United States Court of Appeals
For the First Circuit

No. 05-1221

In re XCELERA.COM SECURITIES LITIGATION

ALEX STUEBLER; JIM HICKS; JACK LADUE; GLOVER POWELL; DOUG HORAN,

Plaintiffs-Appellees,

v.

XCELERA.COM; ALEXANDER M. VIK; GUSTAV M. VIK,

Defendants-Appellants.

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

[Hon. Rya W. Zobel, U.S. District Judge]

Before

Torruella, Cyr, and Lipez, Circuit Judges.

Louis R. Cohen, with whom Todd C. Zubler, Jonathan Cedarbaum, Peter J. Macdonald, Robin L. Alperstein, and Wilmer Cutler Pickering Hale and Dorr LLP were on brief, for appellants.

Peter A. Pease, with whom Patrick T. Egan, Colleen M. Conners, Berman Devalerio Pease Tabacco Burt & Pucillo, Elaine Kusel, Jeffrey Spinazzola, and Milberg Weiss Bershad & Schulman LLP were on brief, for appellees.

December 13, 2005

LIPEZ, **Circuit Judge**. We treat this interlocutory appeal from an order certifying a class in a securities fraud case as a companion case to In re PolyMedica Corp. Sec. Litig., No. 05-1220, slip op. (1st Cir. Dec. _, 2005), also decided this day. Our determination in PolyMedica of the standard of efficiency to be used in the application of the fraud-on-the-market theory informs the analysis in this case. Defendants-Appellants Xcelera Inc.[1], an Internet holding company, and its directors, Alexander and Gustav Vik (collectively, "Defendants"), argue that the district court erred in determining that the market for Xcelera stock was efficient during the relevant time period, and certifying the class on that basis. For the reasons set forth below, we affirm.

I.

Alex Stuebler, Jim Hicks, Jack Ladue, Glover Powell, and Doug Horan ("Plaintiffs") are purchasers of Xcelera stock, who seek to represent a class of all purchasers of Xcelera stock from April 1, 1999, through August 8, 2000 (the "Class Period").[2] According

[1] While Plaintiffs (and the case caption) refer to the company involved in this case as "Xcelera.com, Inc.," we refer to the company by the name used by Defendants, "Xcelera Inc."

[2] Plaintiffs also seek to represent a subclass of all purchasers of Xcelera stock who purchased stock on the same day or within three trading days after each of Alexander and Gustav Vik's allegedly insider sales, which are said to have taken place on and between February 22, 2000, and June 22, 2000. Certification of the subclass necessarily hinges upon certification of the class. Since we affirm the district court's order certifying the class, and since Defendants do not object to that portion of the district court's order certifying the subclass, we do not address the

to Plaintiffs, Defendants issued a press release on April 1, 1999, stating that Xcelera had acquired a majority interest in Mirror Image Internet, Inc. ("Mirror Image"), an Internet holding company. More press releases and television appearances followed throughout the Class Period, touting Xcelera's ownership of Mirror Image. Defendants allegedly did not disclose, however, that this acquisition was part of a joint venture with two other companies, Kahnberget Holding, Ltd., and JAM Investments, Ltd. (collectively, "JAM"), both of which had contributed a substantial portion of the funds used to acquire the majority interest, $3.24 million, and which were therefore entitled to a significant portion of the Mirror Image stock pursuant to their joint-venture agreement. Defendants also allegedly did not disclose the risk of dilution[3] to Xcelera shareholders should Defendants decide to issue Xcelera stock in satisfaction of its obligation to JAM.

Plaintiffs contend that it was not until August 4, 2000 – when Xcelera issued its Annual Report for that year – that Xcelera shareholders first learned that Xcelera might be required to issue new shares of its stock to "certain third parties" in order to pay for its investment in Mirror Image, and that this may, in turn, result in a material dilution of Xcelera stock. That same

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district court's decision to certify the subclass.

[3] "Dilution" means "[t]he reduction in the monetary value or voting power of stock by increasing the total number of outstanding shares." Black's Law Dictionary (8th ed. 2004).

day, the price of Xcelera's stock fell by 2.5%, from $12.31 to $12 per share. Several days later, after a brief rise in stock price on August 7, the price of Xcelera stock fell again, this time by approximately 16%, from $14 on August 8, 2000, to $11.75 on August 9, 2000.

On April 2, 2001, Plaintiffs filed a consolidated amended complaint, alleging that Defendants artificially inflated the price of Xcelera stock during the Class Period by failing to disclose the ownership dispute surrounding the Mirror Image stock and the risk of dilution of Xcelera stock. The complaint further alleged that Alexander and Gustav Vik made insider sales of over 3.2 million shares of Xcelera stock to the unknowing public during the Class Period, reaping proceeds of over $250 million. Plaintiffs seek damages against Defendants under § 10(b) of the Securities and Exchange Act of 1934, 15 U.S.C. § 78j(b) (the "Exchange Act") and Rule 10b-5 promulgated thereunder, 17 C.F.R. § 240.10b-5, and against Alexander and Gustav Vik under § 20(a) and § 20A of the Exchange Act, 15 U.S.C. § 78t(a), § 78t-1.

