen if the adjudicatory process

81. As will be discussed in *infra* Part VI.B.2.a, "meaningful" should be set at a level such that in most cases with a relative-to-the-market price increase below that level, the plaintiff would not ultimately be able to introduce a convincing event study showing that what it finds to be the market-adjusted price change was large enough to be statistically significant at the set cutoff confidence level, currently 95 percent.

is not moored by a focus on whether the misstatement inflated the issuer's share price in the first place.

2. *In re BP p.l.c. Securities Litigation*. The disaster in the BP case was the April 20, 2010, Deepwater Horizon drill rig explosion and subsequent oil spill that befouled parts of the Gulf Coast and surrounding waters. Between the date of explosion and the end of June 2010, BP ADSs dropped in price by 48 percent.[82] The class action was brought on behalf of all persons who purchased BP ADSs between January 16, 2007, and May 28, 2010.[83]

The plaintiffs' claim was based on a set of statements over time relating to BP's commitment to safe operations, beginning on January 16, 2007. This was the day of the release of the Baker Report, an outside review of the company prompted by a BP refinery explosion in Texas City two years earlier. The report concluded, in the words of the court, that "BP had not adequately established process safety as a core value."[84]

On the day of the report's release, BP's CEO stated, "I recognize the need for improvement . . . by championing process safety as a foundation of BP's operations."[85] A few days later, another BP official, in an analyst call, explained a downward revision in a production forecast as due in part to increased focus "on safety and operational efficiency" and that BP "will in some cases deliberately slow the pace of our activity in order to improve its safety and efficiency."[86] The plaintiffs cite many subsequent statements about safety. Some were quite general, such as "BP aspires to be an industry leader in the three dimensions of safety—personal safety, process safety and the environment."[87] Others, however, were more specifically tied to the Baker Report, such as "we have continuously reported progress against a response plan and an independent external report."[88]

The district court found that the more general statements on safety "cannot serve as a basis for liability" because they would not "'communicate anything that a reasonable person would deem important to a securities investment decision.'"[89] It denied BP's motion to dismiss, however, with regard to the statements more specifically tied to the Baker Report. It found sufficient the plaintiffs' allegations as to the false or misleading character of these more specific statements, saying:

> This was a disaster so similar to prior disasters—the culmination of corner-cutting, overlooked and disregarded warnings, a lack of oversight, a failure to train employees properly, and long overdue maintenance—that it raises a genuine question as to whether BP was truly making the progress it claimed.[90]

82. *In re:* BP p.l.c. Sec. Litig., 843 F. Supp. 2d 712, 744 (S.D. Tex. 2012).
83. *Id.* at 723.
84. *Id.* at 726.
85. *Id.* at 727.
86. *Id.* at 728.
87. *Id.*
88. *Id.* at 757.
89. *Id.* (citations omitted).
90. *Id.* at 758.

As for the sufficiency of the allegations as to materiality, the court finds that the Baker Report was "unquestionably important" and "by its own terms, required BP to provide the public with regular reports on the Company's progress in implementing the recommendations"[91] Based on this, it could not conclude that the alleged misstatements relating to implementing the report's recommendations were immaterial as a matter of law.[92]

As in the Barclays case, the court denied BP's motion to dismiss without opining on the sufficiency of the plaintiffs' allegations with respect to loss causation.

Consider how our approach would address this case. We do not know whether a convincing event study would show that the alleged misstatements were accompanied by a market-adjusted price increase large enough to be statistically significant at the 95 percent level. If it would, liability should be imposed. Suppose, however, that it would not. Unlike the Barclays case, this would not be the end of the inquiry. The Baker Report required regular reports concerning progress in safety reforms. It is thus certainly possible that if BP had remained silent, the market would have drawn negative inferences and its share price would have gone down. In this situation, we need to look to Rule 3, which allows the plaintiff to show the size of the misstatements' inflationary effect by use of the second proxy—the corrective disclosure's price impact—if that proxy is reasonably reliable. The problem is that, as with most event-driven cases, it will not be. At a minimum, a large portion of the price drop was due to a materialization of the risk that BP's deep-sea operations posed and this would have occurred even if BP had made none of the alleged misstatements. It is impossible to disentangle this realization-of-the-risk contribution to the total market-adjusted price change from the contribution arising from the disaster announcement's elimination of whatever share price inflation there was due to the misstatement.

Without knowing more, it is unclear whether a court would grant a motion to dismiss under our approach. The alleged misstatements might well have led investors to believe that BP was making changes that would lessen the risk of future disasters and so it is possible that the plaintiffs would be able to allege a meaningful share price increase relative to the market at the time of the misstatements,[93] in which case the motion would not be granted. Otherwise, however, the motion would be granted, even if, as appears to be the case, the plaintiffs could allege facts providing plausible grounds to infer that the market would have made negative inferences had the issuer instead stayed silent. This is because it would be obvious even at this very early stage that the market-adjusted price change at the time of the disaster announcement would not be a reasonably reliable proxy of the misstatements' inflationary effect.

3. *Strougo v. Lannett Co., Inc.* Lannett, the issuer involved in *Strougo v. Lannett Co., Inc*. was a drug distributor. The disaster involved Lannett's failure to enter into an agreement renewing a supply agreement with JSP. In 2018, JSP

91. *Id.* at 775.
92. *Id.* at 776.
93. *See supra* note 91 and Part IV.D.1.

was providing Lannett with drugs constituting 37 percent of Lannett's net sales.[94] When the failure to renew was announced on August 20, 2019, Lannett's share price dropped by more than 60 percent.

The district court denied the defendants' motion to dismiss based on two statements, each of which related to the claim that JSP was a significant shareholder. Specifically, in a February 8, 2018, analyst call, Lannett's CEO referred to JSP as "a significant shareholder,"[95] and in a May 9, 2018, analyst call expanded to say that JSP is "one of our largest shareholdings . . . and they are businessmen watching the sort of changes we are making . . . [a]nd as a result, I'm confident when the time is ready, we'll get that renewal."[96]

Lannett, in connection with the original supply agreement with JSP and an earlier extension, had issued to JSP shares aggregating to about 15 percent of Lannett's total outstanding holdings. The plaintiffs, however, alleged facts suggesting that JSP might have disposed of a substantial portion or all of these shares, allegations that the court found sufficient with respect to the falsity of the CEO's statements about the size of JSP's stake in Lannett.[97] These same facts were sufficient with respect to the issue of scienter as well, under the theory that if JSP were not a substantial shareholder, Lannett management would know that.

The court's analysis of the sufficiency of the allegations with respect to the materiality of the alleged misstatements again turns on the size of the stock price drop upon the announcement of the disaster, but with perhaps more subtlety than in some other event-driven cases. The court reasoned both that a drop of 60 percent in share price meant that the market viewed a renewal of the supply contract as very important, and that the market would infer that renewal was more likely if JSP had a significant stake in Lannett than if it did not.[98] The court also found the price decline to constitute a sufficient allegation of loss causation.[99]

In terms of how the case might proceed under our approach, the story is nearly identical to our analysis of the BP case. Again, if it turned out that a convincing event study would show that the alleged misstatements were accompanied by a market-adjusted price increase large enough to be statistically significant at the 95 percent level, liability should be imposed. The difference from *BP*, though, is if it were to turn out that the plaintiffs were unable to introduce such a convincing event study. The complaint and the district court opinion suggest that it was less likely that the market would have made a negative inference from silence. In each case, however, even if the market would have made a negative inference, that would not have altered the outcome. This is because in each

94. C.A. 18-3635, 2019 WL 1172992, at *2 (E.D. Pa. Mar. 13, 2019).
95. *Id.* at *4.
96. *Id.* at *6.
97. *Id.* at *2 n.18.
98. *Id.* at *15.
99. *Id.* at *14 n.143.

the disaster's price impact would not have been a reasonably reliable proxy for the misstatements' inflationary effect. So in each, the determining factor in deciding the motion to dismiss would have been whether there was a meaningful share price increase, relative to the market, at the time of the alleged misstatements.

