Washington University Law Review

Volume 93
Issue 2 *New Directions for Corporate and Securities Litigation*

2015

Price Impact, Materiality, and Halliburton II

Allen Ferrell
Harvard Law School

Andrew Roper
Stanford Law School

PRICE IMPACT, MATERIALITY, AND *HALLIBURTON II*

ALLEN FERRELL[*]
ANDREW ROPER[**]

ABSTRACT

The Supreme Court decision in Halliburton Co. v. Erica P. John Fund, Inc.*, 134 S. Ct. 2398 (2014), reaffirmed the availability of the fraud-on-the-market presumption of "reliance" for purposes of a Rule 10b-5 class certification. At the same time, the Court held that defendants could rebut the presumption if they could provide "direct evidence" that the alleged misrepresentations did not in fact impact the price of the security (i.e., a lack of price impact). In this Article we discuss various issues that have arisen in lower court rulings that have addressed* Halliburton *price impact arguments. These issues include the relationship between materiality and price impact, the distinction between hypothetical versus actual changes in the total mix of information made available to the market, the use of event studies, and some lower courts' refusal to consider certain types of economic evidence in the context of price impact arguments.*

I. INTRODUCTION

The showing placed on plaintiffs for obtaining class certification in a securities action is a matter of importance to all involved: plaintiffs, defendants, insurers, the legal profession, and—given the broad impact securities class action litigation can have—the business community as a whole. One of the showings plaintiffs need to make at class certification for claims involving Rule 10b-5—the most important anti-fraud rule in securities law—is that class members "relied" on the veracity of the alleged misrepresentations. The fraud-on-the-market presumption, adopted by the Supreme Court in its landmark 1988 decision *Basic Inc. v. Levinson*,[1] enables plaintiffs to establish Rule 10b-5 "reliance" on a class-

* Greenfield Professor of Securities Law, Harvard Law School; PhD.

** Lecturer in Law, Stanford Law School; Executive Vice President and Head of Silicon Valley Office, Compass Lexecon; PhD. Both authors have been involved as experts in matters involving price impact and securities damages.

1. 485 U.S. 224 (1988).

wide basis. The presumption that establishes class-wide "reliance" is that investors relied on the integrity of the security's price, a price which is presumed to have been distorted by the alleged misrepresentation. With such a presumption in place, plaintiffs are thereby relieved of having to show that all class members were even aware of the alleged misrepresentation, much less individually "relied" on the veracity of the alleged misrepresentation at the time of purchase. Given its central role in enabling plaintiffs to obtain class certification in Rule 10b-5 matters, it is not surprising that the fraud-on-the-market presumption has been a mainstay of securities class action litigation ever since *Basic Inc. v. Levinson* was decided.

It was therefore with much interest that the Supreme Court granted certiorari in *Halliburton Co. v. Erica P. John Fund, Inc.* (*Halliburton II*)[2] in order to consider whether *Basic Inc.*'s endorsement of the fraud-on-the-market presumption should be overruled. Six Justices joined the majority opinion authored by Chief Justice Roberts reaffirming *Basic Inc.*, with three Justices (Alito, Scalia, and Thomas) concurring but arguing for overruling *Basic Inc*.[3] While reaffirming the fraud-on-the-market presumption, the Court did modify the traditional understanding of the presumption. Specifically, the Court held that if defendants can show that a security's price was not in fact distorted by the alleged misrepresentation—that is, the alleged misrepresentation had no price impact—then the fraud-on-the-market presumption would be rebutted.[4]

We will focus in this Article on the issue of "price impact."[5] We will frame our discussion by focusing on one of the most perplexing aspects of

---

2. 134 S. Ct. 2398 (2014).

3. *Id.* at 2417–18 (Thomas, J., concurring).

4. *Id.* at 2414 ("[Defendant] contends that defendants should at least be allowed to defeat the presumption at the class certification stage through evidence that the misrepresentation did not in fact affect the stock price. We agree."). It is worth noting that the Second Circuit had allowed defendants the opportunity to show a lack of price impact at class certification. *In re* Salomon Analyst Metromedia Litig., 544 F.3d 474, 484–85 (2d Cir. 2008), *abrogated by* Amgen Inc. v. Conn. Ret. Plans & Trust Funds, 133 S. Ct. 1184 (2013).

5. In this Article, we focus on assessing price impact at the class certification stage. Other papers have explored the role of event studies in assessing other elements of a Rule 10b-5 cause of action. For example, Professor Fischel early on explored the role of event studies in assessing damages and loss causation. Daniel R. Fischel, *Use of Modern Finance Theory in Securities Fraud Cases Involving Actively Traded Securities*, 38 BUS. LAW. 1, 2 (1982). In another paper, Bradford Cornell and Gregory Morgan examine the role of event studies in assessing damages prior to the Supreme Court's 2005 decision in *Dura Pharmaceuticals, Inc. v. Broudo*, 544 U.S. 336 (2005). Bradford Cornell & R. Gregory Morgan, *Using Finance Theory to Measure Damages in Fraud on the Market Cases*, 37 UCLA L. REV. 883, 883–89 (1990). Moreover, Allen Ferrell and Atanu Saha examine the role of event studies in assessing loss causation and post-*Dura* recoverable damages. Allen Ferrell & Atanu Saha, *The Loss Causation Requirement for Rule 10b-5 Causes of Action: The Implications of*

the Court's price impact discussion: the relationship between price impact arguments and arguments concerning the "materiality" of the alleged misrepresentations. The reason why this relationship is perplexing is that the Supreme Court in its *Amgen* decision,[6] decided just one year prior to *Halliburton II*, held that "materiality" arguments cannot be considered at class certification. Specifically, the Court held that "such proof [of materiality] is not a prerequisite to class certification," particularly in a securities fraud action based on the fraud-on-the-market presumption.[7] So what is the distinction between an argument concerning the "materiality" of an alleged misrepresentation, which clearly cannot be considered at class certification under *Amgen*, and an argument concerning whether an alleged material misrepresentation impacted the security's price, which clearly can be considered at class certification under *Halliburton II*? In explaining this distinction, the *Halliburton II* Court merely said, "materiality is a discrete issue that can be resolved in isolation from the other prerequisites" and thus "can be wholly confined to the merits stage. . . . Price impact is different."[8] The distinction between materiality and price impact arguments is an issue that the lower courts applying *Halliburton II* have grappled with.

Another interesting and related aspect of *Halliburton II*'s price impact discussion is what type of economic evidence can be considered in addressing the issue of price impact at class certification? On this issue, the *Halliburton II* Court held that defendants can introduce "direct evidence" showing a lack of price impact,[9] but did relatively little to identify what that evidence might consist of. This is an issue that has also come up in the lower court rulings applying *Halliburton II*. We will explore these related aspects of *Halliburton II*'s price impact discussion, and how they have played out in the lower courts to date, through a series of examples.

Out of our discussion of *Halliburton II*'s price impact holding, there are three particularly important lessons we wish to draw. First, the distinction between materiality and price impact made by the Supreme Court in *Amgen* and *Halliburton II* might functionally represent a way of

Dura Pharmaceuticals, Inc. v. Broudo, 63 BUS. LAW. 163, 163–66 (2007). Finally, Lucian Bebchuk and Allen Ferrell discussed the relationship between market efficiency and *Basic Inc.*'s fraud-on-the-market presumption. Lucian A. Bebchuk & Allen Ferrell, *Rethinking* Basic, 69 BUS. LAW. 671, 672–76 (2014).

6. *Amgen*, 133 S. Ct. at 1191.

7. *Id.* at 1191, 1197.

8. *Halliburton II*, 134 S. Ct. at 2416.

9. *Id.* at 2417.

sorting at class certification different types of materiality claims depending on their methods of proof. Second, it is difficult to justify the insistence of lower courts applying *Halliburton II* that while some disclosures, in addition to the actual disclosure containing the alleged misrepresentation, can be examined in determining whether there is price impact for class certification purposes, other additional disclosures cannot be so considered. Third, the potential conceptual importance when defining price impact of the distinction between *actual* changes in the total mix of information available to the market[10] and *hypothetical* changes in the total mix of information available to the market.[11] As we will discuss, the economic evidence relevant to assessing price impact can be a function of whether it is the price impact of actual or hypothetical changes in the total mix of information available to the market that is at issue.

