When Traditional Event Study Is Not Sufficient to Rebut the Basic Presumption of Reliance: A Survey of Federal Court Opinions Following *Halliburton II*

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The 2014 decision by the U.S. Supreme Court in *Halliburton Co. v. Erica P. John Fund, Inc.*, 573 U.S. 258, 134 S. Ct. 2398, 189 L. Ed. 2d 339, Fed. Sec. L. Rep. (CCH) P 98003, 88 Fed. R. Serv. 3d 1472 (2014) ("*Halliburton II*") ruled that defendants in securities class actions may rebut the presumption of reliance if it can be proven that the alleged misrepresentations have no material adverse effect on stock prices ("price impact"). The presumption of reliance, first set by the Court in *Basic Inc. v. Levinson*, 485 U.S. 224, 108 S. Ct. 978, 99 L. Ed. 2d 194, Fed. Sec. L. Rep. (CCH) P 93645, 24 Fed. R. Evid. Serv. 961, 10 Fed. R. Serv. 3d 308 (1988), is a legal doctrine that allows the functioning of an efficient market to substitute for more individuated evidence of investors' reasons for purchasing and selling a stock. While *Halliburton II* provided an additional avenue for defendants to overturn claims in securities class actions, failure to provide an appropriate event study analysis to address the complexities of confounding factors and other contextual details can lead to unsuccessful challenges.

In this article, we present our findings based on a survey of 138 federal court opinions following *Halliburton II* through September 28, 2022. Our survey reveals that to rebut the presumption of reliance, a defendant must affirmatively demonstrate by statistical and scientific evidence that the information at issue did not impact the company's stock price. Our survey also suggests that when a price impact appears to have occurred, defendants may still challenge the presumption of reliance by proving statistically that the market reaction is more likely to be

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attributable to confounding disclosures than the information at issue.

Key Takeaways

- While 57% of defendants in our review attempted to rebut the presumption of reliance by disproving price impact, only 15% produced an event study to support their challenge, and only 3.6% defeated certification, with another 3.6% obtaining a limitation on certification or a remand.
- If a defendant is not able to demonstrate a lack of market efficiency, then—in order to meet the *Halliburton* court's challenge—the defendant may instead demonstrate, for example, that the market is highly efficient in its response to confounding information but is statistically unlikely to respond to the type of information at issue.
- Defendants could measure comparative efficiency within the limits of broadly accepted scientific methodologies by conducting a "cross-sectional event study" to measure the relationship between the "nature"[1] of various types of information and the market's ability to incorporate it into the price—how frequently each type of information impacts share prices and *to what degree.*
- While showing comparative efficiency does not necessarily *prove* that alleged misrepresentation did not cause a price impact, this kind of prediction may satisfy the preponderance burden by demonstrating that confounding information is the more likely cause of the entire price impact than the alleged information in the misstatement or corrective disclosure.

Survey of Defendants' Efforts to Rebut Presumption of Reliance Shows a Disconnect Between the Courts' Requirements and Defendants' Evidence

A survey of 138 federal court opinions citing *Halliburton II* and containing the words "certification" and "price impact" shows that defendants mostly fail when attempting to rebut the presumption of reliance in securities class actions. Among these opinions, we found 79 attempts to rebut the presumption by showing no price impact, leaving 59 opinions (approximately 40%) where *Halliburton II* was cited but defendants did not attempt to rebut the presumption. However, in 58 of the 79 attempts, the defendants did not offer their own event study evidence to challenge price impact.[2] In those 58 cases, the courts only denied class certification twice: once due to a failure to adequately plead a price maintenance theory and, in the other case, due to hedging

language in financial statements that made it irrational for any investor to rely on them.[3]

Of the 79 attempts surveyed, 21 attempted to rebut the presumption of reliance through challenging price impact using an event study methodology. Of these 21 attempts, 14 did not rebut the presumption for the following reasons:

- Five attempts merely demonstrated the existence of confounding factors;[4]
- Four attempts merely proved the price impact not to be significant;[5]
- Three attempts did not show a lack of price impact following corrective disclosures;[6] and
- Two attempts incorrectly executed statistical tests by focusing on the price impact of an individual event rather than a particular type of news or information.[7]

Two of the opinions surveyed were versions of the decision in *Goldman Sachs Group, Inc. v. Arkansas Teacher Retirement System*, 141 S. Ct. 1951, 210 L. Ed. 2d 347, Fed. Sec. L. Rep. (CCH) P 101121 (2021), where the 2nd Circuit found that the district court did not abuse discretion in finding that the defendant's event study failed to rebut the presumption of reliance.[8] The Supreme Court subsequently remanded, with the instruction that, when considering whether the connection between misstatements and market price has been severed, the nature of the information at issue must be properly taken into account.[9] The lower court was also instructed to "take into account *all* record evidence relevant to price impact, regardless whether that evidence overlaps with materiality or any other merits issue."[10]

In four of the surveyed opinions, the defendant successfully presented event study evidence to rebut the presumption of reliance by either showing that correcting the plaintiff's event study methodology showed no price impact,[11,12,13,] or demonstrating—through affirmative statistical evidence—that another confounding factor caused the price impact.[14]

Of the 14 unsuccessful attempts, three approaches appear to have had the potential to successfully rebut the presumption of reliance. In those cases, defendants presented statistical evidence that confounding factors were responsible for the observable price impact. First, in *Zwick Partners LP v. Quorum Health Corp*, the court refused to determine whether the defendant's expert report (an event study demonstrating that the market was unresponsive to the information at issue) met the preponderance standard because it would essentially involve a decision on "loss causation." The court found it more appropriate for the merits stage.[15]

Second, in *In re Goldman Sachs Grp., Inc. Sec. Litig.*, an event study showed the market had previously failed to respond to 34 prior news days where similar news—allegations of conflicts of interest—had entered the market. Third, *In re Virtus Inv. Partners, Inc.*, an event study showed no price response to four prior news releases arguably containing partial disclosures of the information at issue.[16]

In those three cases, the courts characterized their rejections of comparative efficiency evidence on the assumption that they were offered to support prohibited "truth-on-the-market" materiality arguments.[17] This reluctance by the courts to weigh the preponderance of contradictory statistical evidence brought at the certification stage to disprove price impact was explicitly rebuked by the 2nd Circuit when it first remanded *Goldman*.[18]

Challenges to the Presumption of Reliance in Securities Class Actions Must Sever the Link between Alleged Misrepresentation and Market Price

The precedent of reliance set by *Basic* in 1988 established the importance of the fraud-on-the-market theory ("FOTM") in securities class actions. FOTM is based on the premise that stock prices are a function of all material information about a company and its business. FOTM is particularly important in the context of securities class actions because proving reliance would otherwise be an intensely individualized prospect.[19] This would present a barrier to class certification, which requires plaintiffs to show that "questions of law or fact common to class members predominate over any questions affecting only individual members."[20] After the decision in *Basic,* FOTM provides a common explanation for each plaintiff's reliance on the defendants' alleged misstatements, making it easier to pursue securities litigation on a class-wide basis.

