United States Court of Appeals
For the First Circuit

No. 05-1220

In re POLYMEDICA CORP. SECURITIES LITIGATION

RICHARD BOWE, SEP-IRA, on behalf of himself and all others similarly situated; JOHN T. MUHA; THOMAS THUMA; LAWRENCE STOREY; JIANWEI XU; HOWARD HOFFMAN,

Plaintiffs-Appellees,

v.

POLYMEDICA CORP.; LIBERTY MEDICAL SUPPLY, INC.; ERIC G. WALTERS; WARREN K. TROWBRIDGE; STEVEN J. LEE,

Defendants-Appellants.

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

[Hon. Robert E. Keeton, Senior U.S. District Judge]

Before

Torruella, Cyr, and Lipez, Circuit Judges.

Jeffrey B. Rudman, with whom James W. Prendergast, Michael G. Bongiorno, J. Andrew Kent, and Wilmer Cutler Pickering Hale and Dorr LLP were on brief, for appellants PolyMedica Corp. and Liberty Medical Supply, Inc.

Michael DeMarco, with whom Daniel E. Rosenfeld and Kirkpatrick & Lockhart LLP were on brief, for appellant Eric G. Walters.

Allan J. Sullivan, with whom Baker & McKenzie LLP was on brief, for appellant Warren K. Trowbridge.

Anthony M. Feeherry, with whom Gus P. Coldebella, Stuart M. Glass, and Goodwin Procter LLP were on brief, for appellant Steven J. Lee.

Thomas G. Shapiro, with whom Theodore M. Hess-Mahan, Shapiro Haber & Urmy LLP, Andrew M. Schatz, Jeffrey S. Nobel, Justin S. Kudler, and Schatz & Nobel, P.C. were on brief, for appellee Thomas Thuma.

December 13, 2005

LIPEZ, **Circuit Judge**. In this appeal pursuant to Rule 23(f) of the Federal Rules of Civil Procedure from an order certifying a class in a securities fraud case, we must decide an issue of first impression in this Circuit: the standard for determining whether a market was "efficient" when applying the fraud-on-the-market presumption of investor reliance. We also address the level of inquiry that a district court may pursue at the class-certification stage when making that efficiency determination. Defendants-Appellants PolyMedica Corporation, Liberty Medical Supply, Inc. ("Liberty"), and various officers of both companies (collectively, "PolyMedica"[1]) argue that the district court erred in finding that common questions predominated under Rule 23(b)(3) of the Federal Rules of Civil Procedure, by determining that the market was efficient for eight months of the class period, from January 2001 through August 2001 (the "Contested Time Period"), and deeming PolyMedica's expert evidence irrelevant to that determination. For the reasons set forth below, we vacate the district court's order certifying the class for the Contested Time Period, and remand for further proceedings.

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[1] For the sake of simplicity, we refer to both Defendants-Appellants who bring this appeal, together with the company whose stock is at issue in this case, PolyMedica Corporation, as "PolyMedica."

I.

Thomas Thuma ("Plaintiff") is a purchaser of PolyMedica stock, who seeks to represent a class of all purchasers of PolyMedica stock from October 1998 through August 2001.[2] PolyMedica is the parent company of Liberty, a seller of diabetic testing supplies. According to Plaintiff, PolyMedica reported record revenues and earnings during the class period based primarily on the growth of Liberty's diabetic supplies business, which accounted for up to 80% of PolyMedica's revenues. As a result of these increases in revenue and earnings, the price of PolyMedica's stock, which traded on the NASDAQ[3] and the American Stock Exchange during the class period, increased substantially.

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[2] This is a consolidated action. On November 27, 2000, Richard Bowe, SEP-IRA, filed a federal securities class action against PolyMedica Corporation and its Chief Executive Officer, Steven J. Lee. A like action was subsequently filed by Trust Advisors Equity Plus LLC on December 19, 2000. The district court consolidated the two cases on July 30, 2001, and allowed a motion appointing Bowe, John T. Muha, and Thomas Thuma as lead plaintiffs and approving their selection of lead counsel. On October 9, 2001, the three lead plaintiffs, together with three other plaintiffs, Lawrence Storey, Jianwei Xu, and Howard Hoffman, filed a consolidated complaint. The district court subsequently allowed Bowe and Muha to withdraw, leaving Thomas Thuma as lead plaintiff. For the sake of simplicity, we treat all the plaintiffs' filings as being made by Thuma.

[3] "NASDAQ" stands for the National Association of Securities Dealers Automated Quotation, "the largest electronic, screen-based market in the world. . . . [whose] services enable securities firms to execute transactions in The Nasdaq Stock Market from their own locations, relying on real-time trade reporting and automated market surveillance." Nasdaq Stock Market, Inc. v. Archipelago Holdings, LLC, 336 F. Supp. 2d 294, 297 (S.D.N.Y. 2004).