We will begin our discussion in Part II by examining in more detail the *Halliburton II* opinion. Part III describes the lower court opinions to date applying *Halliburton II*'s price impact framework. Part IV focuses on the relationship between materiality and price impact arguments from both a legal and economic perspective. Part V then considers assessing price impact (and materiality) arguments using an event study (i.e., a statistical analysis of whether there were firm-specific price movements on a particular date). We will consider event study results and their relationship to the question of price impact for examples in which there are no statistically significant firm-specific changes in the security's price, and event study results for examples in which there is a potentially important distinction between actual and hypothetical changes in the total mix of information available to the market. Finally, Part VI will conclude with some parting thoughts.

II. THE *HALLIBURTON II* DECISION

In *Halliburton II*, the Supreme Court refused to overrule *Basic Inc.* and its endorsement of the fraud-on-the market presumption, explaining:

> Halliburton urges us to overrule *Basic*'s presumption of reliance and to instead require every securities fraud plaintiff to prove that he actually relied on the defendant's misrepresentation in deciding to

---

10. For example, as a result of a public statement containing a misrepresentation, which might then have resulted in a different price for the security.

11. In other words, the changes in the information available to the market that would have hypothetically occurred if the alleged misrepresentation had not occurred, which might then have resulted in a different price for the security.

> buy or sell a company's stock. Before overturning a long-settled precedent, however, we require [a] "special justification," not just an argument that the precedent was wrongly decided. Halliburton has failed to make that showing.[12]

Rather, the Court held that plaintiffs can avail themselves of the *Basic Inc.* fraud-on-the-market presumption, and hence satisfy the requirement of establishing Rule 10b-5 reliance for purposes of class certification, if plaintiffs show: (1) the alleged misrepresentations were publicly known; (2) the alleged misrepresentations were material; and (3) the stock traded in an efficient market.[13] The Court explained that these prerequisites collectively establish, albeit via indirect proof, the "fundamental premise" of the fraud-on-the-market presumption: that the alleged misrepresentation did in fact have an impact on the security's market price.[14] With such a showing, the "fundamental premise" of *Basic Inc.* is presumed to be satisfied, thus entitling plaintiffs to invoke the fraud-on-the-market presumption of "reliance." The Court explained that a plaintiff's reliance on "indirect proof" is a sufficient basis for plaintiffs' invocation of the presumption, as requiring direct proof "would place an unnecessarily unrealistic evidentiary burden on the . . . plaintiff who has traded on an impersonal market."[15]

---

12. *Id.* at 2407 (quoting Dickerson v. United States, 530 U.S. 428, 443 (2000) (internal quotation marks omitted)).

13. *Id.* at 2408. Courts have generally agreed that the relevant form of the efficient market hypothesis is semi-strong form efficiency. *See, e.g.*, *In re* Countrywide Fin. Corp. Sec. Litig., 273 F.R.D. 586, 612 (C.D. Cal. 2009) (citing *In re* PolyMedica Corp. Sec. Litig., 432 F.3d 1, 10 n.16 (1st Cir. 2005)) ("The cases agree that finance theory's hypothesis referred to as 'semi-strong efficiency' is the closest equivalent to the efficient market relied on by *Basic* that can be tested."). In a semi-strong form efficient market, information is quickly impounded into a security price such that investors cannot earn abnormal profits trading on past information. *See generally* Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383, 383 (1970) ("[S]emi-strong form tests [are those] in which the concern is whether prices efficiently adjust to other information that is obviously publicly available."); Eugene F. Fama, *Efficient Capital Markets: II*, 46 J. FIN. 1575, 1576 (1991) ("Semi-strong-form tests: [ ]How quickly do security prices reflect public information announcements?"). Semi-strong form efficiency implies that once information is released, it is impounded into the stock price going forward; investors cannot earn abnormal profits on average from trading on the same past information. Thus, as a matter of economics, plaintiffs would need to show that the market for a security was semi-strong form efficient *throughout* the class period—as opposed to *generally*—in order to rely on a presumption that all investors who purchased *throughout* purchased at a market price impacted by the alleged misrepresentation.

14. *Halliburton II*, 134 S. Ct. at 2414. There is a fourth prerequisite mentioned by the Court—that "the plaintiff[s] traded the stock between the time the misrepresentations were made and when the truth was revealed"—which goes to the definition of the class. *Id.* at 2408.

15. *Id.* at 2402 (quoting Basic Inc. v. Levinson, 485 U.S. 224, 245 (1988)) (internal quotation marks omitted).

So how difficult is it for plaintiffs to show that these three prerequisites are satisfied? The answer in many cases is not very. Whether the alleged misrepresentation was publicly known (prerequisite 1) is rarely contested. As for materiality (prerequisite 2), the Supreme Court in its *Amgen* decision, decided the prior year, held that "[b]ecause the question of materiality is common to the class . . . [plaintiffs are] not required to prove the materiality of [defendant]'s alleged misrepresentations and omissions at the class-certification stage."[16] Instead, the Court held that materiality is a merits issue and therefore should be adjudicated only after class certification has been granted.[17] In short, the question of "materiality" is not subject to evidentiary challenge by defendants at class certification. Finally, while market efficiency (prerequisite 3) is on occasion an important contested issue, it is often not. Courts have adopted a number of factors, most prominently the well-known *Cammer* and *Krogman* factors, to assess the efficiency of the market for a security for class certification purposes.[18] These court-adopted factors can often effectively prevent defendants from successfully challenging market efficiency for class certification purposes even though these court-adopted factors have not been shown to provide a reliable test of market efficiency using commonly accepted econometric methods in the literature.

Given all of this, it is not surprising that rebutting the *Basic Inc.* presumption has proven very difficult. Indeed, Justice White, in his opinion in *Basic Inc.*, presciently predicted that "rebuttal is virtually

---

16. Amgen Inc. v. Conn. Ret. Plans & Trust Funds, 133 S. Ct. 1184, 1197 (2013).

17. *Id.*

18. *See* Cammer v. Bloom, 711 F. Supp. 1264, 1286–87 (D.N.J. 1989); Krogman v. Sterritt, 202 F.R.D. 467, 474–78 (N.D. Tex. 2001). In particular, courts have often relied on the five *Cammer* factors in assessing plaintiffs' claims of market efficiency: (1) average weekly trading volume; (2) number of securities analysts following and reporting on a company's stock; (3) the presence of market makers and arbitrageurs; (4) the company's eligibility to file a Form S-3 Registration statement; and (5) a cause-and-effect relationship between corporate disclosures and stock price changes. *Cammer*, 711 F. Supp. at 1286–87. For example, one study documents that of 63 decisions on market efficiency between 2002 and 2011, courts ruled in favor of market efficiency in 54 of the cases—that is 85% of the time. Elaine Buckberg, *Do Courts Count* Cammer *Factors?*, HARV. L. SCH. F. ON CORP. GOVERNANCE & FIN. REG. (Aug. 23, 2012), http://corpgov.law.harvard.edu/2012/08/23/do-courts-count-cammer-factors/, *archived at* http://perma.cc/PRN7-CBNG. The same study found that courts' decisions are consistent with a simple counting of *Cammer* factors. *Id.* The finance literature does not support viewing the first four *Cammer* factors as formulated and applied as constituting a reliable test for establishing semi-strong form market efficiency as they are commonly invoked prior to class certification. The fifth *Cammer* factor (a cause-and-effect relationship between public news and changes in stock price) can provide a more reliable indication of market efficiency when properly evaluated. However, courts' understanding of what constitutes a reliable indication can vary substantially between cases and between courts.

impossible in all but the most extraordinary case."[19] Professor Grundfest reports that there have been approximately six cases where defendants successfully rebutted the *Basic Inc.* presumption.[20] To be fair, when defendants do challenge market efficiency, they do so in order to challenge whether the *Basic Inc.* presumption applies in the first place, rather than to rebut the presumption that an alleged material misrepresentation impacted the stock price. Accordingly, solely focusing on successful rebuttals of the fraud-on-the-market presumption will overstate the ease with which plaintiffs can enjoy the *Basic Inc.* presumption. Nevertheless, it remains true that the fraud-on-the-market presumption has proven enormously influential in empowering securities class action litigation in the years since *Basic Inc.* was decided. Consistent with a continuation of this status quo, Justice Ginsburg in her concurrence in *Halliburton II* opined that "[t]he Court's judgment, therefore, should impose no heavy toll on securities-fraud plaintiffs with tenable claims."[21]

But the story does not quite end there. The *Halliburton II* Court further held that defendants can rebut the *Basic Inc.* fraud-on-the-market presumption if defendants introduce "direct evidence" that the alleged misrepresentation did not impact the market price even if plaintiffs have shown that all three prerequisites (publicity, materiality, and market efficiency) are satisfied.[22] The Court reasoned that since *Basic Inc.* allows plaintiffs to establish price impact via "indirect proof," defendants should be afforded the opportunity to proffer at class certification "more salient evidence showing that the alleged misrepresentation did not actually affect the stock's market price and, consequently, that the *Basic* presumption does not apply."[23]

There are at least two important questions left open by the *Halliburton II* Court's discussion of price impact. What is the difference between arguments concerning price impact, which can now be litigated at class certification, and arguments concerning "materiality," which under *Amgen* cannot be litigated at class certification? To put a finer point on the question, how can an alleged material misrepresentation in a case involving secondary market purchases in an efficient market be "material"

---

19. *Basic*, 485 U.S. at 256 n.7 (White, J., concurring in part and dissenting in part).