On November 12, 2002, Plaintiffs filed a motion for certification of the class and the insider trading subclass pursuant to Fed. R. Civ. P. 23(a)[4] and (b)(3).[5] In order to satisfy Rule 23(b)(3)'s requirement that common questions of law and fact predominate over individual questions, Plaintiffs relied upon the "fraud-on-the-market" presumption of reliance. Defendants opposed the motion, arguing that Plaintiffs were not entitled to a presumption of reliance because the market was not "efficient" – a prerequisite for presuming reliance. In support of this position, Defendants submitted the affidavit of Dr. Matthew P. Richardson, a professor of finance at New York University and a Research Associate of the National Bureau of Economic Research. He concluded that the market for Xcelera stock was not efficient during the Class Period. Plaintiffs responded by submitting the affidavit of Dr. Scott A. Hakala, director of CBIZ Valuation Group, Inc., a national business and valuation firm, who came to the opposite conclusion.

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[4] Defendants do not dispute that the requirements of Rule 23(a) – numerosity, typicality, commonality, and adequacy – have been met; thus, we do not address them.

[5] Rule 23(b)(3) provides, in relevant part, that "[a]n action may be maintained as a class action if the court finds that the questions of law or fact common to the members of the class predominate over any questions affecting only individual members." As we noted in PolyMedica, "[t]his requirement, although reminiscent of the commonality requirement of Rule 23(a), is far more demanding because it tests whether proposed classes are sufficiently cohesive to warrant adjudication by representation." No. 05-1220, slip op. (internal quotation marks and citation omitted).

At Defendants' request, the district court conducted a two-day evidentiary hearing on November 20 and 21, 2003. Both parties presented oral argument, and each expert gave testimony concerning the meaning of market efficiency and whether the market for Xcelera stock was efficient. Defendants argued that the market for a particular stock is efficient if it rapidly and accurately reflects all material, publicly available information, and that Xcelera's market did not meet these standards. Plaintiffs, on the other hand, argued that while efficiency requires that market price reflect all material, publicly available information "relatively rapidly or within a reasonable period of time," the market price need not reflect such information accurately. According to Plaintiffs, the standard of market efficiency that they advocate is satisfied by application of the factors set forth in Cammer v. Bloom, 711 F. Supp. 1264 (D.N.J. 1989), which weigh in favor of a finding of efficiency in the Xcelera market.

On September 30, 2004, the district court issued its decision certifying both the class and the insider trading subclass.[6] The court credited Plaintiffs' expert analysis which largely tracked the Cammer factors, and rejected Defendants' expert analysis as focusing too much on whether market price "perfectly

[6] In its decision, the district court also granted Plaintiffs' motion to certify additional class representatives. Defendants do not object to the grant of this motion, and we therefore do not address it.

and correctly incorporate[d]" – as opposed to merely reflected – publicly available information.

On February 15, 2005, we granted Defendants' petition for permission to appeal the district court's order pursuant to Rule 23(f) of the Federal Rules of Civil Procedure.[7] Defendants argue that the district court erred in adopting a definition of "market efficiency" which did not require that market price rapidly and accurately reflect all publicly available information. Defendants further argue that the district court erred in applying only the Cammer factors to determine market efficiency.

II.

As we stated in PolyMedica,

> [t]he formulation of the proper standard for efficiency is a purely legal question reviewed de novo. Reviewing the application of that standard to the facts of a case involves the review of a mixed question of law and fact. Given the various factors relevant to an efficiency determination, and the abundant evidence that can be developed with respect to each factor, the determination of whether a market is efficient is a fact-dominated inquiry. Therefore, deferential clear-error review applies to that determination. The ultimate decision to certify a class is, of course, a discretionary one.

No. 05-1220, slip op. (internal citation omitted).

In a securities fraud action under § 10(b) of the Exchange Act, and Rule 10b-5 promulgated thereunder, plaintiffs are

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[7] Rule 23(f) provides, in relevant part, that "a court of appeals may in its discretion permit an appeal from an order of a district court granting or denying class action certification under this rule if application is made to it within ten days after entry of the order." Fed. R. Civ. P. 23(f).

typically required to prove that they individually relied on a defendant's misrepresentation. Id. Requiring proof of individualized reliance, of course, would effectively preclude securities fraud class actions under Rule 23(b)(3). Individual issues of reliance would necessarily overwhelm the common ones. The fraud-on-the-market theory eliminates the need to prove individualized reliance by allowing a rebuttable presumption that the plaintiff relied on the "integrity of the market price" which reflected the misrepresentation. "Before an investor can be presumed to have relied upon the integrity of the market price, however, the market must be 'efficient.'" Id. In an efficient market, the defendant's misrepresentations are absorbed into, and reflected by, the market price. Investors who rely on the market price, therefore, indirectly rely on those misrepresentations, thereby justifying a presumption of reliance under the fraud-on-the-market theory. Conversely, when a market lacks efficiency, there is no assurance that market price reflects the defendant's misrepresentations and that investors therefore indirectly relied on those misrepresentations.