In the consolidated complaint, filed on October 9, 2001, Plaintiff alleges that PolyMedica artificially inflated the market price of its stock by misrepresenting sales, revenues, and accounts receivable, and by issuing false press releases, causing Plaintiff and other members of the class to purchase stock at artificially inflated prices. Plaintiff further alleges that when the truth of this fraud became known, PolyMedica's stock lost more than 80% of its value. Plaintiff seeks damages under Section 10(b) of the Securities 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 Section 20(a) of the Exchange Act, 15 U.S.C. § 78t(a).

On January 28, 2004, following several years of litigation, Plaintiff moved for class certification pursuant to Fed. R. Civ. P. 23(a)[4] and (b)(3)[5], asserting that common questions of law and fact predominated, based on the "fraud-on-the-market" theory. As we explain in greater detail below, under the Supreme

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

[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." This 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.'" Unger v. Amedisys Inc., 401 F.3d 316, 320 (5th Cir. 2005) (quoting Amchem Prods., Inc. v. Windsor, 521 U.S. 591, 623-24 (1997)).

Court's plurality decision in Basic, Inc. v. Levinson, 485 U.S. 224 (1988),[6] this theory obviates the need for a plaintiff to demonstrate individualized reliance on a defendant's misstatement by permitting a class-wide rebuttable presumption of reliance, thereby enabling a securities fraud class action to meet Rule 23(b)(3)'s commonality requirement. PolyMedica opposed the motion, arguing that the fraud-on-the-market presumption of reliance was inapplicable for the Contested Time Period[7] because the market for PolyMedica stock was not "efficient" (a prerequisite for application of the presumption). Both sides submitted expert testimony in support of their respective positions.

Plaintiff's expert, Alan R. Miller, relying upon each of the five widely-accepted market-efficiency factors set forth in Cammer v. Bloom, 711 F. Supp. 1264 (D.N.J. 1989), concluded that the market for PolyMedica stock was efficient. PolyMedica's expert, Dr. Denise Neumann Martin, in turn, concluded that the Polymedica market was not efficient, based on three factors not enumerated in Cammer. A hearing on Plaintiff's motion for class

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[6] Justice Blackmun delivered the opinion of the Court in Basic, joined by Justices Brennan, Marshall, and Stevens. Justice White, joined by Justice O'Connor, dissented from the portion of the Court's holding applying the fraud-on-the-market presumption of reliance. Justices Rehnquist, Scalia, and Kennedy took no part in the consideration or decision of the case.

[7] PolyMedica does not dispute that the fraud-on-the-market presumption of reliance applies to the first two years of the class period, October 1998 through December 2000.

certification was held on July 16, 2004. On September 7, 2004, the district court granted Plaintiff's motion to certify the class for the entire proposed class period, rejecting Dr. Martin's evidence as not relevant to the definition of "market efficiency," which the court derived from Basic. The court also excluded from the class those investors who participated in short-sale transactions (i.e., transactions involving the sale of a borrowed security, as further discussed below), leaving it to "able counsel [to] develop an efficient solution" for identifying short-sellers.

PolyMedica filed an interlocutory appeal from the district court's order certifying the class pursuant to Rule 23(f), which we permitted on February 15, 2005.[8] On appeal, PolyMedica argues that the district court erred in determining that the market for PolyMedica stock was "efficient" during the Contested Time Period, and in concluding that the fraud-on-the-market presumption of reliance was therefore applicable for these months. PolyMedica further argues that the district court erred in certifying the class without a plan for identifying and excluding short-sellers from the class.

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[8] 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).

II.

A. Standard of Review

We generally review decisions granting or denying class certification under the highly deferential "abuse of discretion" standard. Smilow v. Southwestern Bell Mobile Sys., Inc., 323 F.3d 32, 37 (1st Cir. 2003). Since Rule 23 contains express legal standards for class certification, "an appeal of a class certification can pose pure issues of law which are reviewed de novo," that is, without deference to the district court. Tardiff v. Knox County, 365 F.3d 1, 4 (1st Cir. 2004). "An error of law is, of course, always an abuse of discretion." Charlesbank Equity Fund II v. Blinds To Go, Inc., 370 F.3d 151, 158 (1st Cir. 2004). Mixed questions of law and fact fall along a degree-of-deference continuum, ranging from non-deferential plenary review for law-dominated questions, to deferential clear-error review for fact-dominated questions. Johnson v. Watts Regulator Co., 63 F.3d 1129, 1132 (1st Cir. 1995).

The 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. See Cammer, 711 F. Supp. at 1277 (stating that "[t]he question of whether the fraud-on-the-market theory can substitute for direct reliance in any given case is both a legal and a factual one: is the market in which a particular company's stock trades efficient").[9] 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.