4. Brendon v. Allegiant Travel Co. The disaster in *Brendon v. Allegiant Travel Co.* was a broadcast on CBS News *60 Minutes* that criticized the company's safety and maintenance record.[100] Although there was not an actual plane crash, the broadcast presumably led to a predictable reduction in customer confidence, something vital to an airline. When, on Friday, April 13, 2018, CBS News announced it would air the story in two days on Sunday evening, Allegiant's share price dropped by 8.59 percent. It dropped an additional 3 percent on Monday, April 16, the first trading day after the Sunday evening broadcast, and yet another 2 percent on May 9 when the U.S. Department of Transportation (DOT), perhaps prompted by the broadcast, announced that it would audit Federal Aviation Authority oversight of Allegiant's maintenance practices.[101] The class action was brought on behalf of all persons who purchased Allegiant shares between June 8, 2015, and May 9, 2018.[102]

The district court denied the defendant's motion to dismiss. This decision was based on the two statements cited in the complaint with respect to which the court found sufficient allegations as to their being false or misleading and made with scienter. One statement was in Allegiant's 2015 10-K, which said, "[we] believe our aircraft are, and will continue to be, mechanically reliable." The other was in Allegiant's 2015, 2016, and 2017 10-Ks, each of which stated, according to the court, "Allegiant's 'technicians . . . have appropriate experience,' and Allegiant 'provide[d] [these technicians] with comprehensive training[,]' and that Allegiant could hire 'sufficient qualified alternative providers of maintenance services . . . to satisfy . . . maintenance needs.'"[103]

Interestingly, the court made no finding as to the sufficiency of the plaintiffs' allegations with respect to the materiality of these alleged misstatements, only their falsity.[104] The court did find that the plaintiffs adequately alleged loss causation based on the size of the price drops accompanying, respectively, the *60 Minutes* announcement, the broadcast itself, and the announcement of the DOT audit.[105]

Relative to the previous three examples of event-driven litigations, while on the surface this appears to be an event-driven litigation, it is in fact likely on the other side of the borderline that distinguishes event-driven litigations from traditional ones. Arguably, rather than the disaster representing the

100. Case No.: 2:18-cv-01758-APG-BNW, 2019 U.S. Dist. LEXIS 152835 (D. Nev. Sept. 9, 2019).
101. *Id.* at *4–5.
102. *Id.* at *1.
103. *Id.* at *9.
104. The court cites authority stating that to recover damages for a Rule 10b-5 violation "a plaintiff must prove (1) a material misrepresentation or omission by the defendant . . . ," *id.* at *5–6, but it only finds that "[t]he plaintiffs allege that these statements were false and misleading," *id.* at *9, not that the plaintiffs allege that the statements were *materially* false or misleading.
105. *Id.* at *20.

materialization of a risk that might or might not ever eventuate, the public inevitably would become aware of the safety maintenance problems at Allegiant at some point, and with that, the resulting reduction in public confidence and negative impact on share price. The broadcast was simply the precipitating event.

If there were questions in the market about Allegiant's safety maintenance, silence on the matter would probably have set off alarm bells in the market, i.e., the market would make negative inferences. This suggests that the alleged misstatements could have postponed a price decline from public realization of the problems and hence inflated price for the period of delay. And the fact that the price drop at the time of the broadcast does not really represent the materialization of a risk means that the price change at this point does appear to be a reasonable proxy for the misstatement's inflationary effect. Thus, Rule 3 suggests that the district court was correct in denying the motion to dismiss.

5. In re PG&E Securities Litigation. In *In re PG&E Securities Litigation*, the disaster was the California wildfires in the fall of 2018.[106] The fires meant that PG&E would be subject to huge property damage liabilities and these liabilities would not be recoverable through California's PUC-approved rate increases if PG&E's pre-fire efforts at vegetation management were proven to have been inadequate. In the couple of months following the fires, PG&E's share price declined by more than 75 percent.

Proceedings in the case have been stayed pending conclusion of PG&E's bankruptcy proceedings and so there has not yet been a ruling on any PG&E motion to dismiss. The alleged misstatements in the complaint relate to a series of statements by PG&E concerning its efforts to reduce the risk of wildfires. One was a statement by a high PG&E official concerning the company's commitment to "[step] up vegetation management activities to mitigate wildfire risk."[107] Second, PG&E's 2015 10-K stated in pertinent part: "Throughout 2015, the Utility upgraded several critical substations and re-conductored a number of transmission lines to improve maintenance and system flexibility, reliability and safety . . . . The Utility plans to continue performing work to improve the reliability and safety of its electricity distribution operations in 2016."[108] Finally, PG&E's 2016 10-K stated in pertinent part: "Throughout 2016, the Utility upgraded several critical substations and re-conductored a number of transmission lines to improve maintenance and system flexibility, reliability and safety."[109]

The plaintiffs claim that these statements by PG&E were "reassurances . . . that it complied with relevant safety regulations and . . . effectively communicated that the Company would be able to recover any property damage liabilities from wildfires caused by its systems, through the CPUC."[110] These reassurances,

106. Third Amended Consolidated Class Action Complaint, *In re* PG&E Corp., No. 5:18-cv-03509-EJD (N.D. Cal. Oct. 4, 2019).

107. *Id.* at para. 194.

108. *Id.* at para. 6444.

109. *Id.*

110. *Id.* at para. 319.

the plaintiffs allege, were false or misleading because PG&E in fact left some trees too close to power lines, in violation of California regulations.

This case seems like one that under our approach should not move beyond the motion-to-dismiss stage. To start, on their face, we doubt that these statements, relative to silence on the matter, led to investors having added confidence that if a huge fire occurred, PG&E would be able to recover the resulting property loss liabilities through CPUC-approved rate increases. If we are correct, it is unlikely that the plaintiffs could block dismissal by being able to allege a meaningful share price increase relative to the market at the time of the misstatements.[111] In the absence of such a price allegation, the motion will be dismissed even if, contrary to what appears to be the case based on the current complaint, the plaintiffs were able in an amended complaint to allege facts providing plausible grounds to infer that the market would have made negative inferences had the issuer instead stayed silent. This is because it would be obvious even at this very early stage that the large market-adjusted price drop at the time of the disaster announcement would not be a reasonably reliable proxy for the misstatements' inflationary effect. Again, this is because it would be impossible to separate out the portion, if any, of this drop that was the product of the dissipation of inflation caused by misstatements that led the market to underestimate the risk of massive wildfires where PG&E would not be able to recover the resulting liabilities through rate increases.

6. Singh v. Cigna Corp. The disaster in *Singh v. Cigna Corp.*[112] was the imposition of sanctions by government Medicare administrators on Cigna's Medicare Advantage operations. These operations contributed 22 percent of Cigna's overall revenues.[113] As it turns out, the sanctions effectively halted any growth in this important part of Cigna's business for 1.5 years. In the two trading days following the January 21, 2016, announcement of the sanctions, Cigna's share price dropped a total of 3.03 percent.[114] Following a July 29, 2016, 10-Q filing, in which it reduced its financial outlook for 2016 and attributed the reduction in part to the sanctions, the share price dropped 8.8 percent.[115] The class action was brought on behalf of all persons who purchased Cigna shares between February 27, 2014, and July 29, 2016.

The plaintiffs identified two sets of statements that they claimed were materially false or misleading. One related to a part of the company's code of ethics, published in December 2014, "which advises employees 'to do things the right way'" and "opines that employees 'have a responsibility to act with integrity.'"[116] The other set were statements in Cigna's 2013 and 2014 10-Ks, which were filed on February 27, 2014, and February 26, 2015, respectively. The 2014 10-K included the statements: "We have established policies and

111. *See supra* note 63 and accompanying text.
112. 277 F. Supp. 3d 291(D. Conn. 2017), *aff'd*, 918 F.3d 57 (2d Cir. 2019).
113. *Id.* at 314–15.
114. *Id.* at 305.
115. *Id.* at 306.
116. *Id.* at 311–12.

procedures to comply with applicable requirements" and that Cigna "expects to continue to allocate significant resources to its . . . programs to comply with the laws and regulations governing Medicare Advantage and prescription drug plans."[117] The 2015 10-K contained only the second of these two statements.[118]

The district court granted the defendants' motion to dismiss. It found the statements in the code of ethics to be immaterial puffery, as something that would not be relied upon by the reasonable investor. In contrast, it stated that the pleading relating to the statements in the 10-Ks would have been sufficient with respect to the issue of the materiality of the misstatements if there were sufficient allegations that Cigna's violations were "ongoing and substantial." Although the plaintiffs made allegations suggesting "ongoing and substantial" violations, the allegations were, in the court's view, not specific enough as to when this pattern of violations began. Given the possibility that violating at that level may not have begun until after the filing dates of the 2013 and 2014 10-Ks, the court found the allegations as to the 10-K statements being materially false or misleading to be insufficient.[119]

The plaintiffs appealed the district court's ruling to the Second Circuit, which upheld the ruling.[120] The Second Circuit agreed with the district court that the code of ethics statements were immaterial puffery.[121] But it used broader grounds than the district court to find insufficient the allegations relating to materiality of the statements in the 10-Ks. In the Second Circuit's view, these statements were immaterial on their face, concluding as a matter of law that "[a] reasonable stockholder would not 'consider [these statements] important in deciding whether to buy or sell shares of stock,'" and that "a reasonable investor would [not] view these statements 'as having significantly altered the total mix of information made available.'"[122] It suggested that for Cigna's descriptions of its compliance efforts to be potentially actionable as materially false or misleading, they would need to be "far more detailed."[123]

Our approach would likely also lead to the complaint being dismissed for reasons essentially identical to those in the PG&E case. The reasoning behind the Second Circuit concluding that the plaintiffs' allegations concerning materiality are insufficient suggests as well that the plaintiffs would neither be able to allege a meaningful share price increase relative to the market at the time of the misstatements, nor facts providing plausible grounds to infer that the market would have made negative inferences had the issuer instead stayed silent. And even if the plaintiffs were able to make this second allegation, it would be of no avail: the price drops associated with what the plaintiffs claim is the corrective

117. *Id.* at 302.
118. *Id.* at 303–04.
119. *Id.* at 316.
120. Singh v. Cigna Corp., 918 F.3d 57 (2d Cir. 2019).
121. *Id.* at 63.
122. *Id.* at 63, 65 (citations omitted).
123. *Id.* at 63.

disclosure are not reasonably reliable proxies for the misstatements' inflationary effect.