20. Joseph A. Grundfest, *Damages and Reliance Under Section 10(b) of the Exchange Act*, 69 BUS. LAW. 307, 360 (2014) ("Cases in which the presumption has been rebutted once it attaches are thus as rare as hen's teeth. There appear to be only six instances . . . .").

21. Halliburton Co. v. Erica P. John Fund, Inc. (*Halliburton II*), 134 S. Ct. 2398, 2417 (2014) (Ginsburg, J., concurring).

22. *Id.* at 2415–16.

23. *Id.* at 2416.

and yet have no price impact associated with that misrepresentation? A second and related question is what type of "direct" economic evidence suffices to successfully rebut the *Basic Inc.* presumption? Beyond its mention of event studies, the Court did not define or circumscribe the type of economic evidence that defendants can proffer as "direct evidence" of a lack of price impact. These are both questions, as we will now document, that the lower courts have faced in applying *Halliburton II*.

III. POST-*HALLIBURTON II* LOWER COURT DECISIONS ADDRESSING PRICE IMPACT

In order to identify how *Halliburton II*'s price impact inquiry has been understood by lower courts in securities matters at class certification, we pulled all federal court opinions that cite to *Halliburton II*. Out of this sample, we then identified those cases that address defendants' attempt to rebut the fraud-on-the-market presumption at class certification by showing a lack of price impact. We identify a total of eight such cases. Listed in Figure 1 are the eight cases, the dates of the decisions, and whether defendants were successful in rebutting the presumption.

FIGURE 1. CASES AND DEFENDANTS' SUCCESS IN REBUTTAL

Case	Docket Number	Date	Presumption Rebutted?
IBEW v. Best Buy[24] D. Minn	0:11-cv-00429-DWF-FLN	August 6, 2014	No
McIntire v. China MediaExpress S.D. New York	1:11–cv–00804-VM-GWG	August 15, 2014	No
Aranaz v. Catalyst Pharmaceutical S.D. Florida	1:13-cv-23878-UU	September 29, 2014	No
Wallace v. IntraLinks S.D. New York	1:11-cv-08861-TPG, 302 F.R.D. 310	September 30, 2014	No
Local 703 v. Regions Financial N.D. Alabama	2:10-cv-02847-IPJ	November 19, 2014	No
In re Bridgeport Education S.D. California	13-cv-2947 JM (JLB); 13-cv-2950 JM (JLB)	January 15, 2015	No
Halliburton II on remand N.D. Texas	3:02-cv-01152-M	July 25, 2015	Partially
In re Goldman Sachs Group, Inc. S.D. New York	1:10-cv-03461-PAC	September 24, 2015	No

24. After this Article was written, the Eighth Circuit reversed the lower court ruling in *Best Buy*, holding that the defendants had established a lack of price impact. IBEW Local 98 Pension Fund v. Best Buy Co., No. 14-3178, 2016 WL 1425807, at *6–7 (8th Cir. 2016). This marks the first case where class certification was denied based on a lack of price impact under *Halliburton II*.

Out of the eight securities class certification decisions to date, defendants have failed to rebut the presumption in seven. However, in *Halliburton II* itself, on remand from the Supreme Court, the district court, in a lengthy analysis of plaintiffs' and defendants' price impact arguments, found that defendants had successfully shown a lack of price impact for five out of the six disclosures at issue.[25] With respect to one of the disclosures, the class was certified.[26]

There are three general themes that emerge from these decisions. First, when addressing confirmatory misrepresentations—alleged misrepresentations by a defendant that falsely confirm existing market expectations—some courts have concluded that a lack of a change in the security's price at the time of the misrepresentation does not rule out a potential price impact associated with the alleged misrepresentation. For instance, in *McIntire v. China MediaExpress Holdings, Inc.*,[27] defendants argued that there was no statistically significant price increase when the misrepresentations at issue were made. The court found that this evidence was insufficient to rebut the *Basic Inc.* presumption because a "material misstatement can impact a stock's value . . . by improperly maintaining the existing stock price."[28] On a similar note, the court in *IBEW Local 98 Pension Fund v. Best Buy Co.*[29] stated that "[e]ven though the stock price may have been inflated prior to the [misrepresentations], the alleged misrepresentations could have . . . prolonged the inflation of the price . . . ."[30] In other words, some courts have reasoned that a lack of a statistically significant price reaction as of the misrepresentation date can be consistent with there being a potential price impact caused by a confirmatory misrepresentation.

Second, lower courts have reasoned that the identification of non-fraud related news that could have caused stock price changes on the misrepresentation and corrective disclosure dates (the latter consisting of disclosures that reveal to the market the alleged misrepresentation) by itself is not sufficient for establishing a lack of price impact. For instance, the lower court in *IBEW Local 98 Pension Fund v. Best Buy Co.* noted that there can be price impact "when an unduly optimistic statement stops a price from declining (by adding some good news to the mix) . . . ."[31] In

25. Erica P. John Fund, Inc. v. Halliburton Co., 309 F.R.D. 251, 279–80 (N.D. Tex. 2015).
26. *Id.*
27. 38 F. Supp. 3d 415, 433 (S.D.N.Y. 2014).
28. *Id.* at 434.
29. Civil No. 11–429 (DWF/FLN), 2014 WL 4746195 (D. Minn. Aug. 6, 2014).
30. *Id.* at *6.
31. *Id.* (quoting Schleicher v. Wendt, 618 F.3d 679, 683 (7th Cir. 2010)).

such a situation with countervailing news, a disclosure might not cause a statistically significant price reaction even though the statement arguably might have a price impact associated with it.

Third, courts have come to disparate conclusions about the benefit of looking at disclosures in addition to the alleged misrepresentation disclosures in a price impact analysis. While courts generally have considered price changes associated with alleged corrective disclosures and certain other disclosures in assessing the price impact of the alleged misrepresentations, some courts have nevertheless suggested they will not consider certain types of additional disclosures. In other words, some courts have determined that some disclosures and the market reaction to them constitute potentially relevant economic evidence on the issue of price impact while other disclosures cannot even be considered. For instance, some courts have refused to consider disclosures identified by defendants that arguably establish that the market already in fact knew the truth allegedly being misrepresented and thus the alleged misrepresentation (or corrective disclosure thereof) could not have resulted in a change in the total mix of information made available to the market and, hence, could not have affected the pricing of the security (assuming the market were indeed efficient).

For example, the district court in *Halliburton II* on remand considered in depth various corrective disclosure dates.[32] On a similar note, the court in *McIntire v. China MediaExpress Holdings, Inc.* examined a disclosure prior to the alleged misrepresentation disclosure in the course of examining price impact.[33] At the same time, the court in *Aranaz v. Catalyst Pharmaceutical Partners Inc.*[34] held that disclosures that speak to whether the market knew the truth allegedly being misrepresented cannot be considered in assessing price impact. The court in *Aranaz* reasoned that "while the presumption of price impact may be rebutted at the class certification stage by directly showing an absence of price impact, it may not be indirectly rebutted by showing that the misrepresentation was immaterial."[35] As a result of this reasoning, courts have in some instances concluded that a lack of a statistically significant price reaction associated with the alleged misrepresentation can be consistent with there being a

32. Erica P. John Fund, Inc. v. Halliburton Co., 309 F.R.D. 251 (N.D. Tex. 2015).
33. 38 F. Supp. 3d 415, 422 (S.D.N.Y. 2014).
34. 302 F.R.D. 657, 671 (S.D. Fla. 2014).
35. *Id.* at 670 (citing Amgen Inc. v. Conn. Ret. Plans & Trust Funds, 133 S. Ct. 1184, 1197 (2013)).

potential price impact even if the truth allegedly being misrepresented had arguably been fully disclosed to the market.