A. Standard of "Market Efficiency"

1. "Market Efficiency" Under PolyMedica

In PolyMedica, we held that "an efficient market is one in which the market price of the stock fully reflects all publicly available information." Id. This definition focuses on whether a market is efficient in the informational sense, that is, whether market prices respond rapidly to new information, such that prices impound all publicly available information (and misinformation), thereby justifying a presumption of reliance under the fraud-on-the-market theory.

2. The District Court's Standard of Efficiency

According to the district court, an efficient market is one in which "market price reflect[s] publicly available information." In re: Xcelera.Com Sec. Litig., No. 00-11649-RWZ, at 6 (D. Mass. Sept. 30, 2004) (unpublished opinion). This definition of market efficiency does not provide explicitly that market price must "fully" reflect "all" available information, the standard set forth in PolyMedica. However, the district court's reliance upon Cammer to determine whether the Xcelera market was efficient means that it necessarily applied the standard of efficiency used in Cammer, which tracks the definition we adopted in PolyMedica. See Cammer, 711 F. Supp. at 1281 (stating that an efficient market is one in which "current price reflects all available information," and citing economic commentator Eugene Fama's definition of market efficiency as "[a] market in which prices always 'fully reflect' available information").

Still, Defendants argue that the district court's definition of an efficient market is incomplete. Missing from the court's definition, Defendants assert, is a requirement that in an efficient market, "stock prices <u>rapidly</u> and <u>accurately</u> reflect all publicly available information." (Emphasis added.) Because of these omissions, Defendants argue, the district court wrongfully concluded that Xcelera's market was efficient.

a. Rapidly

While we agree with Defendants that an efficient market must "rapidly" reflect all publicly available information, and so stated in <u>PolyMedica</u>, that characteristic is implicit in the requirement that a market "fully reflect" all publicly available information. <u>See</u> <u>PolyMedica</u>, No. 05-1220, slip op. (stating that "market price 'fully reflects' all publicly available information when prices respond so quickly to new information that it is impossible for traders to make trading profits on the basis of that information") (internal quotation marks and citation omitted). Therefore, where, as here, the district court correctly determined that market price must fully reflect all publicly available information for purposes of defining market efficiency, the district court understood that market price must "rapidly" reflect such information in an efficient market. Moreover, the district court's reliance upon <u>Cammer</u>, which emphasized the importance of an efficient market "rapidly reflect[ing] new information in price," 711 F. Supp. at 1276 n.17, again indicates that the district court understood that an efficient market rapidly absorbs and reflects new information.

b. Accurately

Defendants argue that an efficient market must also respond to information accurately. According to their expert witness, Richardson, an efficient market "accurately" reflects all publicly available information when "investors [are] rational and fac[e] no trading frictions such that stock prices equal their 'fundamental value.'" Accuracy, Richardson argues, thus hinges upon a stock price's consistency with its fundamental value, which, in turn, hinges upon the market behaving rationally.

Elaborating further, Richardson explains that "fundamental value is the discounted sum of expected future cash profits of the stock." In an efficient market, Richardson states, information should "tell you something about . . . the expected cash flow of the asset or the risk of that asset[,] and that information should get incorporated into that price." Richardson argues that "fundamental, or true, value" does not, however, mean "ultimate future value," such that "investors [must] be fortune tellers." Rather, it means a "fair price" that "incorporates all the information currently available to investors," such that price adjustments are "accurate on average: the prices should neither underreact nor overreact to particular news announcements."

But investors are not always rational, Richardson contends; the presence of irrational investors in the market causes prices "to diverg[e] from fundamentals." The decisions of these irrational investors, Richardson argues, "begin to move prices away from their fundamental value" – away from expected risks and returns – "meaning they're not reflecting the information in a rational way." Richardson acknowledges, however, that the presence of these irrational investors "is not enough per se to refute the hypothesis that the market is efficient." On the contrary, "prices will eventually adjust until the mispricings disappear," so long as there are a sufficient number of rational investors active in the market, and provided that these rational investors are not limited in their ability "to take advantage of, or 'arbitrage,' these mispricings" by "purchas[ing] the underpriced securities (i.e., relative to fundamental value) and sell[ing] the overpriced ones to the irrational investors." Thus, in order "for prices to not accurately reflect fundamental information," Richardson contends, "there must be a reason why asset prices diverged from fundamentals, e.g., the presence of irrational investors . . . and [] there must be some limits to arbitrage that prevent rational capital from forcing prices and fundamental value to converge."

Not surprisingly, Plaintiffs insist that "accuracy" should be excluded from the definition of efficiency. According to Hakala, their expert, a market is efficient when "all relevant and publicly available information is impounded in share price." By requiring that market price "accurately" reflect public information, Hakala argues that Defendants are advocating "a higher standard" of market efficiency imposed by academics, which demands that markets must behave rationally so that stock prices will "always conform to some idealized fundamental value that is demonstrated in retrospect." Hakala contends that market efficiency demands only that market price "reflects all public information" so that "an average investor wo[n't] ordinarily be able to beat the market . . . . It doesn't say anything about whether the market was right or wrong in retrospect. . . ." According to Hakala, "[Richardson's] analysis confuses market efficiency with a level of hyper-rationality or perfect foresight on the part of market participants that is unrealistic and not required for a presumption of fraud-on-the-market." This analysis, Hakala contends, "amounts to second-guessing the market, concluding that the market, in retrospect . . . [was] over-valued."