VI. Reforming Fraud-on-the-Market Law

This Article has explored the basic logic behind the fraud-on-the-market cause of action and what that logic implies as to when liability should and should not be imposed from a social welfare perspective. From this analysis, we derived our three simple Rules. In this final Part, we will review and critique existing law and recommend reforms. In considering these reforms, it should be recalled that the private damages remedy for Rule 10b-5 violations in general, and the fraud-on-the-market cause of action in particular, are entirely judicial creations.[124] As such, the development of the cause of action is properly shaped by just these kinds of policy considerations.[125]

To focus on the issues of interest, throughout this Part VI, we will again assume a hypothetical case where a plaintiff can establish that an issuer made a misstatement with scienter, that the issuer's shares trade in an efficient market, and that the plaintiff purchased soon after the misstatement and still held shares at the time of the misstatement. In Part III, we noted that doctrinally, the four remaining legal issues in a fraud-on-the-market suit would be the materiality of the misstatement, loss causation, transaction causation, and the measure of damages.[126] To focus on the substance of what is going on in the adjudication of such suits, however, we developed our "stripped-down model" of the cause of action. The fundamental premise of this model is that all four of these doctrinal issues would be resolved favorably if the plaintiff in our hypothetical case can show that the misstatement in fact inflated price and by a sufficiently large amount.[127] We then used this stripped-down model to engage in our social welfare analysis as to how to adjudicate whether the price was sufficiently inflated, an analysis from which we derived our three simple Rules.

Courts and those who practice before them, however, speak in terms of these doctrinal elements, not in the terms of the stripped-down model. So at this point we need to return to the language of doctrine, because the way courts can implement reform is through refinements in what these doctrinal elements require

124. *See supra* notes 7–9 and accompanying text.

125. Blue Chip Stamps v. Manor Drug Stores, 421 U.S. 723, 737 (1975) ("When we deal with private actions under Rule 10b-5, we deal with a judicial oak which has grown from little more than a legislative acorn. . . . It is therefore proper that we consider . . . what may be described as policy considerations when we come to flesh out the portions of the law with respect to which neither the congressional enactment nor the administrative regulations offer conclusive guidance."). Alternatively, it is conceivable that the SEC could undertake the recommended reforms. Professor Grundfest has suggested that the SEC could "disimply" the private right of action under Rule 10b-5. Joseph A. Grundfest, *Disimplying Private Rights of Action Under the Federal Securities Laws: The Commission's Authority*, 107 Harv. L. Rev. 961 (1994). If he is correct, then presumably partial "disimplication" is possible too. *See id.* at 1015 (noting that the Commission could "sharply limit[] or eliminat[e] the right to claim monetary damages in certain circumstances").

126. *See supra* Part III.A.

127. *See supra* Part III.A.

and in how they are to be assessed at different points in the adjudicatory process. Ultimately, we see the main place for reform is with regard to loss causation and, in particular, how loss causation is assessed at the motion-to-dismiss stage. We will first review materiality, however, because it is materiality that currently gets most court attention at this stage. We will also briefly discuss the class certification stage and the U.S. Supreme Court's recent decision in *Goldman Sachs Group, Inc. v. Arkansas Teacher Retirement System*.[128]

As will be developed below, currently fraud-on-the-market suits are rarely terminated for failure to plead materiality at the motion-to-dismiss stage except where the alleged misstatements are so general and generic as to constitute "puffing." They are also rarely terminated at the motion-to-dismiss stage for a failure to plead loss causation where the issue is the inadequacy of the allegations relating to the misstatement's price effects. We have no quarrel with current practice in regard to materiality, but we believe current practice with regard to loss causation needs major rethinking. In many cases that currently survive the motion to dismiss, enough is already known to conclude that the likelihood is extremely low that the plaintiff will be able to ultimately establish at trial what we believe needs to be shown to demonstrate loss causation.

A. Current Motion-to-Dismiss Judicial Practice with Regard to Materiality and Loss Causation

Current judicial practice is quite liberal with regard to the adequacy of allegations relating to materiality and loss causation in fraud-on-the-market complaints.

1. Materiality. Under current judicial practice, what at trial does a plaintiff need to do to prove materiality, and what kinds of facts need to be alleged in the complaint for the plaintiff to avoid dismissal for a failure to adequately plead materiality?

a. What must ultimately be proved. The U.S. Supreme Court has held that a fact is material if there is a substantial likelihood that a reasonable investor would consider it important in a decision whether to purchase or sell a security and so this is what the plaintiff would need to prove at trial concerning the misstatement.[129]

b. What must be pled. For most courts, all that is required for the plaintiff to avoid dismissal of its complaint on materiality grounds is, as expressed by the Second Circuit, an allegation that the issuer made a misstatement on its face not "so obviously unimportant to a reasonable investor that reasonable minds

128. 141 S. Ct. 1951 (2021).

129. In *TSC Industries, Inc. v. Northway, Inc.*, a proxy statement case, the U.S. Supreme Court found that a fact is material "if there is a substantial likelihood that a reasonable investor would consider it important in deciding how to vote." 426 U.S. 438, 449 (1970). Later, this standard was explicitly extended to buy-and-sell decisions in the seminal fraud-on-the-market case, *Basic Inc. v. Levinson*, 485 U.S. 224, 231 (1988) ("We now expressly adopt the *TSC Industries* standard of materiality for the § 10(b) and Rule 10b-5 context.").

could not differ on the question of [its] importance."[130] The rationale for this liberal approach suggested by the Ninth Circuit is that "[t]he determination of materiality is a mixed question of law and fact that generally should be presented to a jury."[131] These descriptions of judicial practice would seem to say that to satisfactorily plead materiality, it is not essential that plaintiffs allege facts plausibly suggesting that they could prove at trial that the misstatement had an inflationary effect.[132]

130. Ganino v. Citizens Util. Co., 228 F.3d 154, 162 (2d Cir. 2000) (quoting Goldman v. Belden, 754 F.2d 1059, 1067 (2d Cir. 1985)). *Ganino* was a fraud-on-the-market suit in which the Second Circuit reversed the district court's holding that the claimed misleading inclusion of certain fees in net revenues was immaterial. The grounds for the district court's ruling had been that the misstatement at issue involved certain payments amounting to only 1.7 percent of total annual revenues and that "the lack of share price movement following the release of corrective information was evidence of immateriality." *Id.* at 157–58. This language from *Belden* was quoted again by the Second Circuit in a fraud-on-the-market suit as recently as 2015. IBEW Local Union No. 58 Pension Trust Fund & Annuity Fund v. Royal Bank of Scotland Grp., PLC (Royal Bank), 783 F.3d 383, 389–90 (2d Cir. 2015). Examples of alleged misstatements that can be found to be immaterial as a matter of law are ones so general, broad, or vague as to cause a reasonable investor not to rely on them, which are often referred to as "puffery." *See, e.g.*, ECA & Local 134IBEW Joint Pension Trust of Chi. v. JP Morgan Chase Co., 553 F.3d 187, 206 (2d Cir. 2009). More specific statements are also sometimes found to be immaterial as a matter of law on the grounds that they are self-evidently unimportant. *See*, e.g., Greenhouse v. MCG Capital Corp., 392 F.3d 650 (4th Cir. 2004) (ruling that the CEO's lie about finishing college stated in various forms filed with the SEC in preparation for an IPO is not material because "it is *not* substantially likely that reasonable investors would devalue the stock knowing that Mitchell skipped out on his last year at Syracuse").