FOTM allows plaintiffs to establish the element of "reliance," where there is the presumption that the alleged misrepresentation or omission occurred in an efficient market of the stock. Investors are assumed to have relied, directly or indirectly, on the alleged misstatements if the prevailing market price reacts to all relevant and publicly available information. Plaintiffs establish their right to the presumption by demonstrating the *ability* of information, such as an alleged misrepresentation, to affect prices—i.e., establishing market efficiency.

Following such a demonstration, *Halliburton II* permits, at least in theory, the defendants to rebut the presumption of reliance by "[a]ny showing that severs the link between the alleged misrepresentation and either the price received (or paid) by the

plaintiff, or his decision to trade at a fair market price."[21] While some defendants have managed to "pick off" individual plaintiffs with evidence of their trading motivations, it is the link between the alleged misrepresentation and trading price that offers a chance to challenge class certification. To sever this link, the defendant may either challenge the market's general responsiveness to information or examine whether the market actually responded to the alleged misinformation.

Most legal challenges in securities class action cases succeed or fail on the questions of market efficiency and price impact. Of the 138 opinions in our survey, 39 addressed disputes over market efficiency, and 79 addressed disputes over price impact (with 24 overlapping).

Both market efficiency and price impact are dependent on expert testimony. Plaintiff experts typically establish market efficiency through event study analyses that compare, after accounting for market and industry factors, how a stock price has historically moved on days with firm-specific news versus non-news days. Defendant experts may offer their own event study to challenge a finding of market efficiency or extend the event study to show that the alleged misinformation or its correction generated no price impact.

In either case, with regards to rebutting the presumption of reliance, the defendant expert must sever the link between the alleged misrepresentation and the stock price through evidence that is directly inconsistent with either of these propositions. As the litigation ultimately hinges on challenges to the presumption, "[t]he overriding substantive issue in securities fraud cases has become whether an expert has proffered an opinion based on a reliable event study."[22] Consequently, attempts to rebut the presumption turn to the methodology and scope of the defendant's event study. Most such challenges since *Halliburton II* have been unsuccessful because such an affirmative study was not provided or the court found fault in its design.

In *Goldman,* the Supreme Court treated as given that price impact may be demonstrated by market prices responding either positively to alleged misinformation ("front-end" impact) or negatively to a corrective disclosure ("back-end" impact).[23] A total of 67 opinions in our survey discussed the acceptability of evidence of "back-end" price impact. Of those opinions, 64 either enforced this principle or discussed it in a positive light.[24,25] Our survey shows that a failure to demonstrate a lack of back-end impact was considered a significant reason why several attempts were unsuccessful.[26]

In *Halliburton II*, the Supreme Court widened the scope of inquiry regarding price impact by permitting defendants to rebut

the presumption with "direct, 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."[27] Notably, as clarified in *Amgen*,[28] it is crucial that a defendant's attempts to rebut with salient evidence maintain a distinction between price impact and materiality, which does not implicate commonality. A careful framing of salient evidence is important, because, at the certification stage, our survey shows that courts reject any evidence aimed at materiality.[29] At the same time, courts are willing to consider evidence probative of price impact even if it incidentally implicates materiality.[30]

While *Halliburton II* "recognized a new avenue for defendants to rebut" the presumption at the certification stage,[31] the defendant nevertheless bears the burden of proving that "price impact is inconsistent with the results of [plaintiffs'] analysis."[32] Our survey of decisions shows that lower courts have held defendants to a very substantial burden in this respect.[33] As such, court decisions reveal that comprehensive event studies demonstrating a lack of significant front-end and back-end price impact may be used to rebut the presumption of reliance.

Estimating Market Efficiency Should be a Comparative, Rather than a Binary, Proposition

Our survey suggests that one important avenue through which defendants have tried to rebut the presumption of reliance is by challenging the efficiency of the market. Following *Halliburton II*, the standard for establishing market efficiency was relaxed, as the Supreme Court recognized that the economic theory of market efficiency is not a "binary" proposition but a "matter of degree."[34] It has been pointed out that evaluations of market efficiency to establish the presumption of reliance should therefore focus more specifically on whether a market has been demonstrated to respond to the *type* of information at issue.[35]

For example, in *Goldman*, the Supreme Court found that when the impact of a corrective disclosure is presented under a price maintenance theory, the generic nature of the alleged misstatements may be important evidence of a *lack* of price impact because "a more-general statement will affect a security's price less than a more-specific statement on the same question."[36] The Court in *Goldman* explained its position by comparing a generic statement ("we have faith in our business model") with a more specific corrective disclosure ("our fourth quarter earnings did not meet expectations") in the context of disconnecting the measured price-impact of the corrective disclosure from the inflation that the generic misstatement is alleged to have maintained.[37]

The Court's position may provide a more general basis for

defendants to disprove price impact by investigating the ability of the alleged misstatements to create inflation based on the importance to the market "of that kind of statement." An econometric application of this principle would require customized event studies to test the responsiveness of a market to information that is similar to the information at issue compared to other types. For example, where the alleged fraud takes the form of a generic statement—such as, "We have extensive procedures and controls that are designed to identify and address conflicts of interest"[38] the defendant's expert may perform a test of the market's responsiveness to inclusion and exclusion of the boilerplate language addressing conflict management compared to a test of its responsiveness to the content of confounding information. The district court in *Goldman* explained that a clear and well-supported understanding of the nature of the information at issue will be critical to this analysis.[39] This hurdle will likely require supplemental expert testimony to establish appropriate categorizations of comparable events based on how traders understand and react to different types of information.[40]

The "truth-on-the-market" doctrine focuses on materiality and thus is impermissible at the certification stage. The instinctive response to the introduction of prior discoveries of similar allegations may be to dismiss it on those grounds.[41] Our survey of opinions following *Haliburton II* suggests that counsels and experts would have to ensure that arguments are unambiguously directed to the efficiency question and clearly divorced from any materiality question. A defendant's argument that the market is not reactive to the type of information at issue that characterizes the alleged misstatements must not be construed as an argument that no misstatements were made. Our findings suggest that defendants would potentially benefit from arguing that the market is not efficient to information of the type they are accused of falsifying in their challenges to the presumption of reliance.