B. Level of Inquiry by the District Court

In determining whether to certify the class, the district court went well beyond the four corners of the pleadings, considering both parties' expert reports and literally hundreds of pages of exhibits focused on market efficiency. Before we can decide whether the district court correctly certified Plaintiff's class based on a finding of market efficiency, we must determine whether this detailed level of inquiry was appropriate at the class-certification stage. Plaintiff, relying on the Second Circuit's decision in <u>In re Visa Check/MasterMoney Antitrust</u>

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[9] We recognize that several courts, including the district court in this case, have characterized the determination of whether a particular market is efficient as a question of fact. <u>See</u>, <u>e.g.</u>, <u>In re PolyMedica Corp. Sec. Litig.</u>, 224 F.R.D. 27, 42 (D. Mass. 2004) (citing <u>In re Laser Arms Corp. Sec. Litig.</u>, 794 F. Supp. 475, 490 (S.D.N.Y. 1989) (stating that "[w]hether in fact [defendant company] traded in an efficient market is a question of fact")). Because this determination involves the application of the definition of efficiency to a particular market, however, we think it is more accurate to characterize this determination as a mixed question of law and fact.

Litigation, 280 F.3d 124 (2d Cir. 2001), argues that a district court should not engage in a weighing of competing evidence at the class-certification stage, and should instead confine its review to the allegations raised in the plaintiff's complaint. At that stage, according to the Second Circuit, "a district court may not weigh conflicting expert evidence or engage in 'statistical dueling' of experts." Id. at 135 (quoting Caridad v. Metro-North Commuter R.R., 191 F.3d 283, 292-93 (2d Cir. 1999)). In support of its position, the Second Circuit looked to Eisen v. Carlisle & Jacquelin, 417 U.S. 156 (1974), in which the Supreme Court held that Rule 23 did not authorize courts "to conduct a preliminary inquiry into the merits of a suit in order to determine whether it may be maintained as a class action." Id. at 177; see also J.B. ex rel. Hart v. Valdez, 186 F.3d 1280, 1290 n.7 (10th Cir. 1999) (recognizing that "when deciding a motion for class certification, the district court should accept the allegations contained in the complaint as true").

PolyMedica, on the other hand, argues that we should follow the majority of courts of appeals that have addressed this issue. According to these courts, a district court is not limited to the allegations raised in the complaint, and should instead make whatever legal and factual inquiries are necessary to an informed determination of the certification issues. See Unger, 401 F.3d at 321 (stating that while "[c]lass certification hearings should not be mini-trials on the merits of the class or individual claims. . . . '[g]oing beyond the pleadings is necessary, as a court must understand the claims, defenses, relevant facts, and applicable substantive law in order to make a meaningful determination of the certification issues'") (quoting Castano v. Am. Tobacco Co., 84 F.3d 734, 744 (5th Cir. 1996)); accord Cooper v. Southern Co., 390 F.3d 695, 712 (11th Cir. 2004); Gariety v. Grant Thornton, LLP, 368 F.3d 356, 365 (4th Cir. 2004); West v. Prudential Sec., Inc., 282 F.3d 935, 938 (7th Cir. 2002) ("Tough questions [at class-certification stage] must be faced and squarely decided, if necessary by holding evidentiary hearings and choosing between competing perspectives."); Johnston v. HBO Film Mgmt., Inc., 265 F.3d 178, 189 (3rd Cir. 2001); see also Wagner v. Taylor, 836 F.2d 578, 587 (D.C. Cir. 1987) (noting that "a decision on class certification cannot be made in a vacuum," and that "some inspection of the circumstances of the case is essential to determine whether the prerequisites of Federal Civil Rule 23 have been met").

In support of this more demanding inquiry at the class-certification stage, many of these courts rely on General Telephone Co. of Southwest v. Falcon, 457 U.S. 147 (1982), in which the Supreme Court noted that since "the class determination generally involves considerations that are enmeshed in the factual and legal issues comprising the plaintiff's cause of action. . . . sometimes it may be necessary for the court to probe behind the pleadings before coming to rest on the certification question." Id. at 160 (internal quotation marks and citations omitted); see also Amchem, 521 U.S. at 616 (noting that Rule 23(b)(3) involves a "close look" at predominance and superiority criteria).

We have already expressed our preference for the majority view. In Waste Management Holdings, Inc. v. Mowbray, 208 F.3d 288 (1st Cir. 2000), we upheld a district court's decision to certify a class, where the court "engaged in a case-specific analysis that went well beyond the pleadings." Id. at 297. In that case, we also squared the Supreme Court's holdings in Eisen and Falcon, noting that while Eisen prohibits a district court from inquiring into whether a plaintiff will prevail on the merits at class certification, it "does not foreclose consideration of the probable course of litigation," as contemplated by Falcon. Id. at 298. "After all," we explained, "a district court must formulate some prediction as to how specific issues will play out in order to determine whether common or individual issues predominate in a given case." Id.