131. Arrington v. Merrill Lynch, Pierce, Fenner & Smith, Inc., 651 F.2d 615, 619 (9th Cir. 1981).

132. *See, e.g.*, SEC v. Lee, 720 F. Supp. 2d 305, 335 (S.D.N.Y. 2010) (holding SEC sufficiently pled materiality by alleging defendant's false statements would have influenced reasonable investor). Cases relating to what needs to be proved at trial are relevant here also. *See, e.g.*, United States v. Ferguson, 676 F.3d 260, 274–75 (2d Cir. 2011) (stating that there are ways of proving materiality other than an event study and noting that in the case at hand there was "substantial" alternative evidence of materiality, including testimony from two stock analysts and the defendant's investor-relations manager). In *Veleron Holding, B.V. v. Stanley*, 117 F. Supp. 3d 404, 433 (S.D.N.Y. 2015), the court denied defendant's summary judgment motion with respect to a Rule 10b-5 insider trading claim where the defendant was asserting that in the absence of an event study, there was no genuine dispute as to materiality. There are cases in the Third Circuit that would appear at odds with the statement in the text, however. This stems from then Circuit Court Judge Samuel Alito's decision in *In re Burlington Coat Factory Securities Litigation*, 114 F.3d 1410 (3d Cir. 1997), in which he said: "[E]fficient markets are those in which information important to reasonable investors (in effect, the market) is immediately incorporated into stock prices. . . . Therefore, to the extent that information is not important to reasonable investors, it follows that its release will have a negligible effect on the stock price." *Id.* at 1425 (quotations and citations omitted). He noted that the issuer's stock price did not move meaningfully on what he viewed as the day on which a correction to the alleged misstatement was first publicly disclosed (two months before the sharp price decline on the day of a bad earnings report that the plaintiffs regarded as the corrective disclosure). From this, he concluded that the misstatement was immaterial as a matter of law and upheld the district court's granting of the motion to dismiss with regard to this misstatement on these grounds. Although *Burlington Coat Factory* involved a fraud-on-the-market claim where, at a conceptual level, materiality and loss causation could be used interchangeably as terms relating to whether the misstatement's inflationary effect was sufficiently large to justify imposition of liability, this approach was followed by a district court in a government action in the Third Circuit, in *SEC v. Berlacher*, No. 07-3800, 2010 WL 3566790, at *7 (E.D. Pa. Sept. 13, 2010). There, the judge found in a bench trial that the SEC did not meet its burden in showing that the information that the defendant alleged traded on was material because the SEC's expert "did not conduct an event study and relied heavily upon his general familiarity with how securities markets operate." *Id.* at *8. If, to prove materiality, a plaintiff needs to submit expert testimony based on an event study showing that the misstatement moved price, then it would appear

2. Loss Causation. Correspondingly, under current judicial practice, what does a plaintiff need to prove at trial to establish loss causation and what kinds of facts need to be alleged for the plaintiff to avoid the dismissal of the complaint for a failure to plead loss causation?

a. What ultimately must be proved. The basic causal inquiry in the fraud-on-the-market theory is framed in terms of the loss causation element.[133] The U.S. Supreme Court in *Dura* held that the plaintiff in a fraud-on-the-market suit must prove that the misstatement in question "proximately caused the plaintiff's economic loss"[134] and that a complaint that simply alleges that the misstatement inflated the price the plaintiff paid for her shares does not adequately plead the loss causation element in a fraud-on-the-market suit.[135] Rather, to prove the loss causation element, the plaintiff, the Court held, must show both that the misstatement in question inflated the issuer's share price and that there was a causal connection between this inflation and a loss by the plaintiff.

Consider our hypothetical case, where the plaintiff buys her shares shortly after the alleged misstatement and is still holding them at the time of the corrective disclosure. *Dura*'s dual requirement of inflation and loss should easily be met where the plaintiff can prove that (i) the misstatement had an inflationary effect of the required size, and (ii) the alleged corrective disclosure made clear that, whatever in the misstatement led the market to overvalue the issuer's shares, there was no continued reason for the market to do so. In such a case, she would have proved that but for the misstatement she would have paid a lower price and that because an efficient market will immediately reflect the corrective disclosure in price, she will not be able to retrieve her overpayment upon resale.

A confusing gloss that the Court put on the concept of "proximate cause" suggests, however, that in some extraordinary situations this conclusion, in the eyes of the Court, might not hold. In the process, what the Court said has contributed unnecessarily to the overemphasis on the price change at the time of the corrective disclosure. Specifically, the Court, in referring to a situation where the purchaser initially pays a price inflated by the misstatement, stated:

> If the purchaser sells later after the truth makes its way into the marketplace, an initially inflated purchase price might mean a later loss. *But that is far from inevitably so*. When the purchaser subsequently resells such shares, even at a lower price, that

that a complaint containing no factual allegations suggesting that the plaintiff would plausibly be able to introduce such a study at the merits stage would fail to adequately plead materiality. The Third Circuit cases have been criticized by a district court in the Tenth Circuit on the grounds that "any approach that designates a single fact or occurrence as always determinative" would be inconsistent with the inherently fact-specific inquiry suggested by the U.S. Supreme Court's ruling in *TSC v. Northway*. SEC v. Goldstone, No. CIV 12-0257 JB/LFG, 2016 WL 313565, at *149 (D.N.M. May 10, 2016).

133. The other causal element derived from the list of elements associated with a traditional reliance action is transaction causation, which is presumed in any situation where the fraud-on-the-market presumption is allowed. *See supra* Part II.B.

134. Dura Pharms., Inc. v. Broudo, 544 U.S. 336, 346 (2005).

135. *Id*.

> lower price may reflect, not the earlier misrepresentation, but changed economic circumstances, changed investor expectations, new industry-specific or firm-specific facts, conditions, or other events, which taken separately or together account for some or all of that lower price.[136]

The key problem is the italicized language, which, as we have just seen, is simply incorrect: a loss in fact is inevitable because the purchaser paid an inflated purchase price and, with the truth out, the efficient market hypothesis assures that this overpayment cannot be recouped at resale.

The classic example of where this language might come into play would be where a plaintiff purchases an issuer's stock shortly after it substantially misstates its earnings, thereby creating the impression that the company's future cash flows will be higher than the correct number would suggest and inflating its share price. Subsequently, the issuer's only factory burns down, putting it out of business. At the time of the fire, the market has no idea about the falsity of the issuer's earnings statement, but thereafter there is an announcement revealing what the true situation had been at the time of the misstatement. The Court's language could be interpreted as saying that the loss the plaintiff suffered was due to an intervening cause, the fire, and hence it is not actionable. The price change accompanying the corrective disclosure would be zero.

This is not the correct way to look at the situation, however. The plaintiff is as unable to recover her overpayment as she would have been had there been an announcement of the truth but no fire. The wrongful action of the issuer that led to this loss is the making of the misstatement, not telling the truth later. Nor is the fire an intervening cause that leads to the loss that makes the misstatement not proximate: the only reason why a showing of price inflation is not enough to show loss causation is the possibility that the plaintiff could resell while the price was still inflated. The confusing language in *Dura* quoted above is probably the result of the Court incorrectly focusing on the price reaction to a corrective disclosure as the source of the investor's loss and the fact that not every price decline that occurs on the same day as a corrective disclosure is due to the price impact of that disclosure. In fact, as we have discussed, the corrective disclosure's price impact is simply a technique, that sometimes works and sometimes does not, for trying to measure the misstatement's inflationary effect.

b. What must be pled. Again, the question in terms of current judicial practice is what kind of facts does a plaintiff need to allege to adequately plead the loss causation element of the suit. The overall picture described here has three components: what courts say are the pleading standards, a review of the six apparent event-driven cases discussed in Part V, and a consideration of what district courts deciding motions to dismiss actually did. This third component is based on a random sample from the Stanford Law School Securities Class Action Clearinghouse (the "Stanford Clearinghouse") of twenty fraud-on-the-market cases filed in the 2018–2020 three-year period, ten of which had district court decisions on the defendants' motions to dismiss.

136. *Id.* at 342–43.

At the motion-to-dismiss stage, the judicial inquiry concerning loss causation divides into two parts. The first part relates to the content of the corrective disclosure specified in the complaint and the second relates to price movements.

i. **Content of the corrective disclosure**. For the first part of the inquiry, the issue is whether the alleged corrective disclosure is something that could plausibly have eliminated the misstatement's alleged inflationary effect from the share price.[137] For an alleged corrective disclosure in a traditional case, this issue translates to whether facts are alleged (including the actual language of the alleged corrective disclosure) plausibly suggesting that the disclosure in fact showed that the misstatement was false or misleading. For an event-driven case, the alleged corrective disclosure is the disaster announcement, and the issue translates to whether the facts alleged plausibly suggest that the disaster is something the risks of which the misstatement could have led the market to underestimate.[138] A review of the opinions in our surveyed cases shows that there is frequently contention between the parties with regard to this first part of the inquiry, which a judge needs to resolve.[139] These determinations include whether a disclosure that is claimed to be corrective reveals the true situation even though it is not a statement directly saying

137. *See, e.g.*, FindWhat Inv'r Grp. v. FindWhat.com, 658 F.3d 1282, 1311 n.28 (11th Cir. 2011) ("A corrective disclosure can come from any source, and can take any form from which the market can absorb [the information] and react . . . ." (alteration in original) (quoting Matthew L. Fry, *Pleading and Proving Loss Causation in Fraud-on-the-Market-Based Securities Suits Post*–Dura Pharmaceuticals, 36 Sec. Reg. L.J. 31, 64–71 (2008))).

138. In a somewhat different context, the Second Circuit articulated this materialization of the risk theory by which an event can eliminate the share price inflation arising from a misstatement that led the market to underestimate a risk as follows: "a misstatement or omission is the proximate cause of an investment loss if the risk that caused the loss was within the zone of risk concealed by the misrepresentations and omissions alleged by a disappointed investor." Lentell v. Merrill Lynch & Co., 396 F.3d 161, 172 (2d Cir. 2005).