Defendants May Use Statistical Evidence to Prove that Confounding Information Was the True Cause of Measured Price Movements

Defendants have often argued that abnormal price movements were caused by extraneous factors and not the alleged misrepresentations or corrective disclosures. An unavoidable weakness of event studies is the potential presence of confounding factors, which may be expected to affect the market price contemporaneously with the information at issue.[42] Courts have drawn a distinction between demonstrating the mere existence and establishing "by a preponderance of the evidence that the drop in the price . . . was not caused at least in part by the [corrective]

disclosure."[43] As suggested by our survey findings, a failure of the defendants to offer their own event study may "arguably support rejection of the defendants' arguments" at the class certification stage.[44] This is because, if the totality of presented statistical evidence leaves ambiguity between multiple potential causes of a price impact, loss causation becomes a question that is "properly reserved for the jury to decide."[45]

This presents a dilemma to financial economists, as statistical evidence does not lend itself to proving a negative. Our survey shows that, in order to statistically demonstrate a lack of price impact, defendants must present expert evidence that affirmatively demonstrates it is more likely than not that market movements are fully attributable to other causes. While this has been pursued by defendant experts, the district courts' implementation of *Halliburton II* suggests that a judgment of an alternative explanation as "more likely" will have to be directly supported by statistical evidence. The *Goldman* opinion notes that "*Basic* places the burden of untangling[] events on the defendants" by demonstrating that "other events explain the entire price drop."[46] The qualification in this quote, along with routine rejection of qualitative evidence of other factors, suggests that courts will only be satisfied by econometric evidence to that effect.

Based on *Halliburton II* and the findings in our survey, defendants would need to demonstrate that the possibility of price impact as a result of the alleged misrepresentations is the less likely explanation compared to a demonstrably more likely explanation based on confounding information. By demonstrating that the *type* of information in an alleged misrepresentation has a quantified likelihood of causing a significant price impact, an expert may satisfy the preponderance burden for rebuttal by demonstrating that information associated with confounding events had a greater likelihood of causing the entire price impact. It would follow that the stock price is unlikely to react to the type of information at issue, as compared to other confounding kinds of information.

If market efficiency is a question that may apply separately to different kinds of information, the nature of that information—as emphasized in the latest *Goldman* decision—is probative as to price impact, opening up an entirely new scope of analysis to develop identified confounding events into affirmative evidence of an alternative causation narrative. Because market efficiency is a matter of degree rather than binary,[47] a robust efficiency analysis to challenge the presumption of reliance should be comparative rather than singular.

At the class certification stage, a plaintiff expert's event study typically demonstrates, essentially in a binary fashion, that the

market is efficient. This evidence only shows a *directional* expectation that the market should generally respond to, broadly, "information." This relatively weak prediction shifts the burden of persuasion to the defendant. However, following *Halliburton II* and the additional nuance provided in *Goldman*, the role of the financial economist on behalf of the defendant should be to present a more complete explanation by demonstrating the effects of all the relevant information to which the market is, by varying levels, efficient.

Our survey of federal court opinions following *Halliburton II* suggests that, at class certification, defendants seeking to rebut the *Basic* presumption by showing a lack of price impact *without their own event study* failed to defeat certification in 53 out of 58 attempts (91%).[48] Defendants who *did* present event studies defeated or partially defeated certification in four out of 21 attempts (19%)[49] and obtained remand in a fifth attempt.[50] However, five such attempts were not successful or were not entirely successful because the expert did not disaggregate price impact from confounding factors (24%).[51] Four were unsuccessful because they focused on proving *insignificant* price impact (19%).[52] Three were unsuccessful because they focused exclusively on disproving front-end price impact (14%).[53] Two did not satisfy the court with their scientific rigor (10%).[54] As noted above, three attempts were rejected by the court as evidence probative to the merits,[55] an objection that has since been rejected at the Circuit level.[56]

Our review of court opinions indicates that the courts have demonstrated an appetite to see price impact refuted by affirmative statistical evidence that is directly inconsistent with the notion that the information at issue impacted the market price. We conclude that the empirical goalposts these opinions describe are obtainable through a statistical and scientific-based study as the basis for a predictive model that disaggregates returns expected from confounding information, accounting for the entirety of any residual return.

NOTES:

[1]*See, e.g., Goldman Sachs Group, Inc. v. Arkansas Teacher Retirement System*, 141 S. Ct. 1951, 210 L. Ed. 2d 347, Fed. Sec. L. Rep. (CCH) P 101121 (2021) ("The generic nature of a misrepresentation often will be important evidence of a lack of price impact, particularly in cases proceeding under the inflation-maintenance theory.").

[2]*Pirnik v. Fiat Chrysler Automobiles, N.V.*, 327 F.R.D. 38, 45, Fed. Sec. L. Rep. (CCH) P 100214 (S.D. N.Y. 2018) (finding the basic presumption was not rebutted when "[the] [d]efendant did not conduct, or submit, their own event study to show the absence of price impact" and instead critiqued plaintiffs'

expert); *In re Signet Jewelers Limited Securities Litigation*, Fed. Sec. L. Rep. (CCH) P 100518, 2019 WL 3001084, *13 (S.D. N.Y. 2019) ("Defendants' failure to . . . supplement [the expert's] report with an event study showing the absence of price impact is, on its own, a basis for rejecting Defendants' arguments."); appeal withdrawn sub nom.; *Public Employees Retirement System of Mississippi v. Signet Jewelers Limited*, 2020 WL 773018 (2d Cir. 2020).

[3]*See In re Finisar Corporation Securities Litigation*, 2019 WL 2247750, ¶ 11 (N.D. Cal. 2019) ("Plaintiff has not previously and cannot now proceed on a price maintenance theory"); *Hayes v. MagnaChip Semiconductor Corp.*, 2016 WL 7406418 (N.D. Cal. 2016) ("Avenue Capital argues that [the] presumption is 'rebutted as of March 11, 2014 because no investor could have reasonably relied after . . . its March 2014 disclosures [disclosed] that its prior financial statements 'should not be relied upon.' ").