Combined, these eight cases to date suggest that courts have not adopted clear or even entirely consistent rules when assessing price impact analysis. A lack of statistical significance need not, depending on the facts and circumstances, indicate a lack of price impact according to some courts. There might have been confounding information or the misrepresentation at issue might have been a confirmatory one. Some disclosures, such as purported corrective disclosures, can be considered in the analysis, while other additional disclosures cannot be so considered.

IV. THE RELATEDNESS OF THE MATERIALITY AND PRICE IMPACT INQUIRIES

The Supreme Court has clearly drawn a distinction between the materiality and price impact inquiries by stating in its *Amgen* decision that the former is an issue of proof at the merits stage while allowing the latter to be raised at the class certification stage in its *Halliburton II* decision.[36] But while the existence of a legal distinction is clear, the economic or conceptual basis for this distinction is far less clear.

Start with the legal definition of "materiality." Information is deemed "material," using the standard *TSC Industries, Inc. v. Northway, Inc.* definition, when there is a "substantial likelihood that the disclosure of the [information] would have been viewed by the reasonable investor as having significantly altered the 'total mix' of information made available."[37] While *TSC Industries, Inc.* itself involved the definition of materiality for purposes of Section 14(a) and Rule 14a-9 of the Exchange Act of 1934, the Court in *Basic Inc.* adopted the same definition of materiality for purposes of Section 10(b) and Rule 10b-5. And in its *Amgen* decision, the Court again reaffirmed that this materiality inquiry in fraud-on-the-market cases is an objective one based on the "total mix of information made available" and the "reasonable investor" standard.[38]

As is widely appreciated, in the context of a case in which plaintiffs have successfully invoked the *Basic Inc.* presumption, the "total mix of

---

36. *See supra* notes 6–9 and accompanying text.

37. 426 U.S. 438, 449 (1976); *see also* Matrixx Initiatives, Inc. v. Siracusano, 131 S. Ct. 1309, 1318 (2011) (quoting Basic Inc. v. Levinson, 485 U.S. 224, 238 (1988)) ("To prevail on a § 10(b) claim, a plaintiff must show that the defendant made a statement that was '*misleading* as to a *material* fact.'").

38. *Amgen*, 133 S. Ct. at 1203 (quoting *Basic*, 485 U.S. at 232) (internal quotation marks omitted).

information made available" would encompass all publicly available information given that any prior disclosed information is already reflected in the market price in an efficient market (prerequisite 3 to invoking the *Basic Inc.* presumption). Therefore, only new information that would significantly alter what is already publicly available would be deemed "material" under *TSC Industries, Inc*.[39] But this materiality definition raises the following question: assuming some new information does significantly alter what is already known from the publicly available information, and hence would thereby be deemed "material," would not that same new information also elicit a change in the market price once disclosed given that the market price reflects all publicly available information? If it does not elicit such a change, in what sense does the information "significantly alter" what is already publicly available? And, to finish this line of thought, is not this change in market price the same thing as price impact? Defining "total mix of information made available" as equivalent to publicly available information in the context of an efficient market would therefore appear to collapse the distinction between materiality and price impact.

The same conundrum presents itself if one begins with the notion of price impact, rather than materiality. Price impact, according to the *Halliburton II* Court, is the impact of a "material misrepresentation"—a misrepresentation that significantly alters the public information already incorporated into the security's price—at the time of the misrepresentation.[40] Price impact then would appear to logically accompany a finding (or assumption) of "materiality."[41] And the converse would hold true as well. A finding of a lack of "materiality" would imply a lack of price impact. That is, the materiality and price impact inquiries once again seem to converge.

Or one can start with equating the concept of the hypothetical "reasonable investor" used in the legal definition of "materiality" with the hypothetical rational profit-maximizing investor as used in economics. The question of "materiality" can then be tackled by asking whether a

39. *See TSC Industries*, 426 U.S. at 450.

40. Halliburton Co. v. Erica P. John Fund, Inc. (*Halliburton II*), 134 S. Ct. 2398, 2407–08 (2014). We will discuss later the ambiguity inherent in *Halliburton II*'s description of the price impact inquiry. For example, we discuss how economic analysis differs depending on whether the inquiry relates to the impact of an alleged material misrepresentation per se or the alleged degree of falsity of the misrepresentation.

41. For the purposes of exposition, we assume here that the alleged material misrepresentation changes the total mix of information solely as a result of the degree of falsity of the alleged material misrepresentation. We will provide examples later where this assumption may not be valid.

hypothetical change in information made available to the market, such as a revision to an actual disclosure made or a disclosure of a particular piece of information that plaintiffs claim could and should have been made earlier, would cause a hypothetical rational profit-maximizing investor to change their expectation of the security's price. If so, then the information is "material." One potential way to answer this question is to ask whether an actual change in the total mix of information caused actual investors (i.e., the market) to change actual prices. And, of course, measuring actual changes in prices in response to changes in the actual information available to the market can be analyzed by running an event study with the event being the date on which the actual change in the total mix of information occurred.[42] But event studies are also often how an economist assesses price impact. Indeed, the Court in the *Halliburton II* opinion (and at the oral argument) focused its attention on event studies as one means of measuring price impact.[43] Thus, from an economic perspective, a common method of proof for establishing materiality appears closely related to at least one method of proof contemplated by the *Halliburton II* Court to show a lack of price impact.

Equating the hypothetical reasonable investor with a hypothetical rational profit-maximizing investor, which in turn is proxied by the market reaction to information in an efficient market, makes some economic and legal sense. Undergirding the fraud-on-the-market presumption is the assumption, according to the *Basic Inc.* Court, that the "market is acting as the unpaid agent of the investor, informing him that given all the information available to it, the value of the stock is worth the market price."[44] In an efficient market—the unpaid agent of the investor—the market price is forward-looking, reflecting the market's estimate of the present value of the expected future cash flows given the riskiness of those flows.[45] Security prices change rapidly in an efficient market in response to new value-relevant information that alters the total mix of value-relevant publicly available information. The efficiency of the market reflects the fact that actual investors, such as arbitrageurs, incur costs to search out, evaluate, and trade on what they perceive to be value-relevant information.

---

42. Typically using a 95% statistically significant standard.

43. *Halliburton II*, 134 S. Ct. at 2415.

44. Basic Inc. v. Levinson, 485 U.S. 224, 244 (1988) (quoting *In re* LTV Sec. Litig., 88 F.R.D. 134, 143 (N.D. Tex. 1980)).

45. *See generally* RICHARD A. BREALEY ET AL., PRINCIPLES OF CORPORATE FINANCE 359–60 (9th ed. 2008) (discussing the semi-strong form of market efficiency).

Whether value-relevant information significantly alters the "total mix of information made available" can be addressed by both appealing to financial principles as to what should matter to the market as a conceptual matter *and* through event study analysis of whether any actual change in the total mix of information can be shown to have actually mattered in terms of an observed price change. That is, changes in the actual "total mix of information" made publicly available to the market—the issue potentially relevant to a *TSC Industries, Inc.* materiality inquiry—and changes in the actual stock prices—the issue potentially relevant to a *Halliburton II* price impact inquiry—therefore appear once again to be tightly interconnected in the context of an efficient market.

As an illustration of these points, consider the following example:

> Example 1: A Simplified Earnings Misrepresentation: Prior to any misrepresentation, the market expects a company to earn $0.10 per share. The company falsely announces that it earned $0.12 per share, but it could and should have reported only $0.10 per share in line with market expectations. The associated stock price increase is statistically significant.