139. For a review of cases where there was a dispute as to whether an alleged corrective disclosure was of a sort that plausibly could eliminate any inflation caused by the misstatement, see Matthew Mustokoff & Margaret Mazzeo, *Loss Causation on Trial in Rule 10b-5 Litigation Ten Years After* Dura, 70 Rutgers L. Rev. 175, 196–207 (2017). In our random sample of cases from the Stanford Clearinghouse, out of the ten cases for which there were district court motion-to-dismiss opinions, the motion was denied in two without any discussion of loss causation. Of the remaining eight, one denied the motion to dismiss without addressing whether the complaint alleged sufficient facts concerning the content of the corrective disclosure, presumably because the matter was not in dispute. The remaining seven did address this issue and in six of these seven, the court decided the allegations were sufficient with regard to this issue and in one that they were not. So, in total, for the eight cases where loss causation was discussed, the motion was denied in seven. With regard to the apparent event-driven cases discussed in Part V, out of the five cases for which there is a motion-to-dismiss decision, one was granted and four were denied. In the case where the motion was granted, the decision was based on the insufficiency of the allegations with respect to materiality and the opinion did not address loss causation. As for the opinions in the four cases where the motion was denied, two did not address loss causation. In the other two, loss causation was addressed, but the court did not address the question of whether the disaster was one of the risks of which the alleged misstatement led the market to underestimate, and so that part of the loss causation inquiry was presumably not in dispute.

that the earlier statement was incorrect. They also include whether some earlier disclosure already revealed the true situation.

ii. **Price movement**. Assuming that the first part of the inquiry concludes that the alleged corrective disclosure could plausibly have eliminated from the share price any inflationary effect the misstatement may have had, the second part of the inquiry relates to what facts must be alleged for it to be plausible to a court that the plaintiff would be able to prove at trial that the misstatement inflated price and that the plaintiff later incurred a loss as a result. Our review of practice suggests that the complaints appear always to allege that a meaningful price decline accompanied the alleged corrective disclosure and that courts seem always to view this allegation as sufficient. Courts, in their opinions accompanying denials of motions to dismiss, either simply recite the price drop allegation without comment or do not mention this aspect of loss causation at all.[140]

iii. **What need not be pled**. There is broad judicial acceptance of the price maintenance theory, which permits a fraud-on-the-market suit to proceed despite the absence of a showing that the alleged misstatement was associated with a price increase.[141] The complaints in all of the six apparent event-driven cases discussed in Part V and all of the twenty cases in our survey explicitly or implicitly relied on the price maintenance theory since none of them contained allegations of a price increase at the time of the misstatement. None of the complaints in these cases alleged facts suggesting that the price would have dropped at the time

140. The U.S. Supreme Court, in its "*Twombly/Iqbal* test," has held that to avoid dismissal, a complaint should allege facts that provide "plausible grounds to infer" each element of the action that needs to be proved at trial. Bell Atl. Corp. v. Twombly, 550 U.S. 544, 556 (2007); Ashcroft v. Iqbal, 556 U.S. 662 (2009). In *Lormand v. US Unwired, Inc.*, 565 F.3d 228 (5th Cir. 2009), the Fifth Circuit seeks to apply the *Twombly/Iqbal* test to what an adequate pleading of loss causation requires in fraud-on-the-market actions. With regard to the price movement part of the inquiry, the Fifth Circuit notes that, in *Dura,* a case where the plaintiffs had alleged that the defendant issuer's misstatement inflated its share price, "the Court indicated that the pleadings would have been adequate if they had 'claimed that Dura's share price fell significantly after the truth became known.'" *Id.* at 256 (quoting Dura Pharms., Inc. v. Broudo, 544 U.S. 336, 347 (2005)). In a subsequent case, the Fifth Circuit stated that in such cases the plaintiff is not obligated "to deny affirmatively that other factors affected the stock price in order to defeat a motion to dismiss." Spitzberg v. Houston Am. Energy Corp., 758 F.3d 676, 688 (5th Cir. 2014). In our random sample of cases from the Stanford Clearinghouse, opinions in seven of the cases discussed loss causation and denied the motion to dismiss, see *supra* note 139. All these cases stated that, with regard to what needed to be alleged concerning prices, the allegation in the complaint of a price drop at the time of the corrective disclosure was sufficient, with two affirmatively stating that the plaintiff did not need to establish that the drop was not due in part or all to other causes. With regard to the five apparent event-driven cases discussed in Part V.D where there was a motion-to-dismiss decision, the opinions in the two cases that both deny the motion to dismiss and discuss loss causation state that, with regard to allegations concerning prices, the allegation in the complaint of a price drop at the time of the corrective disclosure was sufficient.

141. *See* Sechleicher v. Wendt, 618 F.3d 679, 683 (7th Cir. 2010); Glickenhaus & Co. v. Household Int'l, Inc., 787 F.3d 408, 415 (7th Cir. 2015); *In re* Vivendi, S.A. Sec. Litig., 838 F.3d 223, 256 (2d Cir. 2016); Waggoner v. Barclays PLC, 875 F.3d 79, 104 (2d Cir. 2017).

> of misstatement if the issuer had stayed silent. And for those cases in these two groups for which there are motion-to-dismiss decisions, the motion is either denied or granted on grounds unrelated to the absence of such allegations. There is also no suggestion of the need for such an allegation in the key appellate cases endorsing the price maintenance theory.[142]

In addition, there is broad judicial acceptance of the idea that, beyond alleging a meaningful price drop, the plaintiff does not need to allege facts that rule out alternative explanations for the drop, even where there has been a sharp decline in the market prices of the whole category of securities to which the security generating the litigation belongs.[143] This is important since a decline of a whole category of securities to which the issuer belongs could suggest that some, and perhaps all, the drop in the price of the share of a particular issuer was due to a factor other than the dissipation of any inflation resulting from the misstatement. The fact that such a decline occurred for a whole category of issuers is typically easily available at the time of the motion to dismiss and unequivocal in its implications. Thus, it is the kind of information of which a judge can take judicial notice.

As we have discussed, where the alleged corrective disclosure is the announcement of a disaster, a similar, and quite possibly even more severe, problem arises. In most such cases, the impact on share price of the fact that the company has suffered this setback is bound to be much larger than the amount, if any, by which the misstatement had previously inflated price through leading the market to underestimate the risk. None of the complaints in any of the six apparent event-driven cases discussed in Part V or the twenty cases in our survey alleged facts seeking to rule out alternative explanations of the price decline that it alleged accompanied the alleged corrective disclosure. As for those cases in these two groups for which there are motion-to-dismiss decisions, the motions are either denied or granted on grounds unrelated to the failure to allege facts that rule out alternative explanations for the price drop.

B. Reforming Motion-to-Dismiss Practice

If we compare existing judicial practice in deciding fraud-on-the market motions to dismiss with what our analysis suggests would maximize social welfare, what reforms would be necessary? Recall again that to focus on the issues of interest, we are considering a hypothetical case where the plaintiff's complaint adequately alleges that the issuer made a misstatement with scienter, that its shares

142. *See supra* note 141.

143. *See, e.g.*, *In re* Bear Stearns Cos., Inc. Sec., Derivative & ERISA Litig., 763 F. Supp. 2d 423, 506–07 (S.D.N.Y. 2011) ("at the motion to dismiss stage, the Securities Complaint need not rule out all competing theories for the drop in Bear Stearns' stock price; that is an issue to be determined by the trier of fact on a fully developed record" (listing several other cases standing for the same proposition)).

trade in an efficient market, and that the plaintiff purchased soon after the misstatement and still held shares at the time of the corrective disclosure. So the battle between the parties will concern the sufficiency of the complaint with respect to materiality and loss causation.

This discussion of reforming the motion to dismiss will begin with the identification of what our analysis suggests is the single key question that a judge deciding such a motion should address with respect to materiality and loss causation. It will then go on to seek to operationalize our three simple Rules in the motion-to-dismiss context.

1. The key question. *Does the complaint allege facts providing plausible grounds to infer that the plaintiff can prove at trial that the misstatement had an inflationary effect of the required size?*

a. A yes answer and materiality. Under current law, if the answer to this key question is yes, the complaint will not be dismissed on materiality grounds. Our analysis calls for the same result. A misstatement that meaningfully inflates the price of a security trading in an efficient market obviously has had an actual effect on the behavior of investors, which strongly suggests that a reasonable investor, like those actually trading in the market, would have found it important.[144]

b. A yes answer and loss causation. If the answer is yes, under current practice the complaint will also in most, but possibly not all,[145] cases resembling our hypothetical not be dismissed on loss causation grounds. Under our analysis, a yes answer would mean that such cases should never be dismissed on these grounds. With a yes answer, the plaintiff has pled facts providing plausible grounds to infer both that the plaintiff would have paid a lower price but for the misstatement, and that she will be unable to retrieve her overpayment upon resale. The plaintiff thus unambiguously suffered a loss that she would not have suffered but for the defendant's Rule 10b-5 violation.

c. A no answer and materiality. Under current law, a no answer does not necessarily mean that the complaint will be dismissed for failure to adequately plead materiality: it is not essential for the plaintiff to allege facts plausibly suggesting that she could prove at trial that a misstatement had an inflationary effect.[146] We have no quarrel with current judicial practice in this regard. As will be discussed in a moment, our analysis calls for a no answer to always result in the complaint being dismissed on loss causation grounds anyway. At the same time, there is a virtue in the term "material" being used consistently across different kinds of actions when courts consider whether there has been a Rule 10b-5 violation. It is desirable in some situations that the SEC be able to bring successful enforcement actions even though it cannot prove that the misstatement involved had an

144. *See supra* note 25 and accompanying text.