[4]*Local 703, I.B. of T. Grocery & Food Employees Welfare Fund v. Regions Financial Corp.*, 762 F.3d 1248, Fed. Sec. L. Rep. (CCH) P 98132 (11th Cir. 2014) ("Whether this tumble was due to defendants' corrective disclosures [or] the overall market conditions on that day, is . . . properly reserved for a jury to decide."); *In re CenturyLink Sales Practices and Securities Litigation*, 337 F.R.D. 193, 2020 Employee Benefits Cas. (BNA) 350239, Fed. Sec. L. Rep. (CCH) P 100902 (D. Minn. 2020) ("claims that other factors also contributed in part to the price drops are insufficient to rebut the Basic presumption"); *Allegheny County Employees' Retirement System v. Energy Transfer LP*, 623 F. Supp. 3d 470, Fed. Sec. L. Rep. (CCH) P 101453, 113 Fed. R. Serv. 3d 940 (E.D. Pa. 2022) ("Ms. Allen failed to disaggregate potentially confounding factors such as the earnings announcement in her analysis"); *Erica P. John Fund, Inc. v. Halliburton Co.*, 309 F.R.D. 251, Fed. Sec. L. Rep. (CCH) P 98584 (N.D. Tex. 2015) ("Halliburton has not demonstrated that uncertainty caused the entirety of Halliburton's substantial price decline"); *Pelletier v. Endo International PLC*, 338 F.R.D. 446, Fed. Sec. L. Rep. (CCH) P 101112 (E.D. Pa. 2021), ("without specific evidence or expert testimony isolating out the two different price effects, the Court cannot determine the February 28 price increase was not less than would have occurred without the purported disclosure on that date.").

[5]*Monroe County Employees' Retirement System v. Southern Company*, 332 F.R.D. 370, Fed. Sec. L. Rep. (CCH) P 100545, 104 Fed. R. Serv. 3d 1182 (N.D. Ga. 2019) ("although a non-statistically significant price decline, without more, may not 'demonstrate a price impact,' neither is it 'necessarily proof of the opposite.' "); *St. Clair County Employees' Retirement System v. Acadia Healthcare Company, Inc.*, 2022 WL 4598044 (M.D. Tenn. 2022) ("the existence of non-statistically-significant stock price declines does not prove the absence of price impact.' "); *Allegheny County Employees' Retirement System v. Energy Transfer LP*, 623 F. Supp. 3d 470, Fed. Sec. L. Rep. (CCH) P 101453, 113 Fed. R. Serv. 3d 940 (E.D. Pa. 2022) ("courts routinely reject the argument that a non-statistically significant stock price decline proves an absence of price impact."); *Rooney v. EZCORP, Inc.*, 330 F.R.D. 439 (W.D. Tex. 2019) (". . . the absence of a statistically significant price adjustment does *not* show the stock price was unaffected by the misrepresentation.").

[6]*Baker v. Seaworld Entm't, Inc.*, 2017 U.S. Dist. LEXIS 196235 ("Because Defendants introduce no evidence of a lack of price impact associated with the August 13 disclosure, Defendants fail to rebut the presumption of reliance."); *Willis v. Big Lots, Inc.*, 242 F. Supp. 3d 634 (S.D. Ohio 2017) ("Defendants failed to show that there was no statistically significant price impact following the corrective disclosures in this case. Accordingly, Defendants have failed to rebut the presumption of reliance . . ."); *IBEW Local 98 Pension Fund v. Best Buy Co.*, 2014 U.S. Dist. LEXIS 108409 ("Defendants . . . have not offered evidence to

show that Best Buy's stock price did not decrease when the truth was revealed. Thus . . . Defendants have not submitted evidence sufficient to rebut the presumption").

[7]*In re Goldman Sachs Grp., Inc.*, 2018 U.S. Dist. LEXIS 137414 ("Dr. Choi's opinion . . . is wholly predicated on the premise that the first price decline is *consistent* with price declines that four other companies previously experienced upon the news of similar enforcement events."); *In re Chicago Bridge & Iron Company N.V. Securities Litigation*, 2019 WL 5287980 (S.D. N.Y. 2019) ("defendants' expert . . . argued for the application of a Bonferri adjustment . . . a price impact analysis does not represent the type of problem that the Holm-Bonferroni adjustment corrects.").

[8]*Arkansas Teacher Retirement System v. Goldman Sachs Group, Inc.*, 955 F.3d 254, Fed. Sec. L. Rep. (CCH) P 100790 (2d Cir. 2020) ("We find no abuse of discretion in the court's finding that the inflation maintained by Goldman's statements equaled the price drop caused by the corrective disclosures.").

[9]*Goldman Sachs Group, Inc. v. Arkansas Teacher Retirement System*, 141 S. Ct. 1951, 210 L. Ed. 2d 347, Fed. Sec. L. Rep. (CCH) P 101121 (2021) (. . . the generic nature of a misrepresentation often is important evidence of price impact that courts should consider at class certification.").

[10]*Goldman Sachs Group, Inc. v. Arkansas Teacher Retirement System*, 141 S. Ct. 1951, 1961, 210 L. Ed. 2d 347, Fed. Sec. L. Rep. (CCH) P 101121 (2021).

[11]'*Ohio Public Employees Retirement System v. Federal Home Loan Mortgage Corporation*, 2018 WL 3861840 (N.D. Ohio 2018) ("using a corrected version of Dr. Feinstein's market model regression, [Dr. Bajaj] . . . found statistically insignificant stock price reactions or reactions that were statistically significant in the wrong direction on 22 of the 23 effective dates.").

[12]'*See IBEW Local 98 Pension Fund v. Best Buy Co., Inc.*, 818 F.3d 775, Fed. Sec. L. Rep. (CCH) P 99067 (8th Cir. 2016) ("[Steinholt's] event study showed that the forward-looking EPS guidance in the press release had an immediate impact on the BBY market prices, whereas the confirming statements in the conference call two hours later had no additional price impact. This overwhelming evidence of no "front-end" price impact rebutted the Basic presumption.").

[13]'*Erica P. John Fund, Inc. v. Halliburton Co.*, 309 F.R.D. 251, Fed. Sec. L. Rep. (CCH) P 98584 (N.D. Tex. 2015) ("Allen made each of three adjustments advocated by Coffman—using the additional Analyst Index, making a multiple comparison adjustment for only six dates, and applying the Holm-Bonferroni adjustment—and added in the balance of the thirty-five dates to make Coffman's model internally consistent, and she found no price impact. As already discussed, the Court finds that these adjustments are appropriately applied to Coffman's model. Accordingly, neither Coffman's, nor Allen's, analysis shows price impact on June 28, 2001, and Defendants have rebutted the Basic presumption as to the corrective disclosure on that date.").