Three years later, in Smilow v. Southwestern Bell Mobile Systems, 323 F.3d 32 (1st Cir. 2003), we noted that "[a] district court must conduct a rigorous analysis of the prerequisites established by Rule 23 before certifying a class." Id. at 38 (citing Falcon, 457 U.S. at 161). And last year, in Tardiff, we noted the split between circuits, reasoning that while "[i]t is sometimes taken for granted that the complaint's allegations are necessarily controlling . . . in our view a court has the power to test disputed premises early on if and when the class action would be proper on one premise but not another." 365 F.3d at 4-5. Therefore, in light of our prior precedent, we conclude that the district court was entitled to look beyond the pleadings in its evaluation of the applicability of the fraud-on-the-market presumption of reliance, and its resolution of the class-certification question.

III.

A. The Fraud-on-the-Market Theory

The Supreme Court has described the "basic elements" of a securities fraud action under § 10(b) of the Exchange Act and Rule 10b-5 promulgated thereunder as including: (1) "a material misrepresentation (or omission)"; (2) "scienter, i.e., a wrongful state of mind"; (3) "a connection with the purchase or sale of a security"; (4) "reliance"; (5) "economic loss"; and (6) "loss causation." In re Stone & Webster, Inc., Sec. Litig., 414 F.3d 187, 193 (1st Cir. 2005) (quoting Dura Pharm., Inc. v. Broudo, 125 S. Ct. 1627, 1631 (2005)); see also Wortley v. Camplin, 333 F.3d 284, 294 (1st Cir. 2003). While reliance is typically demonstrated on an individual basis, the Supreme Court has noted that such a rule would effectively foreclose securities fraud class actions because individual questions of reliance would inevitably overwhelm the common ones under Rule 23(b)(3). Basic, 485 U.S. at 242.

To avoid this result, the Supreme Court has recognized the fraud-on-the-market theory, which relieves the plaintiff of the burden of proving individualized reliance on a defendant's misstatement, by permitting a rebuttable presumption that the plaintiff relied on the "integrity of the market price" which reflected that misstatement.[10] As the Supreme Court recognized in Basic, "[t]he fraud on the market theory is based on the hypothesis that, in an open and developed securities market, the price of a company's stock is determined by the available material information regarding the company and its business," including any available material misstatements. Id. at 241 (internal quotation marks and citation omitted). Since investors who purchase or sell stock do so in reliance on "the integrity of the market price," id. at 247, they indirectly rely on such misstatements because they purchase or sell stock at a price which necessarily reflects that misrepresentation. Under the fraud-on-the-market theory, "[m]isleading statements will therefore defraud purchasers of stock even if the purchasers do not directly rely on the misstatements."

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[10] Assuming the plaintiff gets the benefit of the rebuttable presumption at the class-certification stage, the defendant may still rebut this presumption at trial. According to the Court in Basic, "[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, will be sufficient to rebut the presumption of reliance." 485 U.S. at 248.

Id. at 242-43 (quoting Peil v. Speiser, 806 F.2d 1154, 1160-61 (3d Cir. 1986)); see also Shaw v. Digital Equip. Corp., 82 F.3d 1194, 1218 (1st Cir. 1996) (noting that in cases involving fraud-on-the-market theory, "the statements identified by plaintiffs as actionably misleading are alleged to have caused injury, if at all, not through the plaintiffs' direct reliance upon them, but by dint of the statements' inflating effect on the market price of the security purchased").

Before an investor can be presumed to have relied upon the integrity of the market price, however, the market must be "efficient". See Basic, 485 U.S. at 248 n.27 (recognizing elements cited by court of appeals for invoking fraud-on-the-market presumption of reliance, including "that the shares were traded on an efficient market").[11] Efficiency refers to the flow of information in the relevant market and the effect of that

[11] In addition, the plaintiff must prove: "(1) that the defendant made public misrepresentations; (2) that the misrepresentations were material" (i.e., that there is a substantial likelihood that such misrepresentations "would have been viewed by the reasonable investor as having significantly altered the 'total mix' of information made available"), and "would induce a reasonable, relying investor to misjudge the value of the shares"; and (3) "that the plaintiff traded the shares between the time the misrepresentations were made and the time the truth was revealed." Basic, 485 U.S. at 231-32, 248 n.27 (citing Levinson v. Basic, Inc., 786 F.2d 741, 750 (6th Cir. 1986), vacated on other grounds, 485 U.S. 224 (1988)); see generally A&J Deutscher Family Fund v. Bullard, No. CV 85-1850 PAR(JRX), 1988 WL 152011, at *8-12 (C.D. Cal. Nov. 29, 1988) (applying Basic's multi-prong test for determining presumption of reliance). These factors are not in dispute in this interlocutory appeal; therefore, we need not address them.