In response to arguments raised by the parties in PolyMedica, we have already resolved this debate in favor of Plaintiffs. As we explained in PolyMedica, the fraud-on-the-market presumption of reliance does not depend on the accuracy of the market price, and whether it "mirror[s] the best possible estimates, in light of all available information, of the actual economic values of securities in terms of their expected risks and returns." No. 05-1220, slip op. (internal quotation marks and citation omitted). Rather, this presumption depends on whether the market price of the stock reflects all available information, such that an investor can be deemed to have indirectly relied on the misrepresentation. Whether the stock was "worth" more or less in some fundamental value sense, while arguably relevant to the efficiency inquiry, is not essential to it.

As we stated in PolyMedica, "[w]hile fundamental value efficiency may be the more comprehensive of the two concepts, encompassing both speed and accuracy, [e]fficiency is not an all-or-nothing phenomenon." Id. (emphasis in original) (internal quotation marks and citation omitted). We explained that "for purposes of establishing the presumption of reliance, therefore, investors need only show that the market was informationally efficient," not fundamental value efficient. Id.; see also id. (stating that "the fraud-on-the-market theory does not require 'proof that the market correctly reflects some 'fundamental value' of the security. To apply the fraud-on-the-market theory, it is sufficient that the market for a security be 'efficient' only in the sense that market prices reflect the available information about the security'") (quoting In re Verifone Sec. Litig., 784 F. Supp. at 1479 n.7).

Defendants do not, and cannot, cite to any language in Basic requiring that the market price of a stock must accurately reflect its fundamental value for purposes of demonstrating market efficiency. In fact, as we noted in PolyMedica, the Supreme Court in Basic declined to explicitly address the meaning of market efficiency – much less a fundamental value theory of market efficiency – stating that, "[w]e do not intend conclusively to adopt any particular theory of how quickly and completely publicly available information is reflected in market price." Id. (quoting Basic, 485 U.S. at 249 n.28).[8]

Defendants contend that the district court, abetted by Plaintiffs' expert, misconstrued "accuracy" to mean that the Xcelera market must "correctly predict" what the fundamental value of the security (i.e., "the discounted sum of expected future cash profits of the stock") will be in the future. On the contrary, Defendants argue, "accuracy" means only that a stock's price will reflect its fundamental value "at any given moment." This is a disingenuous argument. Like any lawsuit, the securities fraud action involves the recreation of past events through proof. Proof of fundamental value "at any given moment" would necessarily be a retrospective analysis which, in the words of Hakala, "amounts to second-guessing the market, concluding that the market, in

[8] We are unpersuaded by the cases cited by Defendants which generally allude to stock price's consistency with "accuracy" and "value." None of these cases specifically hold that a market is inefficient where the stock's price fails to "accurately" reflect all publicly available information, see, e.g., Ross v. Bank South, N.A., 885 F.2d 723 (11th Cir. 1989); Hurley v. FDIC, 719 F. Supp. 27 (D. Mass. 1989), nor do any of these cases analyze whether a market was inefficient based on the failure of stock price to mirror fundamental value, i.e., "the discounted sum of expected future cash profits of the stock," see, e.g., Gariety v. Grant Thornton, LLP, 368 F.3d 356 (4th Cir. 2004); Freeman v. Laventhol & Horwath, 915 F.2d 193 (6th Cir. 1990).

retrospect . . . [was] over-valued." If this retrospective judgment was that the stock price at a given moment was over-valued, that judgment would be tantamount to the conclusion that the stock price was a poor predictor of what subsequent analysis would reveal about fundamental value at that given moment.

We find no error in the district court's determination that, pursuant to Defendants' definition of market efficiency, "a robust stock market would always present a defense at the class certification stage and on the merits that depends on highly subjective, retrospective analysis of what people trading in a stock should have been thinking." The court's reference to "retrospective analysis" is not incorrect. The present-day analysis of the fundamental value of Xcelera's assets by Defendants' expert during the Class Period is necessarily "retrospective." In addition, we find no error in the court's rejection of Defendants' expert's "suggest[ion] that market efficiency is a rare phenomenon." Defendants' expert conceded that "[t]he Internet sector as a whole, at least the 400 sample firms," was inefficient "in aggregate," and relied on an economic treatise whose author concluded that "financial markets in most scenarios are not expected to be efficient. Market efficiency only emerges as an extreme special case, unlikely to hold under plausible circumstances." (Citing Andrei Shleifer, Inefficient Markets: An Introduction to Behavioral Finance 24 (2000).) This emphasis on the rarity of efficient markets, grounded in the concept of fundamental value efficiency, would have the likely effect of making it unduly difficult to establish the fraud-on-the-market presumption of reliance.

The district court was right to worry about these implications of Defendants' efficiency arguments; it did not err by rejecting Defendants' proposed definition of market efficiency requiring consistency with fundamental value. By drawing on the standard of efficiency in Cammer and holding that "a share's market price [must] reflect publicly available information, not . . . perfectly and correctly incorporate it," the district court adopted the correct standard of efficiency. We must now decide whether the court correctly applied this standard in determining that the Xcelera market was efficient.