[14]In re Finisar Corp. Secs. Litig., 2017 U.S. Dist. LEXIS 201150, Fed. Sec. L. Rep. (CCH) P99929 (finding that where no price maintenance was alleged, and no statistically significant price impact occurred in the three hours between misstatements and market close, confounding information released after market close was the more likely cause of price increases the following morning).

[15]*Zwick Partners, LP v. Quorum Health Corp.*, 394 F. Supp. 3d 804, 104 Fed. R. Serv. 3d 877 (M.D. Tenn. 2019) ("event study [determined that] this announcement did not have a statistically significant effect on either company's stock . . . a study of other companies' [similar] announcements . . . showed no statistically significant effect on these companies' stock prices . . . Defendants'

proof does not rebut the fraud on the market presumption by a preponderance of the evidence [but] creates a factual dispute as to the materiality.").

[16]*In re Virtus Investment Partners, Inc. Securities Litigation*, Fed. Sec. L. Rep. (CCH) P 99720, 2017 WL 2062985 (S.D. N.Y. 2017) ("Defendants' expert concluded that there was no statistically significant abnormal negative return on the days these articles were published.").

[17]*In re Goldman Sachs Grp., Inc. Sec. Litig.*, 2015 U.S. Dist. LEXIS 128856 ("argument is an inappropriate 'truth on the market' defense"); *In re Virtus Investment Partners, Inc. Securities Litigation*, Fed. Sec. L. Rep. (CCH) P 99720, 2017 WL 2062985 (S.D. N.Y. 2017) ("Defendants' argument is essentially a 'truth-on-the-market defense,' which is inappropriate on a motion for class certification.").

[18]*Arkansas Teachers Retirement System v. Goldman Sachs Group, Inc.*, 879 F.3d 474, Fed. Sec. L. Rep. (CCH) P 99952, 105 Fed. R. Evid. Serv. 499, 99 Fed. R. Serv. 3d 932 (2d Cir. 2018), ("Although price impact touches on materiality . . . it 'differs from materiality in a crucial respect.' . . . If a defendant shows that an 'alleged misrepresentation did not, for whatever reason, actually affect the market price of defendant's stock,' . . . the fraud-on-the-market theory underlying the presumption would 'completely collapse[].' . . . [T]he District Court should consider . . . whether defendants established by a preponderance of the evidence that the misrepresentations did not in fact affect the market price.").

[19]*Halliburton Co. v. Erica P. John Fund, Inc.*, 573 U.S. 258, 134 S. Ct. 2398, 189 L. Ed. 2d 339, Fed. Sec. L. Rep. (CCH) P 98003, 88 Fed. R. Serv. 3d 1472 (2014), citing *Basic Inc. v. Levinson*, 485 U.S. 224, 108 S. Ct. 978, 99 L. Ed. 2d 194, Fed. Sec. L. Rep. (CCH) P 93645, 24 Fed. R. Evid. Serv. 961, 10 Fed. R. Serv. 3d 308 (1988) ("for investors in impersonal markets, the traditional reliance requirement was hard to prove and impossible to prove as common among plaintiffs bringing 10b-5 class-action suits.").

[20]*Halliburton Co. v. Erica P. John Fund, Inc.*, 573 U.S. 258, 134 S. Ct. 2398, 189 L. Ed. 2d 339, Fed. Sec. L. Rep. (CCH) P 98003, 88 Fed. R. Serv. 3d 1472 (2014), quoting *Comcast Corp. v. Behrend*, 569 U.S. 27, 133 S. Ct. 1426, 185 L. Ed. 2d 515, 2013-1 Trade Cas. (CCH) ¶ 78316, 85 Fed. R. Serv. 3d 118 (2013).

[21],*Basic Inc. v. Levinson*, 485 U.S. 224, 248, 108 S. Ct. 978, 99 L. Ed. 2d 194, Fed. Sec. L. Rep. (CCH) P 93645, 24 Fed. R. Evid. Serv. 961, 10 Fed. R. Serv. 3d 308 (1988).

[22]Kaufman & Wunderlich, Regressing: The Troubling Dispositive Role of Event Studies in Securities Fraud Litigation, 15 Stan. J.L. Bus. & Fin. 183 at 187 (2009).

[23]*Goldman Sachs Group, Inc. v. Arkansas Teacher Retirement System*, 141 S. Ct. 1951, 210 L. Ed. 2d 347, Fed. Sec. L. Rep. (CCH) P 101121 (2021) ("under the inflation-maintenance theory . . . price impact is the amount of price inflation maintained by an alleged misrepresentation—in other words, the amount that the stock's price would have fallen 'without the false statement.' ").

[24]*Goldman Sachs Group, Inc. v. Arkansas Teacher Retirement System*, 141 S. Ct. 1951, 210 L. Ed. 2d 347, Fed. Sec. L. Rep. (CCH) P 101121 (2021) ("The generic nature of a misrepresentation often is important evidence . . . at class certification, including in inflation-maintenance cases . . . [because] that final inference—that the back-end price drop equals front-end inflation—starts to break down when there is a mismatch between the contents of the misrepresentation and the corrective disclosure.").

[25]*See* Tabak, "Securities Class Actions Appear to Be Largely 'Price-

Maintenance' and Omissions Cases," NERA Economic Consulting, April 2017 ("In addition, 44.9% of the cases in the sample have a negative market-adjusted stock-price movement on the first day of their class period . . . a finding consistent with a price-maintenance or omissions case"); Rapp, Plausible Cause: Exploring the Limits of Loss Causation in Pleading and Proving Market Fraud Claims Under Securities Exchange Act § 10(b) and SEC Rule 10b-5, 41 Ohio N.U.L. Rev 389 at 394 (2015) (". . . courts focus on the need to identify and link the demonstrable market price impact of a 'corrective disclosure' of the truth of a prior misrepresentation . . . as the defining factor to frame investor losses. However labeled, it is a *disclosure event* in one form or another that ties the alleged fraud to demonstrable losses.").