In this example, everything works well in terms of assessing materiality and price impact through an event study analysis given that: (a) the impact of the misrepresentation based on financial principles is expected to be value relevant as investors' reassessment of future expected cash flows will increase because higher earnings, all else being equal, typically result in more potential cash available to investors; (b) the change in the stock price is statistically significant using commonly accepted empirical thresholds;[46] and (c) the actual change in the total mix of information made available (earnings surprise of $0.02 per share) equals the hypothetical change in the total mix of information caused by the falsity of the misrepresentation (again, an earnings surprise of $0.02 per share). Given (a)-(c), the event study demonstrates not only that the actual change in the total mix of information caused a change in the actual stock price as would be expected from financial theory but *also* that the alleged falsity of the misstatement likely caused a change in stock price as would likewise be expected from financial theory. That is, the event study demonstrates both a price change observed in the actual world (potentially a price impact caused by the misrepresentation per se) and a price impact caused

46. For exposition purposes, we need not define the commonly accepted empirical threshold here. The argument presented holds regardless of the threshold adopted.

by the alleged falsity of the misrepresentation. The event study, for the same reasons, likewise supports a finding of materiality. Specifically, the event study provides an objective indication that the alleged falsity of the misrepresentation caused a significant change in the total mix of information because the actual price change observed is statistically significant.

Of course, Example 1 is highly stylized. Conditions (a)-(c) need not always hold true. In Example 1, the alleged material misrepresentation when made contained information that was expected to be value relevant based on financial principles to investors. Economics indicates that not all information is necessarily value relevant to investors. Consider the following option-backdating example:

> Example 2: A Non-Cash Earnings Misrepresentation: A company engages in option backdating in determining stock-based compensation for 1QFY01. The option backdating consists of falsely representing that stock options were granted at a strike price equal to the market price on the date the options were granted. In reality, the option's strike price and grant date were chosen retrospectively to conceal the fact that the strike price was below the market price on the true grant date (in-the-money options). The company's 1QFY01 quarterly filing discloses to the market the actual contractual strike price and the number of options granted, albeit not the real grant date. Hence, market participants could properly update their assessments of the value of compensation awarded based on observable factors. However, because the accounting treatment did not follow GAAP at the time, the company is later forced to restate the non-cash accounting expense associated with granting in-the-money options when the option backdating is revealed.

An important difference of this non-cash earnings misrepresentation example from Example 1 is that it is questionable whether one would expect, based on financial principles, the market to care about the non-cash accounting expense associated with granting in-the-money options (i.e., whether condition (a) holds true in Example 2). In an efficient market, value-relevant information is forward-looking information relating to the firm's future cash flows and/or the appropriate discount rate for those cash flows. Only by establishing a connection between the non-cash accounting changes and the market's expectations of future cash flows and/or their appropriate discount rates could the new information concerning non-cash accounting expenses represent a significant alteration in the total mix of value-relevant information in an efficient market. Thus, in theory, one might argue that the alleged misrepresentation was unlikely to be value relevant and therefore would not be expected to result in any hypothetical price impact had the additional information (the real grant date) been properly disclosed.

Be that as it may, some courts have nevertheless found non-cash accounting changes, including cases involving companies that engage in option-backdating and which trade in an efficient market, to be "material" under the *TSC Industries, Inc.* standard.[47] Given this legal result, this arguably creates a potential legal difference at least in these specific cases between "the total mix of information made available" for purposes of the materiality inquiry and the "total mix of value relevant information made available" that is relevant for purposes of a price impact inquiry. Accordingly, cases involving material misrepresentations that are not value relevant as a matter of economics could therefore represent potential scenarios in which the legal definition of materiality and the economic question of price impact could potentially diverge.

However, this potential distinction between materiality and price impact may be less relevant in class action securities cases in which plaintiffs invoke the *Basic Inc.* fraud-on-the-market presumption. The Court in *Halliburton II* emphasized that the presumption of reliance can prevail because an alleged material misrepresentation is presumed to have impacted price in an efficient market.[48] Therefore, *Halliburton II* may limit the appropriateness of class treatment to those cases in which the alleged material misrepresentations are of the type that one would expect to impact price.

V. ASSESSING PRICE IMPACT WITH AN EVENT STUDY

In this Part, we will now explore the implications for the materiality and price impact inquiries for examples in which either condition (b) or (c) does not hold: (b) the change in the stock price is statistically significant and (c) the actual change in the total mix of information equals the hypothetical change caused by the falsity of the misrepresentation. To do so, we assume that the alleged material misrepresentation relates to information expected to be value relevant to investors. That is, we assume

47. For courts' treatment of a non-cash change, see, e.g., Local 703, I.B. of T. Grocery & Food Emps. Welfare Fund v. Regions Fin. Corp., No. CV–10–J–2847–S, 2014 WL 6661918, at *7 (N.D. Ala. Nov. 19, 2014).

48. *Halliburton II*, 134 S. Ct. at 2407–08.

that condition (a) from Example 1 holds in each of the following examples but not necessarily conditions (b) and (c). We will focus first on scenarios in which condition (b) does not hold.

A. *Instances in Which Actual Stock Price Changes Are Not Statistically Significant*

Generally speaking, a single firm event study identifies abnormal stock price changes by comparing the magnitude of actual stock price changes observed in the marketplace occurring on a day of interest with a statistical measure of the typical magnitude experienced over time.[49] When the stock price changes by an amount deemed to be statistically significant, an economist may conclude that the stock price change was outside the typical noise and thus potentially related to the release of new information to the market at that time.[50]

However, not all disclosures will lead to actual stock price changes that are statistically significant. Instances in which new information is disclosed to the market that does not result in a statistically significant stock price change can create challenges for an economist conducting price-impact studies or for a court evaluating such studies in the class certification context. In this section, we provide four examples to explore how statistical significance relates to price impact. We also discuss how courts have dealt with these situations post-*Halliburton II*.

We begin with an example in which the actual change in the total mix of information and the degree of the falsity is sufficiently small such that the actual change in stock price gets lost in the noise of the market.

> Example 3: An Earnings Misrepresentation "Lost" in the Noise of the Market: Prior to any misrepresentation, the market expects a company to earn $1.10 per share. The company falsely announces that it earned $1.11 per share, but it could and should have reported only $1.10 per share in line with market expectations. The associated stock price increase is *not* statistically significant.

Turning to the three conditions discussed in the context of our earlier surprise earnings example, conditions (a) and (c) are satisfied, but not

49. Specifically, single firm event studies commonly employed in litigation compare the unexplained portion of an actual stock price return (i.e., the residual) on a day of interest to a statistical measure of the typical degree of variation observed in the residuals on a control set of days. *See generally* JOHN Y. CAMPBELL ET AL., THE ECONOMETRICS OF FINANCIAL MARKETS 149–80 (1997).

50. For the purposes of exposition, we assume that the economist has conducted a reliable event study using commonly accepted methods.

condition (b). As a result, using an event study, one cannot reject the hypothesis that the stock price reaction is due to random noise. Absent reliable statistical evidence of a measurable price change, the event study may not be able to distinguish between a random change in stock price unrelated to the alleged material misrepresentation and a potential change in stock price caused by the alleged material misrepresentation. This finding would appear to directly speak to whether the misrepresentation is associated with a price impact for purposes of *Halliburton II*. Importantly, the *Halliburton II* Court stated:

> Suppose a defendant at the certification stage submits an event study looking at the impact on the price of its stock from six discrete events [and] . . . . one of the six events is the specific misrepresentation asserted by the plaintiffs. . . . Now suppose the district court determines that, despite the defendant's study, the plaintiff has carried its burden to prove market efficiency, but that the evidence shows no price impact with respect to the specific misrepresentation challenged in the suit. The evidence at the certification stage thus shows an efficient market, on which the alleged misrepresentation had *no* price impact.[51]

Assuming that Example 3 is akin to the misrepresentation example the *Halliburton II* Court had in mind in this discussion, this would indicate that there is no price impact in Example 3. Does such a finding also imply there is no "materiality" under *TSC Industries, Inc.* as a legal matter? Of course, it is conceivable that price impacts can be sufficiently small so that the misrepresentation is insignificant for both purposes of price impact and materiality. But the case law does not indicate that the minimum threshold is identical for both inquiries. It is conceivable that the information in Example 3 was value relevant information—the earnings surprise of $0.01—but fails to elicit a sufficiently large price reaction to be detected statistically given the level of background noise in the stock price. Indeed, one could go further and argue, appealing to financial principles, that one may expect that the information is value relevant to the market even if there is no statistical evidence of price impact. Here, the Court has not provided much guidance in terms of how to weigh the evidence of a lack of price impact based on an event study against alternative analyses.