information on the price of the stock. See In re Laser Arms Corp. Sec. Litig., 794 F. Supp. at 490 (stating that "[t]he underlying premise of the fraud on the market theory assumes that the market is a transmission belt which efficiently translates all information concerning a security," including misleading information, "into a price"). In an efficient market, the defendant's misrepresentations are said to have been absorbed into, and are therefore reflected in, the stock price. Conversely, when a market lacks efficiency, there is no assurance that the market price was affected by the defendant's alleged misstatement at all. Instead, the price may reflect information wholly unrelated to the misstatement. See Freeman v. Laventhol & Horwath, 915 F.2d 193, 198 (6th Cir. 1990) (stating that "[a]n inefficient market, by definition, does not incorporate into its price all the available information about the value of a security. Investors, therefore, cannot be presumed to rely reasonably on the integrity of the market price of a security that is traded in such a market").

The fraud-on-the-market presumption of reliance and its relationship to market efficiency can thus be reduced to the following syllogism: (a) an investor buys or sells stock in reliance on the integrity of the market price; (b) publicly available information, including material misrepresentations, is reflected in the market price; and therefore, (c) the investor buys or sells stock in reliance on material misrepresentations. This syllogism breaks down, of course, when a market lacks efficiency, and the market does not necessarily reflect the alleged material misrepresentation. With this understanding as background, we must now decide the appropriate standard for determining whether a market is efficient.

B. The Meaning of "Market Efficiency"

The efficient market hypothesis began as an academic attempt to answer the following question: Can an ordinary investor beat the stock market, that is, can such an investor make trading profits on the basis of new information? In an efficient market, the answer is "no," because the information that would have given the investor a competitive edge and allowed the investor to "beat" the market is already reflected in the market price. See Lynn A. Stout, The Mechanisms of Market Inefficiency: An Introduction to the New Finance, 28 J. Corp. L. 635, 639 (2003) (stating that "[t]he common definition of market efficiency . . . is really a shorthand for the empirical claim that 'available information' does not support profitable trading strategies or arbitrage opportunities") (internal quotation marks and citation omitted).[12]

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[12] Commentators note that "[c]onventional finance recognizes this cannot be absolutely true, or no one would have incentive to trade on information in a way that leads to the incorporation of that information into prices." Stout, supra, at 640 n.24. As further discussed below, efficient markets are understood to possess enough profit opportunities to allow a small subset of professional investors, so-called arbitrageurs, to engage in competition with each other, thereby moving the price of stock to reflect such

There is, therefore, no "bargain" from which an investor can benefit. Since the stock price fully reflects the information, an investor cannot take advantage of it by either purchasing the stock (if the information indicates the stock is underpriced) or selling the stock (if the information indicates the stock is overpriced). See Philip H. Dyvig & Stephen A. Ross, Arbitrage, in 1 The New Palgrave Dictionary of Money and Finance 48 (Peter Newman et al. eds., 1992) (stating that "[t]he intuition behind [the efficient market hypothesis] is that if the price does not fully reflect all available information, then there is a profit opportunity available from buying the asset if the asset is underpriced or from selling the asset if the asset is overpriced").

One way information gets absorbed into the market and reflected in stock price is through arbitrageurs, who obtain and analyze information about stocks from a variety of sources, including from the issuer, market analysts, and the financial and trade press. In re Verifone Sec. Litig., 784 F. Supp. 1471, 1479 (N.D. Cal. 1992); see generally Ronald J. Gilson & Reinier H. Kraakman, The Mechanisms of Market Efficiency, 70 Va. L. Rev. 549, 566 (1983) (discussing variety of mechanisms by which new information is incorporated into stock price). These arbitrageurs immediately attempt to profit from such information (for instance,

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information.

through short sales[13]), thereby causing the stock to move to a price which reflects the latest public information concerning the stock, where it is no longer possible to generate profits. See Eckstein v. Balcor Film Investors, 8 F.3d 1121, 1129 (7th Cir. 1993) (stating that "[c]ompetition among savvy investors leads to a price that impounds all available information"); see also Stout, supra, at 638 n.15 (noting that if arbitrageurs observe a difference between price and value, "they immediately eliminate it by their trading") (internal quotation marks and citation omitted).[14]

The capacity of arbitrageurs to "seek out new information and evaluate its effects on the price of securities" distinguishes

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[13] In a short-sale transaction, the seller borrows shares that the seller believes to be overvalued from a broker, and pays the broker a so-called "loan fee" for the right to borrow the shares plus collateral (in cash) for the value of the shares (which is held in an interest-bearing margin account). The seller agrees to return shares of a similar type and amount to the broker at an unspecified date in the future. The seller then sells the borrowed stock. Assuming the price of the stock later decreases, the seller's profit will be the positive difference between the price the seller pays to replace the borrowed shares (a process known as "covering"), and the price at which the seller sold the stock. If the price increases before the seller covers its position, the seller suffers a loss.