[26]*Baker v. Seaworld Entm't, Inc.*, 2017 U.S. Dist. LEXIS 196235 ("Because Defendants introduce no evidence of a lack of price impact"); *Willis v. Big Lots, Inc.*, 242 F. Supp. 3d 634 (S.D. Ohio 2017) ("Defendants failed to show that there was no statistically significant price impact following the corrective disclosures in this case"); *IBEW Local 98 Pension Fund v. Best Buy Co.*, 2014 U.S. Dist. LEXIS 108409 ("Defendants . . . have not offered evidence to show that Best Buy's stock price did not decrease when the truth was revealed.").

[27]*Halliburton Co. v. Erica P. John Fund, Inc.*, 573 U.S. 258, 134 S. Ct. 2398, 2415, 189 L. Ed. 2d 339, Fed. Sec. L. Rep. (CCH) P 98003, 88 Fed. R. Serv. 3d 1472 (2014).

[28]*Amgen Inc. v. Connecticut Retirement Plans and Trust Funds*, 568 U.S. 455, 133 S. Ct. 1184, 185 L. Ed. 2d 308, Fed. Sec. L. Rep. (CCH) P 97300, 84 Fed. R. Serv. 3d 1151 (2013) (". . . where misrepresentations and omissions are not material, there is no basis for presuming classwide reliance . . . through the information-processing mechanism of the market price. 'The problem with that argument,' the Court of Appeals observed, is evident: '[B]ecause materiality is an element of the *merits* of their securities fraud claim, the plaintiffs cannot both fail to prove materiality yet still have a viable claim for which they would need to prove reliance individually.' The Court of Appeals thus concluded that 'proof of materiality is not necessary' to ensure compliance with Rule 23(b)(3)'s requirement that common questions predominate.").

[29]Fisch, Gelbach & Klick, The Logic and Limits of Event Studies in Securities Fraud Litigation, 96 Tex. L. Rev. 553, 566 (2018) ("plaintiffs were using event studies to demonstrate market efficiency, and defendants were using event studies to counter this evidence . . . prohibiting a court from relying on this same evidence to evaluate whether the fraud affected stock price 'makes no sense' "), *citing* Halliburton Co., 309 F.R.D. at 262–63, 270, 280. On remand, Halliburton's expert presented an event study that "purported to find that neither the alleged misrepresentations nor the corrective disclosures identified by the plaintiff impacted Halliburton's stock price." The court found this evidence persuasive with respect to all but one of the six corrective disclosure dates, because event effects for those dates were statistically insignificant at the 95% confidence level.

[30]*Goldman Sachs Group, Inc. v. Arkansas Teacher Retirement System*, 141 S. Ct. 1951, 210 L. Ed. 2d 347, Fed. Sec. L. Rep. (CCH) P 101121 (2021) ("the Court remands for the Second Circuit to consider all record evidence relevant to price impact, regardless whether that evidence overlaps with materiality.").

[31]Schwartz & Appel, Rebutting the Fraud on the Market Presumption in Securities Fraud Class Actions: Halliburton II Opens the Door, 5 Mich. Bus. & Entrepreneurial L. Rev. 33, 36 (2015), citing *Halliburton Co. v. Erica P. John Fund, Inc.*, 573 U.S. 258, 134 S. Ct. 2398, 2416–17, 189 L. Ed. 2d 339, Fed. Sec. L. Rep. (CCH) P 98003, 88 Fed. R. Serv. 3d 1472 (2014).

[32]*Aranaz v. Catalyst Pharmaceutical Partners Inc.*, 302 F.R.D. 657, 669–73, Fed. Sec. L. Rep. (CCH) P 98198 (S.D. Fla. 2014).

[33]Murdock, The Significance and Impact of Price Distortion in the Fraud-on-the-Market Theory after Halliburton II, 46 Loy. U. Chi. L.J. 551, 552 (2015).

[34]*Halliburton Co. v. Erica P. John Fund, Inc.*, 573 U.S. 258, 134 S. Ct. 2398, 2410, 189 L. Ed. 2d 339, Fed. Sec. L. Rep. (CCH) P 98003, 88 Fed. R. Serv. 3d 1472 (2014) ("*Basic's* presumption of reliance thus does not rest on a 'binary' view of market efficiency. Indeed, in making the presumption rebuttable, *Basic* recognized that market efficiency is a matter of degree and accordingly made it a matter of proof.").

[35]Lipton, Fact or Fiction: Flawed Approaches to Evaluating Market Behavior in Securities Litigation, 20 Transactions 741, 763 (2019) ("Yet the court's framework continues to require an on/off approach to the assessment of whether the market was efficient in the first place, without regard to whether it was efficient *for this kind of information.*").

[36]*Goldman Sachs Group, Inc. v. Arkansas Teacher Retirement System*, 141 S. Ct. 1951, p.1, 210 L. Ed. 2d 347, Fed. Sec. L. Rep. (CCH) P 101121 (2021).

[37]*Goldman Sachs Group, Inc. v. Arkansas Teacher Retirement System*, 141 S. Ct. 1951, p.1, 210 L. Ed. 2d 347, Fed. Sec. L. Rep. (CCH) P 101121 (2021).

[38]*Goldman Sachs Group, Inc. v. Arkansas Teacher Retirement System*, 141 S. Ct. 1951, p.11, 210 L. Ed. 2d 347, Fed. Sec. L. Rep. (CCH) P 101121 (2021).

[39]*See*, *e.g., In re Goldman Sachs Grp., Inc.*, 2018 U.S. Dist. LEXIS 137414, at pp. 16–17 ("Dr. Choi selected four enforcement events (from the pool of 117) using three arbitrary characteristics which he denominated as 'severity factors.' He concedes that he was the first person to use these 'severity factors' together, and that these 'severity factors' are not generally accepted in the field. Accordingly, his use of the 'severity factors' casts doubt on his opinion.").

[40]Kevin LaCroix recently suggested that the *timeliness* of market reactions may also vary between different types of information, as traders sometimes rely on analysts to clarify certain types of information whose value implications must be derived from specialized knowledge. *See* LaCroix, K., "Price Impact, the Speed of Information, and Securities Class Certification," November 30, 2022, *The D&O Diary*.