Nevertheless, if the analysis of Example 3 is correct and there is no price impact under *Halliburton II*, then a characterization of what the

51. *Halliburton II*, 134 S. Ct. at 2415 (emphasis added).

Halliburton II Court was functionally doing is holding that fraud-on-the-market class action cases need to be based on alleged misrepresentations that are "material" *in the particular sense* that they elicit statistically significant price reactions (with, importantly, defendants having the burden of showing this not to be the case). That is, if the market acts as the "unpaid agent" on behalf of the investor in these cases, as *Basic Inc.* tells us,[52] then materiality stands or falls on whether the market, the stand-in for the "reasonable investor," can reliably be said to have reacted to the information at issue. The Court, for reasons of doctrinal consistency, namely its *Amgen* decision from the prior year,[53] chose to label this inquiry as "price impact," but the end result appears to be much the same.[54]

If the basis for claiming that the *TSC Industries, Inc.* materiality standard is satisfied rests on considerations other than the market's reaction, then one might argue that these types of cases post-*Halliburton II* should proceed as individual actions rather than be afforded class treatment. In our Example 3, the materiality of the alleged misrepresentation would be an individualized determination not amenable to class treatment under the fraud-on-the-market presumption. In this way, the distinction between questions of "materiality" and price impact drawn by the Court in *Amgen* and *Halliburton II* might represent a way of sorting different types of materiality claims depending on their methods of proof.

Next, we turn to another example where there is a lack of a statistically significant price reaction that has come up in multiple forms in the post-*Halliburton II* lower court opinions. Specifically, we examine a situation in which a company makes a confirmatory misrepresentation. Whereas confirmatory misrepresentations are not terms of art in economics, one can characterize confirmatory misrepresentations as actionable statements that serve to falsely reaffirm market participants' prior expectations of a company's prospects.[55] By way of example, consider the following scenario:

> Example 4: An Earnings Misrepresentation that Confirms Prior Expectations: Prior to any public statement, the market expects a company to earn $0.10 per share. The company falsely announces that it earned $0.10 per share in line with market expectations, but

52. Basic Inc. v. Levinson, 485 U.S. 224, 244 (1988).

53. Amgen Inc. v. Conn. Ret. Plans & Trust Funds, 133 S. Ct. 1184 (2013).

54. *Halliburton II*, 134 S. Ct. at 2414.

55. *See, e.g.*, Local 703, I.B. of T. Grocery & Food Emps. Welfare Fund v. Regions Fin. Corp., No. CV–10–J–2847–S, 2014 WL 6661918, at *6 (N.D. Ala. Nov. 19, 2014).

> plaintiffs allege it could and should have reported only $0.09 per share. The associated stock price increase is *not* statistically significant.

In this example, the confirmatory earnings announcement by the company does not alter the actual total mix of information in the marketplace given that the announcement exactly matches the market's expectations. Given these facts, one would not expect a stock price change at the time the misrepresentation is made if the market were indeed efficient. From the market's perspective, there has been no change in the actual information available to the market as a result of the earnings misrepresentation. However, one could argue that there *would* have been a *hypothetical* change in the total mix of information if the firm had hypothetically told the truth by announcing a negative earnings surprise of one cent per share. Accepting this framing of the "but for" world—the world that would have existed if the firm had not engaged in the alleged misconduct—there arises an important distinction between the hypothetical change in the total mix of information and the actual change in the total mix. An event study analysis of the announcement can only assess whether there is a reliable indication of an actual change in stock price that resulted from an actual change in the total mix of information.

To understand whether an unobserved, hypothetical change in the total mix of information would have resulted in a price impact may well require additional analysis. For example, in certain circumstances, an economist may be able to learn about the potential for a price impact caused by the alleged confirmatory misrepresentation by examining other disclosures and their associated price changes. This additional analysis can be informative, but does have some pitfalls as we will point out.

Turning back to Example 4, suppose that the earnings misrepresentation identified by the plaintiffs is on the date of the firm's SEC filing. Further suppose that the company had pre-announced its earnings at an earlier date. Given the claim of market efficiency (prerequisite 3), the price impact of the earnings misrepresentation in the SEC filing could potentially be assessed by examining the actual change in stock price associated with the earlier pre-announcement.

Whether analyses of additional disclosures in Example 4 would be informative as to the price impact of the alleged earnings misrepresentation in the SEC filing could depend on, among other things, whether the total mix of information remained relatively stable over time. For example, if the company experienced significant operational changes between two disclosures, these changed circumstances could lead to differences in the way investors value otherwise seemingly identical information. If so, the changed circumstance could limit the applicability of the additional analyses. That said, analyses of disclosures and stock price movements on days other than an alleged confirmatory misrepresentation comport with commonly accepted practices and can be informative.

Consistent with this reasoning, post-*Halliburton II* decisions have looked at the price impact associated with other disclosures. Specifically, in *McIntire v. China MediaExpress Holdings, Inc.*,[56] plaintiffs alleged that there were various misrepresentations in an audit opinion concerning a firm's financials that misled the market. Defendants argued that since there was no price reaction associated with the disclosure of the audit opinion, there was no price impact under *Halliburton II*.[57] Rejecting this argument, the court noted that "days before [defendant] issued its audit opinion, [the] stock price increased based on its release of unaudited financial statements."[58] Therefore, the actual audit opinion could reasonably be viewed, according to the court, as confirming the earlier unaudited financial statements which did elicit a price reaction.[59]

Not surprisingly, so-called corrective disclosures—disclosures that revealed the misrepresentation to the market—have been a common focal point of analysis in post-*Halliburton II* price impact cases. For instance, the district court's opinion in *Halliburton II* on remand focused significant attention on whether the alleged corrective disclosure dates in that matter were statistically significant.[60]

While courts post-*Halliburton II* have clearly shown a willingness to consider additional disclosures in assessing the price impact of a misrepresentation—a willingness that is consistent with considering all the economic evidence that might be brought to bear on the issue—some courts also have refused at times to allow such an analysis with respect to certain disclosures. For example, the court in *Aranaz* stated:

---

56. 38 F. Supp. 3d 415, 422 (S.D.N.Y. 2014).

57. *Id.* at 434.

58. *Id.*

59. *Id.* It is unclear whether the stock price increase noted by the court in *McIntire* was statistically significant because the court did not say so one way or the other. Rather, the court merely noted that there was a price increase. *See id.*

60. In the *Halliburton II* remand, plaintiffs argued that there were six corrective disclosures associated with statistically significant price changes. The court found that there was a statistically significant price change for only one of those six disclosures. Erica P. John Fund, Inc. v. Halliburton Co., 309 F.R.D. 251, 271–72 (N.D. Tex. 2015).

> Defendants attempt to rebut the presumption of reliance by showing that the alleged misrepresentation had no impact on the price of Catalyst common stock. In support of this contention, Defendants rely largely on the argument that the truth . . . was already known to the public and that the alleged misrepresentation therefore could not have impacted the price of Catalyst common stock.[61]

The court refused to consider this argument, which if correct would have indicated a lack of price impact in an efficient market. According to the court, defendant's argument was really about materiality, an issue the *Amgen* Court said cannot be considered at the class certification stage.[62] These arguments, labeled as "truth-on-the-market" defenses, have been rejected by some other post-*Halliburton II* courts at the class certification stage as well.[63] The confusion by courts is understandable given the lack of instruction provided in *Halliburton II* and its relationship to *Amgen*. However, a decision to look at just a subset of disclosures in assessing price impact is inconsistent with considering all the relevant economic evidence.[64] If a disclosure reveals that the market knew the truth, despite the alleged misrepresentation, then that should be considered in the course of assessing price impact just as other disclosures, such as corrective disclosures, are currently considered.

There is one final interesting wrinkle in Example 4. There is an alternative understanding of the hypothetical change in the total mix of information due to the alleged fraud. Suppose in Example 4 that the firm did not have a legal duty to disclose earnings per share at the time that it did, but nevertheless chose to make the misrepresentation. As Professor Langevoort has discussed, the "but for" world in which the firm did not engage in fraud could simply be a world in which the firm remained silent rather than disclose the true earnings per share.[65] This formulation of the hypothetical change in the total mix of information is motivated by *Basic Inc.*'s famous statement that "[s]ilence, absent a duty to disclose, is not

61. Aranaz v. Catalyst Pharm. Partners, Inc., 302 F.R.D. 657, 670–71 (S.D. Fla. 2014).

62. *Id.* at 671; *see also* Amgen Inc. v. Conn. Ret. Plans & Trust Funds, 133 S. Ct. 1184, 1197 (2013).