[14] Plaintiff offers the following example of an arbitrage opportunity. Assume that the price of gold trading on the New York commodities market was $100.50 per ounce, while on the London market, which opened five hours earlier, the price was only $100 per ounce. The arbitrageur could first sell an ounce of gold "short" in New York, receiving $100.50 in return, and then purchase an ounce of gold in London for $100, retaining a profit of $0.50. In an efficient market, the New York market would have swiftly moved to match the London market price as arbitrageurs moved to exploit the imbalance in the two markets.

them from ordinary investors, who "lack the time, resources, or expertise to evaluate all the information concerning a security," and are thus "unable to act in time to take advantage of opportunities for arbitrage profits." Robert G. Newkirk, Comment, Sufficient Efficiency: Fraud on the Market in the Initial Public Offering Context, 58 U. Chi. L. Rev. 1393, 1409 (1991). In an efficient market, then, an ordinary investor "who becomes aware of publicly available information cannot make money by trading on it" because the information will have already been incorporated into the market by arbitrageurs. Stout, supra, at 640. "An example would be an investor who decides to sell a stock upon the public announcement of a decline in corporate earnings, who finds that by the time she calls her broker, the price has already dropped." Id.[15]

According to the prevailing definition of market efficiency, an efficient market is one in which market price fully

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[15] The efficient market hypothesis is not without its critics, some of whom argue that since not all investors have the means to seek out information on stocks or the expertise to decipher it, "the price of any given stock is not the same as it would be if all participants were informed; instead it merely reflects 'the actions of a mix of informed and uninformed participants.'" Brian E. Pastuszenski & Inez H. Friedman-Boyce, Back to Basic: Challenging the Application of the Efficient Market Hypothesis in Federal Securities Lawsuits, SK080 A.L.I.-A.B.A. 907, 919 (2005). Others challenge what they interpret to be the efficient market hypothesis' faulty assumptions about human behavior, that is, that "human beings are rational actors with stable preferences" who are "never mislead by emotion and who never make foolish mistakes." Stout, supra, at 660 (internal quotation marks omitted).

reflects all publicly available information. Stout, supra, at 639 (citing Eugene F. Fama, Efficient Capital Markets: A Review of Theory and Empirical Work, 25 J. Fin. 383 (1970)).[16] This definition has been adopted by many lower courts as a prerequisite for applying the fraud-on-the-market presumption of reliance. PolyMedica urges us to do likewise, arguing that an "efficient" market is an open and developed one, in which a stock price will move quickly to reflect all publicly available information.

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[16] Courts and commentators have noted that this prevailing definition of market efficiency is consistent with the "semi-strong" form of the efficient market hypothesis. See, e.g., In re Res. Am. Sec. Litig., 202 F.R.D. 177, 189 (E.D. Penn. 2001) (stating that "[t]he Basic court adopted the semi-strong form of market efficiency as a prerequisite for a fraud on the market presumption"); Jonathan R. Macey & Geoffrey P. Miller, Good Finance, Bad Economics: An Analysis of the Fraud-on-the-Market Theory, 42 Stan. L. Rev. 1059, 1077-78 (1990). There are three competing forms of this hypothesis – weak, semi-strong, and strong – each of which makes a progressively stronger claim about the kind of information that is reflected in stock price. Under the weak form, an efficient market is one in which historical price data is reflected in the current price of the stock, such that an ordinary investor cannot profit by trading stock based on the historical movements in stock price. Under the semi-strong form, an efficient market is one in which all publicly available information is reflected in the market price of the stock, such that an investor's efforts to acquire and analyze public information (about the company, the industry, or the economy, for instance) will not produce superior investment results. Finally, under the strong form, an efficient market is one in which stock price reflects not just historical price data or all publicly available information, but all possible information – both public and private. Based on this form of an efficient market, not even an inside trader can outperform other investors because all such information is reflected in market price. Macey & Miller, supra, at 1077-78. Commentators have noted that both strong-form and weak-form market efficiency are incompatible with the fraud-on-the-market theory. Id. at 1078-79.

The district court, on the other hand, expressly declined to adopt this prevailing definition of market efficiency. Relying upon language gleaned from the Supreme Court's decision in Basic, the district court held that "the 'efficient' market required for [the] 'fraud on the market' presumption of reliance is simply one in which 'market professionals generally consider most publicly announced material statements about companies, thereby affecting stock market prices'"; it "is not one in which a stock price rapidly reflects all publicly available material information." In re PolyMedica Corp. Sec. Litig., 224 F.R.D. at 41 (emphasis in original) (quoting Basic, 485 U.S. at 246 n.24). Plaintiff agrees with the district court's definition, which, he contends, is drawn directly from language used by the Supreme Court in Basic.