[41]*See In re Goldman Sachs Grp., Inc. Sec. Litig.*, 2015 U.S. Dist. LEXIS 128856 ("Defendants' demonstration of 34 [prior disclosures that] Goldman had acted against clients' interest and on which there was no movement in Goldman's stock price, does not show a lack of price impact. This is because the argument is an inappropriate 'truth on the market' defense"); *In re Virtus Investment Partners, Inc. Securities Litigation*, Fed. Sec. L. Rep. (CCH) P 99720, 2017 WL 2062985 (S.D. N.Y. 2017) ("Defendants' argument is essentially a 'truth-on-the-market defense,' which is inappropriate on a motion for class certification."). *Also see* Lipton, Fact or Fiction: Flawed Approaches to Evaluating Market Behavior in Securities Litigation, 20 Transactions 741, 748 (2019) ("Sometimes [truth-on-the-market defense] is used to establish that any misstatements were immaterial from inception because the truth was available to investors . . . Other times, the truth may be revealed at a later date, to little obvious market reaction, and courts interpret the *lack* of price movement to mean . . . the original misstatement was immaterial"), and at 767 ("many class certification disputes [turn] on whether disclosure itself was, in fact, corrective [or whether] the fraud was actually revealed at an earlier time [with no price movement]. But these inquiries are often indistinguishable from prohibited inquiries into materiality and loss causation." citing as examples: *Thorpe v. Walter Inv. Mgmt.*

Corp., No. 1:14-cv-20880-UU, 2016 U.S. Dist. LEXIS 33637, at 44 (S.D. Fla. Mar. 16, 2016) ("These arguments, while plausible, are simply repackaged assertions that the corrective disclosure was in fact not corrective. Thus the Court is unable to decouple Defendants' arguments from a materiality inquiry, which would impermissibly require the Court to scrutinize the underlying merits"); *Halliburton*, 309 F.R.D. at 260 ("the Court finds that class certification is not the proper procedural stage for the Court to determine, as a matter of law, whether the relevant disclosures were corrective."); *Marcus*, 2016 U.S. Dist. LEXIS 115795, at 24–25 ("Defendants argue that [disclosures] were not actually 'corrective' because the information had been publicly reported earlier."); *Aranaz v. Catalyst Pharmaceutical Partners Inc.*, 302 F.R.D. 657, 671, Fed. Sec. L. Rep. (CCH) P 98198 (S.D. Fla. 2014) ("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 . . . for purposes of determining . . . whether the alleged misrepresentation had any impact on the price . . . the Court must disregard evidence that the truth was known to the public.").

42Schwartz & Appel, Rebutting the Fraud on the Market Presumption in Securities Fraud Class Actions: Halliburton II Opens the Door, 5 Mich. Bus. & Entrepreneurial L. Rev. 33, 55–57 (2015) ("It is difficult to construct a controlled event study that faithfully excises . . . only a single statement . . . and calculates the precise share-price impact to compare with a hypothetical world in which the statement was never made"; *citing In re PolyMedica Corporation Securities Litigation*, 453 F. Supp. 2d 260, 272 n.10 (D. Mass. 2006) ("The emerging field of behavioral finance suggests that differing investor assessments of value appear to be the rule, rather than the exception"); Dunbar & Heller, Fraud on the Market Meets Behavioral Finance, 31 Del. J. Corp. L. 455, 509 (2006) ("When the market is not efficient, however, the normal conditions for interpreting the valuation component of an event study are not present. If investors are not basing their price forecast on future cash flows alone, but . . . responding to momentum in the price, immaterial information about the issuer of the security may well have a significant effect on the price."); Brealey and Myers, "Principles of Corporate Finance" (6th Ed. 2000) at 191–291; Bendremer, Modern Portfolio Theory and International Investments Under the Uniform Prudent Investor Act, 2001, 35 Real Prop. Prob. & Tr. J. 791, 799–800; Tetlock, All the News That's Fit to Reprint: Do Investors React to Stale Information? 24 Rev. Fin. Stud. 1481 (2011) ("This paper presents evidence consistent with the hypothesis that individual investors overreact to stale information about publicly traded firms").

43*Strougo v. Barclays PLC*, 312 F.R.D. 307, Fed. Sec. L. Rep. (CCH) P 99015, 93 Fed. R. Serv. 3d 1768 (S.D. N.Y. 2016). *Also see Waggoner v. Barclays PLC*, 875 F.3d 79, Fed. Sec. L. Rep. (CCH) P 99918 (2d Cir. 2017) ("The 'fact that other factors contributed to the price decline does not establish *by a preponderance of the evidence* that the drop in the price . . . was not caused *at least in part* by the disclosure"; *Thorpe v. Walter Inv. Mgmt., Corp.*, 2016 U.S. Dist. LEXIS 33637 ("That market commentary did not mention the corrective disclosure does not by itself mean that the corrective disclosure had no price impact.").

44*See*, e.g., *Pirnik v. Fiat Chrysler Automobiles, N.V.*, 327 F.R.D. 38, Fed. Sec. L. Rep. (CCH) P 100214 (S.D. N.Y. 2018).

45*Local 703 v. Regions*, 2014 U.S. Dist. LEXIS 162403.

46*Arkansas Teacher Retirement System v. Goldman Sachs Group, Inc.*, 955 F.3d 254, 270 n.18, Fed. Sec. L. Rep. (CCH) P 100790 (2d Cir. 2020), emphasis added.

[47]*Halliburton Co. v. Erica P. John Fund, Inc.*, 573 U.S. 258, 134 S. Ct. 2398, 2410, 189 L. Ed. 2d 339, Fed. Sec. L. Rep. (CCH) P 98003, 88 Fed. R. Serv. 3d 1472 (2014) ("*Basic's* presumption of reliance thus does not rest on a 'binary' view of market efficiency. Indeed, in making the presumption rebuttable, *Basic* recognized that market efficiency is a matter of degree and accordingly made it a matter of proof.").

[48]In an additional three opinions surveyed, the court remanded the matter for reconsideration, leaving only two such opinions outright denying class certification.

[49]*Ohio Pub. Emples. Ret. Sys. v. Fed. Home Loan Mortg. Corp.*, 2018 U.S. Dist. LEXIS 137229 ("[expert] opinions grounded in well-established principles of statistics and financial economics are sound, relevant, and helpful . . ."); *In re Finisar Corporation Securities Litigation*, Fed. Sec. L. Rep. (CCH) P 99929, 2017 WL 6026244 (N.D. Cal. 2017) ("Defendants have rebutted the Basic presumption of fraud-on-the-market reliance by demonstrating through a preponderance of evidence that Gertel's December 2nd statements had no price impact when made or thereafter."); *IBEW Local 98 Pension Fund v. Best Buy Co., Inc.*, 818 F.3d 775, Fed. Sec. L. Rep. (CCH) P 99067 (8th Cir. 2016) ("defendants rebutted the Basic presumption by submitting direct evidence (the opinions of both parties' experts) that severed any link between the alleged conference call misrepresentations and the stock price at which plaintiffs purchased."); *Erica P. John Fund, Inc. v. Halliburton Co.*, 309 F.R.D. 251, Fed. Sec. L. Rep. (CCH) P 98584 (N.D. Tex. 2015) ("the Court finds a lack of price impact on December 4, 2001 and Halliburton has met its burden of rebutting the *Basic* presumption with respect to the corrective disclosure made on that date.").