145. The possible exception under current case law is due to the confusing language in *Dura* related to proximate cause quoted above, language that needs to be clarified to be sure that judicial practice is in line with our recommendations. *See supra* note 136 and accompanying text.

146. *See supra* Part VI.A.1 and accompanying text.

inflationary effect. So this more liberal test for what is material can be socially useful.[147]

d. A no answer and loss causation. As we have seen, under existing judicial practice, a no answer also does not necessarily mean that the complaint will be dismissed for failure to adequately plead loss causation, and here we do have a quarrel with the courts in what they are currently doing. While the courts currently require the complaint to allege a meaningful price drop at the time of the corrective disclosure, this is not sufficient. Under many circumstances knowable at the time that the motion is decided, such a price drop, as we have seen, does not provide plausible grounds to infer that the plaintiff can prove at trial that the misstatement had an inflationary effect of the required size. Specifically, there are no such grounds unless the plaintiff can allege either (1) a meaningful share price increase relative to the market at the time of the misstatement, *or* (2) the combination of (a) plausible grounds to infer that the market would make negative inferences from silence, (b) plausible grounds to believe that the corrective disclosure's price impact would be a reasonable proxy for the misstatement's inflationary effect, *and* (c) a meaningful share price drop relative to the market at the time of the corrective disclosure. Absent the complaint containing factual allegations to the effect of either (1) or (2), our approach calls for its dismissal even if there was meaningful price drop at the time of the corrective disclosure.

2. Operationalizing Rules 1, 2, and 3 in the motion-to-dismiss context. With the key question in mind, consider how Rules 1, 2, and 3 can guide motion-to-dismiss practice. Recall that it is desirable to grant the motion when the likelihood of a false negative—throwing out a suit where the misstatement's inflationary effect was in fact greater than the threshold—is sufficiently low that continuing the suit is on balance not socially worthwhile.

a. Rule 1. Rule 1 provides that liability should be imposed where the misstatement's price impact appears to be at least as great as the inflation threshold. This would be established at trial by the plaintiff introducing as evidence a convincing event study showing that the market-adjusted price change at the time of the misstatement was positive and statistically significant at the required level, currently 95 percent. Thus, according to ordinary pleading standards, the motion should be denied where the plaintiff alleges facts that provide "plausible grounds to infer" that she will be able to introduce such a convincing study. We suggest that that a plaintiff should be allowed to satisfy

147. The SEC is not required to establish loss causation in Rule 10b-5 enforcement actions. *See, e.g.*, 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.") At trial, to demonstrate that a reasonable investor would attach importance to the misstatement, the SEC could point to the facial importance of the issuer's misstatement and also, where applicable, such things as the extent to which analysts took note of the misstatement at the time it was made. It could also point to evidence of reasons why the misstatement might have been of importance to the reasonable investor but yet the corrective disclosure not have a meaningful price impact, for example insider trading based on the truth, rumors of the true situation circulating in the market, and the existence of a series of corporate announcements that dribbled the truth out in small doses in advance of the full corrective disclosure.

this requirement in one of two ways. One way would be if the misstatement were accompanied by a "meaningful" increase in the issuer's share price relative to the market. Alternatively, the plaintiff could allege that a reputable expert[148] conducted an event study that concludes that the misstatement was accompanied by a market-adjusted price increase that meets the required standard of statistical significance.

For simplicity, the floor for what constitutes "meaningful" should be set at the same level for all cases. The level should be such that, if applied to the average issuer in normal times, when the price increase relative to the market is below this floor, the plaintiff would most times not ultimately be able to introduce at trial the convincing event study needed to succeed pursuant to Rule 1. According to this criterion, a 2 percent share price rise relative to the market might well be a good choice for the floor as to what is "meaningful." Whether the floor is set at 2 percent or some other figure, the underlying idea is to assess, based on easily available and unequivocal data (i.e., the change in the issuer's share price the day of the misstatement and the change of some legally specified broad gauge market index such as the S&P500), whether there is better than just an outside chance that the plaintiff could establish loss causation at trial. Where this is the situation, the plaintiff need not incur the substantial expense of commissioning an event study at this early stage in the litigation to avoid dismissal. But unlike today, where instead there is at best only this outside chance, the plaintiff (or, more realistically, plaintiff's class action counsel) must be willing to incur this expense and obtain the needed result at the outset for the plaintiff to survive a motion to dismiss with regard to loss causation.[149]

This simple crude 2 percent test is a filter as to the likelihood that a plaintiff would be able to introduce at the merits stage of the litigation an event study relating to the price impact of the alleged misstatement that is statistically significant at the 95 percent level. For the average issuer in normal times, this filter is surprisingly effective, with a zero error rate in terms of selecting out suits where the plaintiff would be able to introduce such an event study, and a low error rate in terms of letting through suits where the plaintiff would not be able to do

148. Whether the expert doing the study was reputable could be determined through membership in a professional organization that polices its members for adhering in their work to certain professional standards or through some kind of SEC-administered list.

149. There are two reasons for providing this alternative way for the plaintiff to adequately allege loss causation. One reason is to recognize that without this alternative, there are cases where failing this test—the price change accompanying the misstatement minus what the market did that day being less than the threshold floor—would result in the dismissal of a case where in fact a convincing event study would show that the market-adjusted price change accompanying the misstatement to be statistically significant at the required level. *See infra* notes 150–51. The other reason is to recognize that there can be more to a competently done event study than simply taking the standard deviation of market-adjusted price changes of every trading day over, say, the last year and comparing it to the market-adjusted price change on the day of the misstatement, the simple approach used in *infra* notes 150 and 151. More sophisticated event studies seek to deal with such complications as multiple but related misstatements and the need to abstract out of the standard deviation calculation days with significant, identifiable firm-specific news items.

so.[150] For an issuer with characteristics that deviate from this average, these error rates can, depending on what is happening in the market as a whole, increase, but nevertheless for a significant range of issuers, this 2 percent filter still appears to work reasonably well.[151]

150. The average issuer has by definition a beta of 1.0 (the measure of its price sensitivity to news that moves the market as a whole) and, in a normal year, has a standard deviation for its market-adjusted daily share price changes of about 1.78 percent, *supra* note 62.

The filter's error rate is zero in terms of selecting out suits where the plaintiff in fact *would* be able to introduce an event study that is statistically significant at the 95 percent level. For the event study to be significant at this level, the market-adjusted return will need to be at least +3.49 percent, i.e., (1.96 x 1.78%). *See supra* note 62. Because the issuer's beta is 1, the change in the market index would just equal the adjustment needed to transform the observed price change to the CAPM market-adjusted price change. So any observed price change accompanying the misstatement that would be found to be statistically significant would, after subtracting the change in the index that day, be at least +3.49 percent, well above the +2.00 percent that would be needed to pass through the filter.

The filter's error rate in terms of letting cases survive a motion to dismiss where the plaintiff would in fact *not* be able to introduce an event study that is statistically significant at the 95 percent level depends on the misstatement's actual price impact. For a misstatement by an average issuer that in fact had no impact on price, this error rate would be about 10.6 percent. Put the other way, for a case based on a misstatement that in fact had no price impact, 89.6 percent of the time, use of the filter would lead to the dismissal at the pleadings stage (unless the plaintiff can meet the pleading standards corresponding to Rule 3). These are cases that are, on a net basis, socially costly to continue but that would not be dismissed under current practice.

This 10.6 percent error rate is derived as follows. The probability distribution of observed market-adjusted prices accompanying a misstatement that in fact had no impact on price is a normal distribution with a mean of zero and a standard deviation of 1.78 percent. The misstatements that would pass through the filter but where the plaintiff would ultimately be unable to introduce a statistically significant event study are represented by the portion under the bell shaped curve between 2.00 percent and 3.49 percent. 2.00 percent represents 2.00/1.78 = 1.12 standard deviations, which corresponds to a cumulative probability of 86.9 percent (i.e., 86.9 percent of the time, the observed market-adjusted price change would be less than 2.00 percent). 3.49 percent represents 3.49/1.78 = 1.96 standard deviations, which corresponds to a cumulative probability of 97.5 percent. 97.5% – 86.9% = 10.6%. If the misstatement had in fact a positive price impact, the error rate would be higher. These additional errors, however, would presumably be less socially undesirable because, though not cost justified, there is the gain from deterring misstatements of this sort, through the threat of having to incur litigation costs.