III.

A. Level of Inquiry

In evaluating whether the Xcelera market was efficient, the district court considered the "persuasive and widely followed" factors enumerated in Cammer. Xcelera, No. 00-11649-RWZ, at 5. These factors are: (1) the stock's average trading volume; (2) the number of securities analysts that followed and reported on the stock; (3) the presence of market makers and arbitrageurs; (4) the company's eligibility to file a Form S-3 Registration Statement[9]; and (5) a cause-and-effect relationship, over time, between unexpected corporate events or financial releases and an immediate response in stock price. Cammer, 711 F. Supp. at 1286-87. These factors provide useful evidence from which market efficiency may be inferred, and are therefore relevant to a district court's determination of whether a market is efficient. As we noted in PolyMedica, however, these factors are not exhaustive. No. 05-1220, slip op. (citing Unger, 401 F.3d at 323, 325 (noting that Cammer factors are not exhaustive, and are "an analytical tool," not "a checklist")).

Crediting Plaintiffs' expert analysis, the district court concluded, without further discussion of the factors, "that the stock's trading volume was high; Xcelera received the attention of the press and analysts as well as the participation of sophisticated investors; there were no undue limits to arbitrage, and that the stock price did respond to information." Xcelera, No. 00-11649-RWZ, at 5. Plaintiffs argue that the district court correctly determined that these factors were satisfied and that the Xcelera market was therefore efficient. Defendants contend that

[9] Companies permitted by the SEC to file an S-3 Registration Statement, an abbreviated prospectus requiring fewer disclosures than Forms S-1 or S-2, are those which meet the $75 million market capitalization requirement and have filed reports with the SEC for twelve consecutive months. 17 C.F.R. § 239.13 (2003).

the district court's concise analysis of market efficiency is inconsistent with the searching inquiry demanded by Rule 23.

We disagree. As Plaintiffs point out, the district court received and reviewed hundreds of pages of briefing and exhibits focused on the issue of market efficiency, received multiple affidavits from experts on both sides and heard two days of testimony from those experts and arguments from counsel regarding market efficiency. In holding that Xcelera's market was efficient, the court specifically credited the testimony of Plaintiffs' expert over that of Defendants' expert, noting Xcelera's satisfaction of the Cammer factors and rejecting Defendants' evidence that market price did not "perfectly and correctly" incorporate publicly available information. This is not a case where the district court "simply presumed the facts in favor of an efficient market" based on "bare allegations" raised in the plaintiff's complaint. Unger, 401 F.3d at 323, 325.

Here, the district court properly "engaged in a case-specific analysis that went well beyond the pleadings," weighing the competing evidence concerning market efficiency and offering a succinct explanation of its determination that the fraud-on-the-market presumption should apply to this class action. PolyMedica, 05-1220, slip op. (quoting Waste Mgmt. Holdings, Inc. v. Mowbray, 208 F.3d 288, 297 (1st Cir. 2000)). The district court was not required to explain itself in greater detail. The more important issue is whether the evidence supports its determination to apply the presumption.

B. The Cammer Factors

1. Cause-and-Effect Relationship

Starting with the fifth, and in many ways, the most important, Cammer factor, Plaintiffs contend that the district court correctly found a historical cause-and-effect relationship between company disclosures and an immediate response in stock price. This relationship is, of course, "the essence of an efficient market and the foundation for the fraud on the market theory." Cammer, 711 F. Supp. at 1287. In the absence of such a relationship, there is little assurance that information is being absorbed into the market and reflected in its price. To demonstrate the existence of a cause-and-effect relationship between corporate information and stock price, Plaintiffs' expert presented the results of a sophisticated event study analyzing how Xcelera stock price reacted to company-specific events.[10] Plaintiffs' study lists more than forty separate instances, thirty-

[10] In addition to company-specific events, the study also analyzed how Xcelera's stock price reacted to information in the industry and in the general stock market (the NASDAQ, which is "the largest electronic, screen-based market in the world"). PolyMedica, No. 05-1220, slip op. (internal quotation marks and citation omitted). Plaintiffs' expert found that the movements of Xcelera's stock price correlated with the movements of a sampling of other Internet companies and with the NASDAQ as well, thereby further indicating that "Xcelera's common stock price is efficiently reacting to public information."

six of which occurred during the Class Period, in which Xcelera stock price rose or fell (in several cases, by more than 50%, and in one case, rose by more than 100%) within one day[11] of the release of company-specific information.