63. *See, e.g.*, Local 703, I.B. of T. Grocery & Food Emps. Welfare Fund v. Regions Fin. Corp., No. CV–10–J–2847–S, 2014 WL 6661918, at *9 (N.D. Ala. Nov. 19, 2014).

64. Notably, in the recent Eighth Circuit decision in *Best Buy*, the circuit court did consider in assessing price impact a disclosure that occurred prior to the misrepresentation. *See* IBEW Local 98 Pension Fund v. Best Buy Co., No. 14-3178, 2016 WL 1425807, at *6–7 (8th Cir. 2016).

65. Donald C. Langevoort, *Compared to What? Econometric Evidence and the Counterfactual Difficulty*, 35 J. CORP. L. 183, 186 (2009).

misleading under Rule 10b–5."[66] Indeed, in *Basic Inc.* itself, the Court explained that an appropriate course of action for the firm was to issue a "no comment" statement, rather than make misleading statements about the status of merger negotiations.[67] If the market would have continued to believe in Example 4 that earnings would be $0.10 per share if the firm had hypothetically remained silent (or issued a "no comment" statement), then the actual change in the total mix of information is in fact the same as the hypothetical change in the total mix of information (i.e., zero). With this definition of the "but for" world, there would be no price impact associated with the misrepresentation.

This discussion of what constitutes the hypothetical change in the total mix of information raises an important point. Namely, the inquiry into price impact might well be dependent upon plaintiffs' allegations, in particular plaintiffs' position on what a company could and should have said at the time of the alleged misrepresentation. In order to test whether there is price impact associated with an alleged misstatement, it is not always sufficient to know which statements are alleged to be false and misleading. Rather, it can be important to know what the plaintiffs' theory is as to what could and should have been disclosed instead in order to understand the hypothetical change in the total mix of information. After all, the price impact inquiry at issue may relate to the price impact caused by the alleged falsity of the misrepresentation and not just the fact that a misrepresentation was made.

Consider another example that further highlights the potentially important distinction between hypothetical and actual changes in the total mix of information.

> Example 5: Collateral consequences: A company falsely states that it is not engaged in option backdating. When it is revealed that the company was involved in option backdating, there is no statistically significant stock price reaction. Later, the SEC decides to investigate. At this point, the market becomes concerned that the company's visionary leader will be forced to resign and the stock price falls by a statistically significant amount (using thresholds commonly applied in peer-reviewed journals).

If the hypothetical change in the total mix of information that could and should have occurred is the revelation of the option backdating, then an

66. Basic Inc. v. Levinson, 485 U.S. 224, 239 n.17 (1988).
67. *Id.*

event study may support a finding of no price impact given the market's non-reaction to the actual disclosure of option backdating. However, if the claim is that there could and should have been disclosures that relate to the risk, perhaps modest, that the company's leader will be implicated (assuming such a claim is legally cognizable), then the analysis becomes more involved.

In this more complicated setting, a number of additional issues may present themselves in exploring the hypothetical change in the total mix of information and any associated potential price impact. For example, does the revelation of the option backdating itself constitute revelation of the allegedly previously undisclosed risk of some chance of managerial turnover? Also, what would the market's assessment of the likelihood of an SEC investigation, and any associated market concerns over the risk of managerial turnover, have been if the option backdating had been disclosed at an earlier period of time? These questions often relate to questions involving *what if* as opposed to *what happened*. A typical event study may not be well suited to address these types of "what if" questions absent other reliable economic analysis.

Next, we turn to another example that has also come up in the recent post-*Halliburton II* court rulings mentioned earlier. Consider a scenario in which a company makes a misstatement that surprises the market (as opposed to a confirmatory misrepresentation) on the same day that it releases non-fraud-related confounding information.

> Example 6: A Simplified Earnings Misrepresentation with Confounding Information: Prior to any misrepresentation, the market expects a company to earn $0.10 per share. The company falsely announces that it earned $0.11 per share, but it could and should have reported only $0.10 per share in line with market expectations. The company also announces for the first time guidance for the coming year that is lower than the market's prior expectations for reasons unrelated to its earnings estimate. The associated stock price increase is *not* statistically significant.

This example complicates Example 1 by introducing negative confounding information—that is, the company simultaneously announces lower guidance than expected. Absent the negative confounding information, economic theory indicates that the stock price would be expected to increase, all else equal. However, all else is not equal because the positive news associated with the alleged misrepresentation is confounded by negative non-fraud related news.

In Example 6, one can see a potential limitation of single firm event studies. Namely, single firm events, as typically employed in litigation, examine the change in actual stock prices associated with the actual changes in the total mix of information. When the actual change in the total mix of information contains separate pieces of information, the event study as commonly employed may not be able to disentangle the cause, if any, of the change in stock price.[68]

Courts examining the post-class certification, merits phase of securities litigation are well versed in this issue. For example, in assessing loss causation, courts have had to adjudicate matters in which an alleged corrective disclosure contained both negative fraud-related and non-fraud-related information.[69] In some instances, prior courts have determined that plaintiffs bore the burden of demonstrating that the non-fraud related information did not substantially cause the observed price declines measured via the event study.[70] In the price impact context, some court rulings post-*Halliburton II* to date suggest that courts have required a similar hurdle for defendants. For instance, the court in *Wallace v. IntraLinks*[71] rejected defendants' price impact argument by concluding that the defendants had not identified factors unrelated to the fraud that "exclusively caused" the stock price drop on an alleged corrective disclosure date. That is, the court held that defendants did not prove that the entire price drop was caused by the release of non-fraud information and, as such, did not prove that the price drop actually observed was not caused at least in part by revelation of the alleged misrepresentations at issue.[72]

---

68. Economists can alter the formulation of their event study to address instances in which multiple pieces of information are released on a given day. For the purposes of this discussion, we assume that the event study in question relies on daily closing prices.

69. *See, e.g.*, *In re* Oracle Corp. Sec. Litig., 627 F.3d 376, 392 (9th Cir. 2010) (addressing whether purported corrective disclosure price reaction was due to revelation of the alleged fraud or non-fraud factors).

70. *See, e.g.*, Gould v. Winstar Commc'ns, Inc., 692 F.3d 148, 161–62 (2d Cir. 2012). Interestingly, this may be a mirror image of the issues typically facing plaintiffs in proving loss causation. For example, some courts have required plaintiffs to parse between confounding firm-specific news and the fraud-related news to prove loss causation at summary judgment. *See, e.g.*, *In re* Williams Sec. Litig.-WCG Subclass, 558 F.3d 1130, 1140 (10th Cir. 2009).

71. 302 F.R.D. 310, 317 (S.D.N.Y. 2014).

72. *Id.*

B. *Actual Change in the Total Mix of Information Does Not Equal the Degree of Alleged Falsity*

Our examples so far have not directly addressed the following situation: instances in which the actual change in the total mix of information does not equal the degree of alleged falsity. We will explore this issue in this section by examining the potential distinction between the price impact of an alleged misrepresentation and the price impact of the falsity of the alleged misrepresentation. Exploring this difference is useful as it provides an additional lens through which to better understand the type of economic evidence that may be relevant to price impact and the distinction the Supreme Court drew between the price impact inquiry contemplated by *Halliburton II* and the forbidden materiality inquiry of *Amgen*. This discussion will also serve to further highlight the relationship between pleading standards placed on plaintiffs and defendants' *Halliburton II* price impact burden.

We will motivate our discussion again through the use of an example.

> Example 7: A Small Earnings Misrepresentation Relative to the Actual Surprise: Prior to any misrepresentation, the market expects a company to earn $0.10 per share. The company announces it earned $0.11 per share, but it could and should have reported only $0.10 per share given that its actual per share earnings was $0.104. In other words, the company should have rounded down to $0.10 per share rather than up to $0.11. The associated stock price increase is statistically significant.

Importantly, in this example, the falsity of the statement lies in the fact that the company was treating earnings per share as if they were $0.001 higher than they really were, thereby resulting in the improper rounding up. However, the actual change in the total mix of information made available as a result of the corporate statement is a $0.01 per share surprise. That is, there is a mismatch between the actual change of $0.01 and the hypothetical change of $0.001 relating to the improper rounding treatment of the earnings per share.