151. To get a sense of the sensitivity of the error rates to such deviations, suppose that an issuer had a beta of .5 rather than 1.0, but the standard deviation of the issuer's daily market-adjusted return still equals the average issuer's 1.78 percent. What will happen to the filter's error rate in terms of selecting out suits where the plaintiff in fact has the ability to introduce an event study that was statistically significant at the 95 percent level? This error rate can now be greater than zero, but only if the market index the day of the misstatement goes up by 3 percent or more. To see why, note that for the plaintiff to be able to introduce such a study, the observed percentage price change ("OPC") must be at least 4.99 percent, which is what is required for the market-adjusted percentage price ("MAPC") ≥ OPC – (.5 x 3.0), i.e. ≥ 3.49%, i.e., ≥ 1.96 x 1.78%. However, a market increase of 3 percent or more is fairly rare. The current standard deviation of the S&P is 1.55 percent, https://www.macroaxis.com/invest/technicalIndicator/filter/Standard-Deviation. This means that 1.96 standard deviations equal almost exactly 3 percent. So such a decline in the market as a whole only happens 2.5 percent of the time or one day in forty. No such error can occur if the market goes down because, compared to beta being 1.00, beta being .5 makes it more likely that observed price change minus the index price change will exceed 2 percent, and there was already no chance of any suits being thrown out for issuers with a beta of 1.00. If instead this issuer's beta was 1.5, comparable reasoning shows that the results would be the mirror image in terms of the error rate. Now it is the index going down that can lead to the error, but only if it goes down by 3 percent or more, which is as rare as it going up by 3 percent. No such error can occur if the index goes up. A substantial majority of issuers have betas between .5 and 1.5. In sum, a case based on a misstatement accompanied by a

b. Rule 2. Rule 2 provides that liability should not be imposed where (i) the misstatement's price impact appears to be smaller than the inflation threshold, and (ii) the market would not have drawn negative inferences from silence. At the motion-to-dismiss stage, a failure to meet the pleading requirements under Rule 1 would satisfy the first prong of Rule 2. The burden concerning the second prong should be on the plaintiff because ultimately the plaintiff needs to prove that the misstatement had an inflationary effect at or above the inflation threshold, and if the misstatement's price impact indicates that it did not, she needs to explain why this finding should be ignored. So, at the motion-to-dismiss stage, the question associated with the second prong is whether the complaint alleges facts providing plausible grounds to infer that the market would have made negative inferences if the issuer had stayed silent instead of making the misstatement.[152] If it does not allege such facts, there is no excuse for ignoring what the misstatement's price impact indicates, and the complaint should be dismissed. If it does allege such facts, attention should turn to Rule 3.

c. Rule 3. Rule 3 provides that where (i) the misstatement's price impact is less than the inflation threshold, but (ii) the market would have drawn negative inferences from silence, liability should be imposed if and only if the corrective disclosure's price impact is a reliable proxy and appears to be at least as great as the inflation threshold. At the motion-to-dismiss stage, Rule 3 comes into play when Rule 1's pleading requirements to avoid dismissal is not met, but Rule 2's pleading requirements to avoid dismissal are met. Under these circumstances, the pleading question under Rule 3 is whether (i) the alleged corrective disclosure on its face would appear to have removed any inflation previously in price due to the misstatement, (ii) the corrective disclosure was accompanied by a meaningful drop in the issuer's share price relative to the market,[153] and (iii) the complaint alleges facts providing plausible grounds to infer that the news constituting the alleged corrective disclosure does not include information significantly contributing to this share price decline apart from what in this news

statistically significant positive price made by most average standard deviation issuers on most days will not be selected out by this filter.

This kind of error—the filter selecting out cases where the plaintiff will be able to introduce a statistically significant event study—can also sometimes be introduced if the issuer's standard deviation of market-adjusted price changes is smaller than the normal year average of 1.78 percent, though, for an issuer with a beta of 1.00, it must be substantially smaller. For such an issuer, if the standard deviation was below 1.02, a market-adjusted price change that was statistically significant could involve an observed price change of less than 2 percent. In any event, even if the filter selects out some cases where the plaintiff in fact would be able to introduce statistically significant event study results, the plaintiff, under our proposed approach, still has the option of alleging that an event study with such results has been undertaken.

Deviations from the average issuer can also affect the filter's error rate in terms of letting cases survive a motion to dismiss where the plaintiff would in fact *not* be able to introduce an event study that is statistically at the 95 percent level. For an issuer with a beta of 1, the issuer's standard deviation being lower than 1.78 percent would increase this error rate, and being greater than 1.78 percent would lower it.

152. See *supra* Part IV.A.3 for a discussion of the kinds of situations that could lead the market to make negative inferences from silence.

153. "Meaningful" would have the same meaning as with regard to a share price increase at the time of the misstatement. *See supra* Part VI.B.2.a.

eliminates the misstatement's inflation in price (i.e., grounds to infer that the corrective disclosure's price impact is a reasonably reliable proxy for the misstatement's inflationary effect). If the answer is yes to all three prongs, the motion should be denied. Otherwise the complaint should be dismissed.

d. Implications for event-driven suits. The foregoing discussion suggests that under Rules 1, 2, and 3, any event-driven suit where the misstatement was not accompanied by a meaningful increase in the issuer's share price relative to the market (i.e., where the motion is not denied pursuant to Rule 1) will likely be terminated at the motion-to-dismiss stage. This is because the only complaints that run the gauntlet of Rules 2 and 3 and survive dismissal are ones where, among other things, the news constituting the corrective disclosure does not include information significantly contributing to this share price decline apart from what in the news eliminates the misstatement's inflation in price. That will generally not be the case where the misstatement relates to a situation where there is only a risk of a disaster and the disaster announcement is the corrective disclosure. As we have seen, much of the decline in price accompanying the disaster announcement is due to a realization of this risk and would have occurred whether or not the issuer made the misstatement.[154] The dismissal is the socially appropriate result because private damages liability should not be imposed if we do not know whether the misstatement's inflationary effect was greater than the inflation threshold, and in this kind of case, there is no way of telling because both proxies for the misstatement's inflationary effect are seriously flawed.

C. Class Certification

Recall that the availability of the fraud-on-the-market cause of action is essential for a Rule 10b-5 misstatement-based civil damages suit to proceed as a class action. Otherwise each plaintiff would individually be required to prove that she would not have purchased but for the misstatement, i.e., she would need to establish causation pursuant to the traditional reliance-based theory whereby the misstatement damaged the plaintiff by inducing her to purchase. In that event, the need to make individual proof would violate Federal Rule of Civil Procedure 23(b)(3)'s requirement that common issues of fact and law predominate for an action to proceed on a class. The fraud-on-the-market doctrine's causal theory—that the misstatement damaged the plaintiff by making her pay too much—gets around this problem since a class can be formed by those who share in common that they have been injured by having purchased shares at an inflated price. Recall also that in almost all cases, denial of class status effectively terminates the suit.[155]

In *Basic Inc. v. Levinson,* where the Supreme Court originally blessed the then-new fraud-on-the-market doctrine, the Court made clear that the doctrine is

154. *See supra* Part V.C.4.
155. *See supra* notes 12 and 14 and accompanying text.

based on this different causal relationship between the misstatement and the plaintiff's injury, and hence it really creates a new cause of action. And the prerequisites that the Court sets out for plaintiffs wishing to invoke the doctrine—the issuer's shares trading in an efficient market and the misstatement being public and material—reflect this new causal relationship because these prerequisites describe a situation where it can be assumed that the misstatement inflated the issuer's share price. The Court, however, packaged the doctrine not as a new cause of action, but as a rebuttable presumption. It stated that, among various ways, this presumption could be rebutted by "any showing that severs the link between the alleged misrepresentation and . . . the price . . . paid . . . by the plaintiff."[156]

1. The four recent Supreme Court cases relating to class certification in securities cases. In recent years, defendants have increasingly used the plaintiff's motion for class certification as an occasion to try to block suits by preventing them from proceeding on a class basis. They argue either that not all the prerequisites have been met, or that the presumption has been rebutted because the misstatement had no impact on price. This practice has led to a series of U.S. Supreme Court cases over the last decade. In *Amgen*,[157] the Court decided that although materiality was a prerequisite to invoking the doctrine, it was an issue in common among all the plaintiffs the determination of which should be left to the merits stage.[158] In *Halliburton I*,[159] the Court decided that loss causation was also a common issue and should also be left to the merits stage.[160] The same case came up to the Supreme Court on a second appeal, and in *Halliburton II*,[161] the Court ruled that the "defendants must be afforded an opportunity before class certification to defeat the presumption through evidence that an alleged misrepresentation did not actually affect the market price of the stock."[162] And most recently, in *Goldman Sachs Group, Inc. v. Arkansas Teacher Retirement System*,[163] the Court held that when a defendant seeks to rebut the doctrine's presumption of reliance on the basis of the misstatement lacking any price impact, the burden of persuasion by a preponderance of the evidence is on the defendant.[164] However, it further ruled that in deciding the class certification motion on these grounds, a district court should take into account as relevant evidence the generic nature of the alleged misstatement.[165]

2. Our framework favors accelerating the determination of the misstatement's inflationary effect. Stripped of their doctrinal labels, all four of these U.S. Supreme Court cases relate to the central questions addressed by this

156. Basic Inc. v. Levinson, 485 U.S. 224, 248 (1988).
157. Amgen Inc. v. Conn. Ret. Plans & Trust Funds, 568 U.S. 455 (2011).
158. *Id.* at 466–68.
159. Erica P. John Fund, Inc. v. Halliburton Co., 131 S. Ct. 2179 (2011).
160. *Id.* at 2186.
161. Halliburton Co. v. Erica P. John Fund, Inc., 134 S. Ct. 2398, 2417 (2014).
162. *Id.* at 2417.
163. 141 S. Ct. 1951 (2021).
164. *Id.* at 1963.
165. *Id.* at 1961.