PolyMedica argues that the district court's definition of market efficiency, while rooted in a footnote in Basic, defies the controlling language of Basic, the cases upon which Basic relied, and the subsequent cases interpreting Basic, all of which support the prevailing definition of market efficiency. Specifically, PolyMedica argues that the definition adopted by the district court wrongly focuses on the thought processes of unidentified market professionals and whether stock prices are in some way affected by their consideration of most (but not necessarily all) material public information. The prevailing definition, on the other hand, requires a more searching inquiry into whether stock prices fully reflect all publicly available information. We must assess these conflicting positions of the parties.

C. The Standard for Determining an Efficient Market

1. Basic v. Levinson

While endorsing the fraud-on-the-market presumption of reliance in Basic, the Supreme Court did not explicitly address the meaning of an "efficient" market. See Gariety, 368 F.3d at 368 (stating that Basic "offers little guidance for determining whether a market is efficient"). PolyMedica points to various passages in Basic purportedly showing a preference for the prevailing definition of an efficient market, noting the Supreme Court's statements that "[t]he market is acting as the unpaid agent of the investor, informing him that given all the information available to it, the value of the stock is worth the market price," and that "the market price of shares traded on well-developed markets reflects all publicly available information, and hence, any material misrepresentations." Basic, 485 U.S. at 244, 246 (emphasis added) (internal quotation marks and citation omitted).

Elsewhere, however, the Basic decision suggests that something less than "all publicly available information" may be required, noting that an investor's reliance may be presumed "[b]ecause most publicly available information is reflected in market price," id. at 247 (emphasis added). In separate footnotes of the decision, the Court further appeared to resist PolyMedica's suggested definition of an efficient market. As pointed out by the district court, the Supreme Court, after listing several academic articles, noted that:

> [w]e need not determine by adjudication what economists and social scientists have debated through the use of sophisticated statistical analysis and the application of economic theory. For purposes of accepting the presumption of reliance in this case, we need only believe that market professionals generally consider most publicly announced material statements about companies, thereby affecting stock market prices.

Id. at 246 n.24. In addition, the Court noted that by accepting a rebuttable presumption of reliance, it "d[id] not intend conclusively to adopt any particular theory of how quickly and completely publicly available information is reflected in market price." Id. at 249 n.28.

While the Supreme Court's language in Basic provides support for both the district court's definition of an efficient market as well as the prevailing definition urged by PolyMedica, the cases relied upon by the Supreme Court in Basic favor the latter definition. In Peil, cited extensively in Basic, the Third Circuit noted that "[t]he 'fraud on the market' theory rests on the assumption that there is a nearly perfect market in information, and that the market price of stock reacts to and reflects the available information." Peil, 806 F.2d at 1161 n.10. Likewise, in In re LTV Sec. Litig., 88 F.R.D. 134 (N.D. Tex. 1980), which the

Supreme Court also cited, the district court stated that "[t]he central assumption of the fraud on the market theory [is] that the market price reflects all representations concerning the stock. . . . [E]fficient capital markets exist when security [sic] prices reflect all available public information about the economy, about financial markets, and about the specific company involved." Id. at 144.

Other cases cited in Basic, including the decision of the Sixth Circuit under review in Basic, similarly support the prevailing definition. See Levinson, 786 F.2d at 750 (stating that "[t]he fraud on the market theory is based on two assumptions: first, that in an efficient market the price of stock will reflect all information available to the public . . . and, second, that an individual relies on the integrity of the market price when dealing in that stock"); T.J. Raney, Inc. & Sons v. Fort Cobb Irrigation Fuel Auth., 717 F.2d 1330, 1332 (10th Cir. 1983) (stating that "[t]he [fraud-on-the-market] theory is grounded on the assumption that the market price reflects all known material information").

Given the Supreme Court's disclaimer that it was not adopting any particular economic theory in applying the fraud-on-the-market presumption of reliance, on the one hand, and its embrace of the holdings of cases adopting the prevailing definition of market efficiency on the other hand, the most that can be said of Basic is that it did not directly address the meaning of an efficient market, choosing instead to leave the development of that concept to the lower courts. See Abell v. Potomac Ins. Co. of Ill., 858 F.2d 1104, 1120 (5th Cir. 1988) (stating that "Basic essentially allows each of the circuits room to develop its own fraud-on-the-market rules"), vacated on other grounds sub. nom. Fryar v. Abell, 492 U.S. 914 (1989). Basic is therefore not the benchmark for deriving a definition of market efficiency. We must turn to the decisions of the lower courts, post-Basic, for further guidance.

2. Lower Courts' Interpretation of "Market Efficiency"

PolyMedica correctly notes that in the wake of Basic, many lower courts have accepted a definition of market efficiency which requires that stock price fully reflect all publicly available information. The district court conceded as much: "I also note that the definition I have derived from Basic differs from much of the existing case law. Most cases define an 'efficient' market as a market in which prices incorporate rapidly or promptly all publicly available information." In re PolyMedica Corp. Sec. Litig., 224 F.R.D. at 42.