For instance, on April 1, 1999, Xcelera's stock price increased 194% following an announcement that Xcelera had purchased a majority interest in Mirror Image that day; on December 21, 1999, following the announcement of Hewlett-Packard's $32 million investment in Xcelera that day, Xcelera's stock increased 20%; a glowing report in the Gilder Technology Report on February 12, 2000 caused Xcelera stock price to increase 42% on that day; and on July

[11] In addition to a one-day window, Plaintiffs' event study lists, as a control, the effect of company-specific information over longer windows of two, three, and five days, respectively. For example, following the announcement on March 22, 2000 that Exodus would invest $637.5 million in Mirror Image, Xcelera's stock price increased by 24% on that day. According to the event study, this information accounted for a 23% increase in price two days after the announcement, a 25% increase after three days, and a 23% increase after five days. Defendants argue that the two- and five-day (and presumably, the three-day) windows are inconsistent with the requirement that an efficient market must rapidly reflect all publicly available information. However, because Plaintiffs' event study captures the same-day reaction of Xcelera's stock price to company-specific events, Defendants' arguments concerning the multi-day windows are unavailing. See Jonathan R. Macey et al., Lessons from Financial Economics: Materiality, Reliance, and Extending the Reach of Basic v. Levinson, 77 Va. L. Rev. 1017, 1031 (1991) (stating that "financial economists often define the event period as the two-day period consisting of the announcement day and the following day"); see also Lehocky v. Tidel Techs., Inc., 220 F.R.D. 491, 506-07 (S.D. Tex. 2004) (concluding that plaintiff's expert's event study using two-day window was "sufficient to demonstrate, for class certification purposes, that a cause and effect relationship between company-specific announcements and stock price may exist").

13, 2000, the day Lazard Freres released a negative analyst report on Xcelera, the stock price dropped 19%. Conversely, Plaintiffs' expert also found that re-releases of old information, such as secondary announcements about acquisitions or new investments, resulted in only a modest stock price reaction or no reaction at all. Based on these findings, Plaintiffs' expert concluded that the Xcelera market reacted strongly – both positively and negatively – to new information concerning the company (including, but not limited to, disclosures at issue in this case).

Defendants argue that Plaintiffs' reliance upon various news events to demonstrate this cause-and-effect relationship was an exercise in post-hoc logic. In support of this argument, Defendants cite to the Fifth Circuit's decision in Unger, in which the court concluded that such post-hoc reasoning, without supporting expert statistical analysis, failed to take into account the many other factors that could affect stock price. 401 F.3d at 324. In that case, however, the plaintiffs offered only "sketchy" evidence of a cause-and-effect relationship, including "one-sided affidavits, and unexplained Internet printouts," and provided no expert statistical evidence whatsoever. Id. at 320, 325.

Plaintiffs argue that in this case, by contrast, Plaintiffs' expert submitted an event study which "sought to identify all or nearly all of the news and information" pertaining to Xcelera – whether "statistically significant" or not – "in the form of published articles, press releases, reports, news bulletins and financial filings of Xcelera," for the proposed Class Period. As noted above, in addition to this company-specific information, Plaintiffs' event study included a determination of how Xcelera stock price reacted to general-market and industry-specific information, the kind of information the court found lacking in Unger. Id. at 325 (stating that statistical evidence touching on "the daily market average; national, local and industry-specific economic news; [and] competitors' activities" may be helpful to determination of efficiency). Plaintiffs' expert also supported his event study with two affidavits, and provided testimony at a two-day hearing devoted, in part, to the findings of the event study.

2. The Stock's Average Trading Volume

Plaintiffs presented evidence that the average weekly trading volume for Xcelera stock, that is, the number of outstanding shares being traded on a weekly basis, was high. A high average weekly trading volume suggests market efficiency since it implies "significant investor interest in the company" and "a likelihood that many investors are executing trades on the basis of newly available or disseminated corporate information." Cammer, 711 F. Supp. at 1286. Plaintiffs demonstrated that the average daily trading volume for Xcelera stock exceeded 1,000,000 shares per day throughout the Class Period. Put another way, the average daily trading volume represented more than 4% of approximately 27.5 million total outstanding shares – well above the 1% or 2% figures suggested by several courts as the benchmark for supporting a presumption of efficiency. See, e.g., O'Neil v. Apel, 165 F.R.D. 479, 508 (W.D. Mich. 1996); Cammer, 711 F. Supp. at 1293.

Defendants argue that Plaintiffs overstate the trading volume of Xcelera shares by using split-adjusted shares[12] as opposed to the smaller number of actual (unadjusted) shares. For instance, Defendants object to Plaintiffs' calculation of the daily trading volume for August 10, 1999 using the 9,600 split-adjusted shares traded that day, instead of the only 400 unadjusted shares traded that day. Yet Defendants do not cite any authority for the proposition that Plaintiffs may not adjust for stock splits in order to derive a uniform trading volume for the Class Period.

3. Number of Securities Analysts

Both parties agree that the greater the number of securities analysts following and reporting on a company's stock,

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[12] Xcelera's stock underwent several stock splits throughout the Class Period. A stock split refers to "[t]he issuance of two or more new shares in exchange for each old share without changing the proportional ownership interests of each shareholder," thereby "lower[ing] the price per share and thus mak[ing] the stock more attractive to potential investors." Black's Law Dictionary (8th ed. 2004). For example, Xcelera's 2-for-1 stock split on September 30, 1999 would have given an owner of 100 shares of Xcelera stock a total of 200 shares, or two shares for each share previously owned. In order to establish a uniform trading volume for the Class Period, which contained multiple stock splits, Plaintiffs adjusted their calculation of trading volume by taking into account all splits that had occurred over the Class Period.

the greater the likelihood that information released by a company is being relied upon by investors. As the court in Cammer noted, the existence of a significant number of analysts implies that company reports are "closely reviewed by investment professionals, who would in turn make buy/sell recommendations to client investors." 711 F. Supp. at 1286. The parties also agree that only one analyst followed Xcelera's stock and issued only one report during the Class Period – far fewer than the fifteen research reports on the company at issue in Cammer, whose market was found to be efficient, id. at 183.