Article: how to determine whether an alleged misstatement had an inflationary effect greater than the inflation threshold and when in the adjudicatory process this determination should occur. Our social-welfare-based framework suggests that, for cases surviving a motion to dismiss, the best point for each side to present its econometric evidence concerning the misstatement's inflationary effect is at the very next stage, class certification. The production of this evidence, though expensive, is typically not nearly as expensive for each side as is discovery related to the issues of falsity and scienter, an activity that typically will not start until after class certification. This econometric evidence will need to be presented at some point. If, at that point, the plaintiff is unable to produce a convincing event study showing that the market-adjusted price change accompanying the appropriate proxy (the misstatement, for cases surviving the motion to dismiss pursuant to Rule 1, and the corrective disclosure, for those doing so pursuant to Rule 3) is statistically significant at the cutoff level, currently 95 percent, the case should end. It is better to see whether the plaintiff is able to do so before, rather than after, the highly expensive discovery stage. Such discovery will ultimately have served no purpose if the plaintiff is unable to demonstrate the needed inflationary effect, and this is not found out until after discovery.

3. The consequences of the four U.S. Supreme Court cases. In the four cases, the U.S. Supreme Court has been less willing to look through to the economic substance behind doctrinal labels than we are, and as a result has stumbled around somewhat. It has now landed, however, at a spot not too far from what we recommend here.

a. Price impact. Consider first its decisions concerning price impact. There is a basic tension between *Halliburton I* and *Halliburton II. Halliburton I* assigns determining loss causation to the merits stage, rather than to class certification. This determination requires assessing whether the misstatement had a price impact. *Halliburton II* assigns to class certification the determination of whether there is a price-based basis for rebutting the fraud-on-the-market presumption, i.e., assessing whether the misstatement did not have a price impact. The only potential differences in these two inquiries are the burden of going forward and the burden of persuasion, with the Court in *Goldman Sachs* putting both burdens on the defendant at the class certification stage, the opposite of the situation at the merits stage.

The Court says its ruling putting the burden of going forward on the defendant would only matter "when the evidence was in equipoise—a situation that should rarely arise."[166] The Court's view of how the presentation of econometric evidence would work appears to be as follows. Defendant would meet its burden of going forward by introducing an event study showing the lack of statistical significance of the market-adjusted price change accompanying what the

166. *Id.* at 1963. The Court implicitly rejected what would have been a much more consequential approach to what the burden of persuasion on lack of price impact entails for the defendant. This alternative approach would require the defendant to rule out the possibility that the misstatement did have an impact on price with the same level of statistical confidence as the plaintiff is required to rule out the possibility that it did not. *See* Fox, *supra* note 16, at 447–54.

defendant at least plausibly argues is the appropriate proxy for the misstatement's inflationary effect. This evidence would also meet the defendant's burden of persuasion unless the plaintiff could introduce an event study showing the statistical significance of the market-adjusted price change at the time of what, in turn, it at least plausibly could argue is the appropriate proxy. If the plaintiff introduced such a study but it related to the other proxy, the court would need to decide which proxy to use, giving the plaintiff the equipoise-breaking advantage of the preponderance of the evidence standard. The court would need to do the same with regard to the two sides' event studies as to whether the market-adjusted price change was statistically significant.

Our approach would parallel that of the Court's except that, guided by our three simple Rules, the burden of persuasion would be on the plaintiff, as it would be in any event if loss causation were determined at the merits stage.

b. Materiality. In *Goldman Sachs*, the Supreme Court said that while materiality is, as ruled in *Amgen*, a matter to be determined at the merits stage, the court deciding the certification motion could take into account the generic nature of the misstatement in deciding whether it had any price impact. It is difficult to see how this evidence concerning the alleged misstatement's generic nature could be blended with econometric evidence in a kind of single-stage price impact determination. Rather, if it is clear on the face of a misstatement that a reasonable investor would not consider the statement significant, it cannot be expected to have an impact on price, which means event study evidence from each side is unnecessary. This is the same question as whether the misstatement is immaterial as a matter of law, something that would usually be decided at the motion-to-dismiss stage. Thus, it seems as though the Court is giving the defendant a second chance to revisit a matter that should have been decided earlier. Still, doctrinal labels aside, it is valuable that the Court has recognized the potentiality of a misstatement being non-actionable because its generic nature suggests it would not have had price impact.

Because the denial of a motion to dismiss is not open to an interlocutory appeal, but the granting of class certification is, the Court's ruling here can make a difference for a second reason as well. Consider a case where a district court denies a motion to dismiss despite the defendant's claim that the alleged misstatement lacks materiality due to its generic nature. If this district court later certifies the class, the defendant has a route to raise on appeal, prior to the beginning of discovery and its associated large costs, the claim that this generic nature should terminate the suit.

VII. Conclusion

This Article suggests that many fraud-on-the-market suits, particularly the recent wave of event-driven suits, get past the pleading stage even though it is not plausible that the plaintiffs will be able to properly prove at trial that they suffered a loss. As a consequence, society incurs the significant costs of continued litigation without a sufficient corresponding social benefit. These cases get past the pleading stage as the result of two factors. One factor is the current very liberal rule concerning what must be alleged for the complaint to be sufficient with respect to materiality. As a result, few complaints are dismissed on materiality grounds with the narrow exception of alleged misstatements deemed so vague and generic as to be considered "puffing." The other factor is that loss causation is either ignored entirely at the motion-to-dismiss stage or the complaint is found sufficient with respect to loss causation simply based on the price drop at the time of the alleged corrective disclosure.

We have no problem with current judicial practice when it comes to materiality, but we do with regard to loss causation. In many of the cases that survive the motion to dismiss, the market-adjusted price drop at the time of the disaster announcement is, for reasons knowable at the time the motion is decided, simply not a good measure of whether the plaintiff has overpaid due to the misstatement, and it is this overpayment than can lead an investor to experience a loss.

This Article was motivated by the problems that courts currently have dealing with the rise of event-driven cases. Like many stresses to a system, the stress to the fraud-on-the-market liability system posed by event-driven suits can inform thinking about the system more generally and we have done so in this Article. One more general observation is that, due in part perhaps to the Supreme Court's confusing language about proximate cause in *Dura*, courts often speak as though their focus on the price drop at the time of the announcement of the alleged corrective disclosure is because this price drop is the source of the plaintiff's "loss." The loss, however, really comes from the plaintiffs paying too much due to the misstatement and not recovering this overpayment through sale before the inflation disappears. The proper function, if any, of considering the price impact of the corrective disclosure is to try to determine whether the misstatement had a meaningful inflationary effect on the issuer's share price in the first place. Often the corrective disclosure's price impact will not be helpful in this regard because some significant part of the drop is due to the fact that the news alleged to constitute the corrective disclosure has price-decreasing elements in it beyond the elimination of any misstatement-caused inflation. This problem is endemic with event-driven suits.

Another related more general observation is that there is no reason to even consider the corrective disclosure's price impact unless there is reason to believe that the market would made negative inferences had the issuer stay silent instead of making the misstatement. In some cases where the misstatement has little or no positive price impact, the price maintenance theory provides an appropriate reason to shift focus instead to the corrective disclosure's price impact. The doctrine is applied unthinkingly and in too broad a set of cases, however. This overly broad application, with the resultant shift of attention to the corrective disclosure's price impact, is unfortunate. Even in a non-event driven case, the corrective disclosure's price impact may overstate how much the plaintiffs overpaid because the counterfactual should be the consequences of silence, not a revelation of the truth. And in an event-driven case, the overstatement is likely to be extreme. In contrast, where there would be no negative inferences from silence, the misstatement's price impact is the perfect proxy for its inflationary effect. In that event, the misstatement's price impact is the proper proxy for assessing whether the extra amount, if any, that the plaintiff paid due to the misstatement was great enough to justify imposing liability.

The constraints suggested here on event-driven suits, and in some instances on fraud-on-the-market suits more generally, need not leave undeterred the types of misstatements that such suits would no longer reach. Where such misstatements on their face appear to be material, they may be good candidates for successful SEC actions. The SEC must plead and prove materiality, but not loss causation. As we have seen, current rules concerning pleading and proving materiality are more liberal than what we recommend concerning loss causation. Under current law, materiality can be established by alleging and proving facts other than a misstatement's or corrective disclosure's price impact. These other routes to alleging and proving materiality are more subjective, however. The subjectivity of these other routes suggests that the initiation of litigation based on them is better handled by a public agency with prosecutorial discretion, rather than by a profit-driven plaintiff's bar. Indeed, one final observation is that if judicial practice is reshaped in the fashion we recommend, the SEC should affirmatively be on the lookout for such cases, and its enforcement budget should be enhanced to give it the means to do so.