[50]*Goldman Sachs Group, Inc. v. Arkansas Teacher Retirement System*, 141 S. Ct. 1951, 210 L. Ed. 2d 347, Fed. Sec. L. Rep. (CCH) P 101121 (2021) ("Because we conclude that the Second Circuit may not have properly considered the generic nature of Goldman's alleged misrepresentations, we vacate and remand for the Court of Appeals to reassess the District Court's price impact determination.").

[51]*Local 703, I.B. of T. Grocery & Food Emples. Welfare Fund v. Regions Fin. Corp.*, 2014 U.S. Dist. LEXIS 162403 ("defendants concede its stock tumbled 24% on January 24, 2009. Whether this tumble was due to defendants' corrective disclosures, . . . or due to the overall market conditions on that day, is an ultimate question in this action, and properly reserved for a jury to decide."); *In re CenturyLink Sales Practices & Sec. Litig.*, 337 F.R.D. 193, 2020 U.S. Dist. LEXIS 167572, Fed. Sec. L. Rep. (CCH) P100902 ("claims that other factors also contributed in part to the price drops are insufficient to rebut the Basic presumption '[because they do] not establish that the fraudulent conduct complained of did not also impact the price' "); *Allegheny County Employees' Retirement System v. Energy Transfer LP*, 623 F. Supp. 3d 470, Fed. Sec. L. Rep. (CCH) P 101453, 113 Fed. R. Serv. 3d 940 (E.D. Pa. 2022) ("Ms. Allen failed to disaggregate potentially confounding factors such as the earnings announcement in her analysis"); *Erica P. John Fund, Inc. v. Halliburton Co.*, 309 F.R.D. 251, Fed. Sec. L. Rep. (CCH) P 98584 (N.D. Tex. 2015) ("Although [some of the] decline on that date is likely attributable to uncertainty . . . Halliburton has not demonstrated that uncertainty caused the entirety of Halliburton's substantial price decline . . . Allen struggled to articulate why the price impact on December 7 could not be caused by the market's realization that Halliburton knew it faced increased asbestos exposure and had concealed that fact before December 7, as alleged by the Fund."); *also see Pelletier v. Endo International PLC*, 338 F.R.D. 446, Fed. Sec. L. Rep. (CCH) P 101112 (E.D. Pa. 2021), ("without

specific evidence or expert testimony isolating out the two different price effects, the Court cannot determine that the February 28 price increase was not less than would have occurred without the purported disclosure on that date.").

[52]*Monroe County Employees' Retirement System v. Southern Company*, 332 F.R.D. 370, Fed. Sec. L. Rep. (CCH) P 100545, 104 Fed. R. Serv. 3d 1182 (N.D. Ga. 2019) ("although a non-statistically significant price decline, without more, may not 'demonstrate a price impact,' neither is it 'necessarily proof of the opposite.' "); *St. Clair County Employees' Retirement System v. Acadia Healthcare Company, Inc.*, 2022 WL 4598044 (M.D. Tenn. 2022) (" '[c]ontrary to Defendants' argument, the existence of non-statistically-significant stock price declines does not prove the absence of price impact.' "); *Allegheny County Employees' Retirement System v. Energy Transfer LP*, 623 F. Supp. 3d 470, Fed. Sec. L. Rep. (CCH) P 101453, 113 Fed. R. Serv. 3d 940 (E.D. Pa. 2022) ("courts routinely reject the argument that a non-statistically significant stock price decline proves an absence of price impact."); *Rooney v. EZCORP, Inc.*, 330 F.R.D. 439 (W.D. Tex. 2019) (". . . the absence of a statistically significant price adjustment does *not* show the stock price was unaffected by the misrepresentation.").

[53]*Baker v. Seaworld Entm't, Inc.*, 2017 U.S. Dist. LEXIS 196235 ("Defendants introduce no evidence of a lack of price impact associated with the August 13 disclosure"); *Willis v. Big Lots, Inc.*, 242 F. Supp. 3d 634 (S.D. Ohio 2017) ("Defendants failed to show that there was no statistically significant price impact following the corrective disclosures in this case"); *IBEW Local 98 Pension Fund v. Best Buy Co.*, 2014 U.S. Dist. LEXIS 108409 ("Defendants . . . have not offered evidence to show that Best Buy's stock price did not decrease when the truth was revealed.").

[54]*In re Goldman Sachs Grp., Inc.*, 2018 U.S. Dist. LEXIS 137414 ("Dr. Choi's opinion . . . is wholly predicated on the premise that the first price decline is *consistent* with price declines that four other companies previously experienced upon the news of similar enforcement events."); *In re Chicago Bridge & Iron Company N.V. Securities Litigation*, 2019 WL 5287980 (S.D. N.Y. 2019) ("a price impact analysis does not represent the type of problem that the Holm-Bonferroni adjustment corrects.").

[55]*In re Goldman Sachs Grp., Inc. Sec. Litig.*, 2015 U.S. Dist. LEXIS 128856 ("argument is an inappropriate 'truth on the market' defense"); *In re Virtus Investment Partners, Inc. Securities Litigation*, Fed. Sec. L. Rep. (CCH) P 99720, 2017 WL 2062985 (S.D. N.Y. 2017) ("Defendants' argument is essentially a 'truth-on-the-market defense,' which is inappropriate on a motion for class certification.").

[56]*Arkansas Teachers Retirement System v. Goldman Sachs Group, Inc.*, 879 F.3d 474, Fed. Sec. L. Rep. (CCH) P 99952, 105 Fed. R. Evid. Serv. 499, 99 Fed. R. Serv. 3d 932 (2d Cir. 2018), ("Although price impact touches on materiality . . . it 'differs from materiality in a crucial respect.' . . . If a defendant shows that an 'alleged misrepresentation did not, for whatever reason, actually affect the market price of defendant's stock,' . . . the fraud-on-the-market theory underlying the presumption would 'completely collapse[].' . . . [T]he District Court should consider . . . whether defendants established by a preponderance of the evidence that the misrepresentations did not in fact affect the market price.").