This example demonstrates that there can be an important distinction between measuring the price impact of a statement that is false and measuring the price impact of the falsity itself. Event studies can only directly measure the price impact of statements, rather than the price impact of the aspect of the statement that is false. That is, the event study in this hypothetical example assesses whether there was a price impact associated with the actual change of $0.01 and not with the hypothetical change of $0.001 relating to the improper rounding treatment of the earnings per share. Even if an event study evidences the existence of an actual change in stock price caused by an actual change in the total mix of information, as in this example, the same study may not provide reliable evidence that some portion of the actual stock price change resulted from the assumed hypothetical change in the total mix of information due to the alleged fraud.

This type of scenario could lead to difficulties for defendants, depending upon how subsequent courts view the burden of proof. For example, if courts focus the inquiry on whether the stock price moved as a result of the actual change in the total mix of information, event studies could be conducted to address this issue. Alternatively, if courts deem that the price impact inquiry relates to a change in price caused by the alleged falsity at issue, then defendants' ability to rebut using an event study (as arguably envisioned by the Court in *Halliburton II*) could be limited to only those types of statements in which the actual change in the total mix of information equals the hypothetical change in the total mix of information given plaintiffs' allegations, such as in our Example 1. Defendants also could appeal to alternative methods to assess price impact, and doing so may require courts to impose more rigorous pleading standards on plaintiffs so as to identify precisely the alleged falsity of the misrepresentations at issue.

Of course, questions relating to how courts will evaluate the burden of proof relating to price impact inquiries will not always favor plaintiffs. For example, consider an alternative scenario.

> Example 8: A Small Earnings Misrepresentation Relative to the Actual Surprise with Confounding Information: Prior to any misrepresentation, the market expects the company to earn $0.10 per share. The company announces it earned $0.11 per share by again improperly rounding up from $0.104, but lowers guidance going forward. Plaintiffs allege that the company could and should have reported $0.10 per share instead of $0.11. The associated stock price increase is *not* statistically significant.

Here, as in Example 7, the alleged falsity relates to a $0.001 hypothetical change in the total mix of information, but with a complication—confounding information in the form of an announcement of lower guidance. Unlike the prior example, defendants may argue that there is no price impact associated with the company's actual statements taken as a whole. We say "as a whole" because typical daily single firm event studies evaluate changes in security prices resulting from any and all changes in the total mix of information, not just single statements alleged by plaintiffs to be false. Moreover, building on the empirical finding of no price impact related to the actual change in the total mix of information, the defendants also might have an argument that the alleged falsity—treating earnings as if they were $0.001 per share higher—would not be expected to elicit a statistically meaningful stock price reaction based on financial principles. The success of this argument may depend on whether the relevant legal issue is the price impact of an alleged misrepresentation or the price impact of the falsity of the alleged misrepresentation. The latter framing of the price impact inquiry appears more consistent with testing the applicability of the "fundamental premise" according to the *Halliburton II* Court of the *Basic Inc.* presumption, whether the fraud mislead the market and caused the stock price to be distorted.

VI. CONCLUDING REMARKS: THE IMPACT OF *HALLIBURTON II* GOING FORWARD

We conclude by offering some thoughts on the likely impact of *Halliburton II* on the ability of plaintiffs to obtain class certification in most cases. Our first observation on the likely impact of *Halliburton II* begins with the fact that even assuming that defendants could defeat or limit class certification based on a showing of no price impact a significant percentage of the time, plaintiffs could potentially recast their claims as omissions claims. For omissions claims, plaintiffs seeking class certification may not need to rely on the *Basic Inc.* presumption for class certification, but rather may invoke the presumption found in *Affiliated Ute Citizens v. United States*.[73] Since the showing of no price impact rebuts the *Basic Inc.* presumption, such a showing would simply not be relevant if plaintiffs proceeded under *Affiliated Ute*. Indeed, prior to *Halliburton II*, plaintiffs invoked the *Affiliated Ute* presumption approximately 1% of the time in class action complaints.[74] During the pendency of the *Halliburton II* decision, plaintiffs invoked the *Affiliated Ute* presumption 38% of the time, but after the *Halliburton II* decision, that number increased to 52%.[75] Of course, this is not to suggest that

73. 406 U.S. 128 (1972). Under *Affiliated Ute*, investors are entitled to a presumption of reliance (with no showing of market efficiency) if the allegations involve omissions. *Id.* at 153; *see also* Bebchuk & Ferrell, *supra* note 5, at 689.

74. RENZO COMOLLI & SVETLANA STARYKH, RECENT TRENDS IN SECURITIES CLASS ACTION LITIGATION: 2014 FULL-YEAR REVIEW 7 (2015), *available at* http://www.nera.com/content/dam/nera/publications/2015/PUB_Full_Year_Trends_2014_0115.pdf.

75. *Id.*

plaintiffs can always readily transform misrepresentation claims into omissions claims. Indeed, in omissions cases, plaintiffs may well need to establish a legal duty to disclose the omitted information in contrast to misrepresentation cases.[76]

Putting aside the availability of *Affiliated Ute*, we conclude that ultimately the impact of *Halliburton II* will largely depend on how subsequent courts understand the price impact inquiry and how they determine to evaluate the burden of proof associated with that interpretation. In particular, subsequent courts will likely need to better define whether the price impact inquiry relates specifically to the falsity of the alleged misrepresentation or the existence of the misrepresentation itself. To the extent the price impact inquiry turns on the falsity of the alleged misrepresentation, pleading standards should reflect the need for plaintiffs to clearly identify what could and should have been said as opposed to simply identifying a false statement. Currently, different courts are not uniform in their approach to this issue.

The impact of *Halliburton II* will also depend on how courts go about examining the price impact at the time of the alleged misrepresentation and at the time of the alleged corrective disclosure. Of particular interest in this regard is the *Regions Financial* decision.[77] This case involved allegations that Regions misrepresented the value of its assets and its financial stability.[78] The purported corrective disclosure consisted of a disclosure of a "$6 billion non-cash charge for impairment of goodwill."[79] Defendants argued that there was no statistically significant price reaction on any of the thirteen misrepresentation dates and that the price decline on the date of the corrective disclosure was not statistically significant.[80] Notably, the court, in rejecting defendants' price impact argument, did not reject the findings of no statistical significance for any of the misrepresentations and corrective disclosure dates.[81] It simply held that whether the stock price drop was due to overall market conditions is

76. *See* Basic Inc. v. Levinson, 485 U.S. 224, 239 n.17 (1988).

77. Local 703, I.B. of T. Grocery & Food Emps. Welfare Fund v. Regions Fin. Corp., No. CV–10–J–2847–S, 2014 WL 6661918 (N.D. Ala. Nov. 19, 2014).

78. *Id.* at *2. The court stated, "According to the plaintiffs' amended complaint, Regions made a series of misrepresentations beginning in 2008, about the value of its assets and its financial stability. More specifically, the plaintiffs allege that Regions—which was heavily invested in the real estate market—manipulated the way unhealthy assets were carried on its books to avoid disclosing significant losses that would compromise the company's value." *Id.* (quoting Local 703, I.B. of T. Grocery & Food Emps. Welfare Fund v. Regions Fin. Corp., 762 F.3d 1248, 1252 (11th Cir. 2014)).

79. *Id.* at *7.

80. *Id.* at *6.

81. *Id.* at *8

properly reserved for the jury.[82] As the court explained, "[w]hether this tumble was due to defendants' corrective disclosures . . . or due to the overall market conditions on that day, is . . . properly reserved for a jury to decide."[83] The court cited as affirmative "evidence of price impact" the non-cash accounting corrective disclosure and that it was mentioned in analysts' reports, even though this evidence related to a potential price impact at the time of the corrective disclosure and not necessarily at the time of the alleged misstatement.[84]

Finally, even with these questions resolved, courts will face challenges assessing the economic evidence amassed by the parties. Given a properly conducted event study, courts may have to determine whether a lack of a statistically significant stock price change observed in the actual world implies a price impact in the hypothetical world, and vice versa. And courts will need to determine in a consistent way which set of disclosures, in addition to the misrepresentation disclosure itself, can be considered in the course of assessing price impact.

While the *Halliburton II* Court seemed to think that event studies would be a relatively straightforward way of sorting securities class actions at the class certification stage, the complexities of actual practice might turn out quite differently.

---

82. *Id.*
83. *Id.*
84. *Id.* at *7.