Defendants argue that one analyst is not enough, see O'Neil, 165 F.R.D. at 501 (stating that "[m]ajor corporations are closely followed by hundreds of securities analysts throughout the country"), and that the news coverage relied upon by Plaintiffs was more "journalistic commentary" than the kind of "analysis that would help investors understand the published information about the company and invest on that basis." In addition, Defendants argue that the Xcelera market lacked the presence of sophisticated institutional investors who "search out, distill, trade on, and disseminate information affecting an issuer" and who are thus vital to an efficient market. See Lehocky, 220 F.R.D. at 508 (crediting plaintiff's expert's assertion that "there is a general understanding that a high level of institutional interest in a security serves to increase the efficiency of the market").

Notwithstanding the presence of only one securities analyst, Plaintiffs contend that information about Xcelera was widely distributed through "news articles, press releases, television interviews and the Company's SEC filings," and indirect coverage from numerous influential brokerage firms reporting on other Internet and technology stocks. This media attention, Plaintiffs argue, more than made up for the lack of securities analysts. See Cheney v. Cyberguard Corp., 213 F.R.D. 484, 499 (S.D. Fla. 2003) (stating that significant number of news items featuring defendant company "indicat[ed] that information regarding [the company] may have been widely distributed, which would support a finding of efficiency"). In addition, in response to Defendants' charge that the Xcelera market lacked institutional investors, Plaintiffs point to the fact that two major institutions – Hewlett Packard and Exodus Communications – made significant investments in Xcelera, and that for the last six months of the Class Period, at least thirty other institutional investors also invested in Xcelera.

4. Number of Market-Makers and Arbitrageurs

A market-maker is "[o]ne who helps establish a market for securities by reporting bid-and-asked quotations" (the price a buyer will pay for a security and the price a seller will sell a security), Black's Law Dictionary (8th ed. 2004), and who "stand[s] ready to buy or sell at these publicly quoted prices," Lehocky, 220

F.R.D. at 508 n.24. According to Plaintiffs' expert, a market-maker, more particularly, "is a brokerage firm or special securities firm that actively buys and sells stocks on its own account with the intention of holding them for a relatively short period of time so as to make a market."

While the court in Cammer found that market-makers (and arbitrageurs[13]) contribute to market efficiency by "react[ing] swiftly to company news and reported financial results by buying or selling stock and driving it to a changed price level," 711 F. Supp. at 1287, Defendants argue that the mere existence of market-makers, without more, is not meaningful. See O'Neil, 165 F.R.D. at 502 (stating that "it is impossible to accord much significance to the number of market makers, until one knows the volume of shares that they committed to trade, the volume of shares they actually traded, and the prices at which they did so"); see also id. (noting that "the economic literature has criticized reliance upon the number of marker makers as an indicator of efficiency," and citing study which found "no empirical correlation between the number of market makers and the efficiency of the market"). Defendants

[13] Neither Cammer nor other courts addressing this factor distinguish between market-makers and arbitrageurs, but instead refer to the two somewhat interchangeably. As we noted in PolyMedica, "arbitrageurs" are professional investors who exploit price differences in different markets by buying and selling identical securities in those markets. Id. While arbitrageurs are distinct from market-makers, who seek to facilitate trading in a particular security, both play an important role in keeping markets efficient.

contend that Plaintiffs' evidence establishes only the presence of market-makers in the Xcelera market, not whether they in fact contributed to market efficiency by "buying or selling Xcelera's stock and driving it to a price reflective of all information bearing on value."[14]

Plaintiffs contend that more than twenty market-makers participated in the market for Xcelera stock, with seven market-makers trading over one million shares each in the final quarter of the Class Period. They say that this evidence demonstrates not only that there was a sufficient number of market-makers present to facilitate trading, see, e.g., Cheney, 213 F.R.D. 484, 500 (S.D. Fla. 2003) (holding that presence of between fifteen and nineteen market-makers weighed in favor of finding of market efficiency) (citing Cammer, 711 F. Supp. at 1283 n.30 (finding that presence of eleven market-makers weighed in favor of efficiency)), but also

[14] In addition, Defendants argue that Plaintiffs offered no evidence whatsoever for the presence of arbitrageurs in the Xcelera market. Defendants contend that the absence of arbitrageurs demonstrates that there were limits on the ability of rational investors to engage in short sales, thereby "push[ing] prices to incorporate all publicly available information." Plaintiffs argue that Defendants' evidence of constraints on short sales relates to rationality, not efficiency, and thus has no place in the Cammer analysis. (We address below Defendants' evidence of irrationality in the Xcelera market). In any event, Plaintiffs contend, "during the Class Period investors were able to and did sell Xcelera's shares short, and the number of people shorting Xcelera stock grew" during most of the Class Period.

that these market-makers were in fact conducting trades in significant volume.[15]

C. The District Court's Fraud-on-the-Market Determination

Although Defendants insist that the evidence we have summarized here did not support the district court's finding of an efficient market on the basis of the Cammer factors, we disagree. As we have already noted, "the determination of whether a market is efficient is a fact-dominated inquiry. Therefore, deferential clear-error review applies to that determination." The district court was entitled to resolve the evidentiary conflicts in favor of Plaintiffs. There was no clear error in the district court's evaluation of the evidence under Cammer.

Anticipating the obstacles posed by clear-error review, Defendants attempt to inject into the clear-error analysis an argument that is more akin to a claim of legal error. Defendants argue that even if the Cammer factors were met, the district court should have concluded that Xcelera's market was inefficient based on other factors rejected by the court. According to Defendants, the district court erroneously applied the Cammer factors in

[15] While listing "eligibility to file an S-3 Registration Statement" as one of the five factors "that could give rise to an inference of an efficient market," the district court chose not to address this Cammer factor. Although both parties invoke this factor in support of their respective positions, the district court did not err in foregoing analysis of this factor in favor of Cammer's other factors, and, therefore, we need not reach the parties' arguments regarding this factor.

isolation, rather than viewing them as part of a broader analysis of the structure of the Xcelera market. "[T]he ultimate question of market efficiency," Defendants argue, "is structural, and [the Cammer factors] are only partial indicators of market structure." In order to determine whether the Xcelera market was efficient, Defendants argue that the district court should have analyzed whether Xcelera's market behaved "rationally".

Defendants contend that Xcelera's market was dominated by irrational investors "not basing their decisions on analysis . . . of the fundamental value of the stock in light of all currently available information." Defendants further contend that constraints on short sales in the Xcelera market prevented arbitrageurs from acting on analyses that "push[] prices into line with all information bearing on the security's fundamental value."[16] Lastly, Defendants argue that Xcelera's stock price behaved irrationally – reaching levels "that were orders of magnitude too

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[16] Defendants offer several pieces of evidence in support of the existence of limits on capacity for arbitrage, including: high costs of borrowing Xcelera stock to sell short (i.e., low "rebate rates"); violations of put-call parity in the options market, which, according to Defendants, "necessarily imply a limit to arbitrage and, in particular, a short sales constraint"; a "high turnover" of individual investors, indicating that investors were buying and selling Xcelera stock within a relatively brief time, and thereby not loaning their shares to short-sellers; a high level of existing short interest, which, Defendants argue, implies constraints on other would-be short-sellers; a high bid-ask spread, suggesting that stock is too expensive to trade; and high risks faced by short-sellers in light of the rapid rise in Xcelera's stock price during the Class Period.

high, based on any possible range of future earnings growth, to be consistent with an efficient market"; reacting to "minor" developments in ways greatly disproportionate to the economic significance of such developments; and "fluctuat[ing] wildly" throughout the Class Period.[17]

As we stated in PolyMedica,

> [t]he question of how much evidence of efficiency is necessary in order for a court to accept the fraud-on-the-market presumption of reliance at the class-certification stage is . . . one of degree. District courts must draw these lines sensibly, mindful of the fact that while evidence of fundamental value may be relevant to the determination of informational efficiency, other more accessible and manageable evidence may be sufficient at the certification stage to establish the basic facts that permit a court to apply the fraud-on-the-market presumption.

No. 05-1220, slip op. Here, focusing on the Cammer factors, the district court concluded that Plaintiffs demonstrated the basic facts necessary to justify a presumption of reliance at the class-certification stage. The court's determination that "Defendant's [sic] expert focuses too much on the rationality of the market, as opposed to its efficiency," was an appropriate exercise of its discretion. Xcelera, No. 00-11649-RWZ, at 5. As discussed above,

[17] In order to demonstrate that Xcelera's stock price behaved irrationally, Defendants offered the following: a comparison of the price movements of Xcelera stock and those of the Dow Jones and other Internet stocks from the same period; an analysis of whether Xcelera's stock "could reasonably be said to reflect the fundamental value of [its] assets"; evidence of "extraordinarily high" volatility in Xcelera's stock price; and an analysis of company-specific events to which Xcelera's stock price failed to respond rationally.

for purposes of establishing the fraud-on-the-market presumption of reliance, market efficiency does not require that a market be "rational, i.e., consistent with fundamental value." While evidence of irrationality in the Xcelera market – i.e., the presence of irrational investors and limits to arbitrage which prevented market price from reflecting fundamental value – may have been "relevant to the extent it raises questions about informational efficiency," the district court did not err in finding "other more accessible and manageable evidence" sufficient to establish the presumption of reliance.

The district court's consideration of four of the Cammer factors, and its rejection of the rationality factors advanced by Defendants, was thus proper for purposes of determining market efficiency. Because there is no "magic number" of factors for determining efficiency, we leave it to the district court in the first instance to decide which factors and how many factors it will consider, emphasizing that the ultimate efficiency determination is subject to clear error review. Obviously, if the district court considers too few factors or too little evidence, the determination will not survive clear error review. That did not happen here.

IV.

For the foregoing reasons, the district court's order certifying the class and the insider trading subclass is **affirmed**. Costs are taxed against Defendants.

So ordered.