The district court's observation was apt. The precedents from other circuits overwhelmingly favor the definition advanced by PolyMedica. See Gariety, 368 F.3d at 368 (stating that "in an efficient market, 'the market price has integrity[;] . . . it adjusts rapidly to reflect all new information'") (quoting Macey & Miller, supra, at 1060); Greenberg v. Crossroads Sys., Inc., 364 F.3d 657, 662 n.6 (5th Cir. 2004) (stating that "where securities are traded in an efficient market, it is assumed that all public information concerning a company is known to the market and reflected in the market price of the company's stock"); No. 84 Employer-Teamster Joint Council Pension Trust Fund v. Am. West Holding Corp., 320 F.3d 920, 947 (9th Cir. 2003) (stating that "in a modern and efficient securities market, the market price of a stock incorporates all available public information"); GFL Advantage Fund, Ltd. v. Colkitt, 272 F.3d 189, 208 (3d. Cir. 2001) (defining "efficient marketplace" as one "in which stock prices reflect all available relevant information about the stock's economic value"); Joseph v. Wiles, 223 F.3d 1155, 1164 n.2 (10th Cir. 2000) (stating that in an efficient market "the investor must rely on the market to perform a valuation process which incorporates all publicly available information, including misinformation"); Kowal v. MCI Communications Corp., 16 F.3d 1271, 1276 n.1 (D.C. Cir. 1994) (stating that "in an efficient securities market all publicly available information regarding a company's prospects has been reflected in its shares' price"); Raab v. Gen. Physics Corp., 4 F.3d 286, 289 (4th Cir. 1993) (reasoning that fraud-on-the-market presumption of reliance assumes "the market price has internalized all publicly available information");

Freeman, 915 F.2d at 198 (stating that "[t]he fraud on the market theory rests on the assumption that the price of an actively traded security in an open, well-developed, and efficient market reflects all the available information about the value of a company").

The prevailing definition of an efficient market is also consistent with language in our pre-Basic decision in Roeder v. Alpha Industries, Inc., 814 F.2d 22 (1st Cir. 1987). There, we stated that under the fraud-on-the-market theory, "[t]he market price of stock is taken to be the basis for investment decisions; because the price reflected all available information, investors are presumed to have been misled by the nondisclosure." Id. at 27.[17]

3. Other Arguments Supporting the Prevailing Definition of "Market Efficiency"

PolyMedica points to statements made by the United States Securities and Exchange Commission ("SEC") supporting the prevailing definition of market efficiency. See Brief for the Securities and Exchange Commission as Amicus Curiae, Basic v.

[17] We did not, however, determine the standard for market efficiency in Roeder. That case required us to decide whether the fraud-on-the-market theory creates an affirmative duty to disclose material information to the public. We concluded that it does not, and stated that once plaintiffs have demonstrated breach of a duty to disclose material information, the fraud-on-the-market theory merely obviates the need for a plaintiff to prove reliance on the nondisclosure. We noted in dicta that this presumption of reliance stems from a plaintiff's reliance on market price which necessarily reflects that nondisclosure.

Levinson, 485 U.S. 224 (1988) (No. 86-279), available at 1987 WL 881068, at *22 (stating that fraud-on-the-market theory rests on proposition that "in an active secondary market, the price of company's stock is determined by all material information regarding the company and its business"); see also Arthur Levitt, Chairman, U.S. Securities and Exchange Commission, Testimony before House Subcomm. on Telecomm. & Fin., 104th Cong. 13 (Feb. 10, 1995), available at http://www.sec.gov./news/testimony/testarchive/1995/spch025.txt.

PolyMedica also argues with some force that the district court's definition is logically inconsistent. By requiring that an efficient market need only be affected by most but not all material information in order to be efficient, the district court's definition allows some information to be considered "material" and yet not affect market price. Cf. In re Burlington Coat Factory Sec. Litig., 114 F.3d 1410, 1425 (3d Cir. 1997) (stating that "[i]n the context of an 'efficient' market, the concept of materiality translates into information that alters the price of the firm's stock").

4. "Market Efficiency" Defined

On the basis of the authorities and considerations cited, we conclude that the definition of market efficiency adopted by the district court is inconsistent with the presumption of investor reliance at the heart of the fraud-on-the-market theory. By rejecting the prevailing definition of market efficiency advocated by PolyMedica, and focusing instead on the general consideration by market professionals of most publicly announced material statements about companies, the district court applied the wrong standard of efficiency. For application of the fraud-on-the-market theory, we conclude that an efficient market is one in which the market price of the stock fully reflects all publicly available information.

Anticipating the possibility of this definition, Plaintiff complains that it forces him to prove that market price "correctly" reflects a stock's fundamental value[18] before a market will be considered efficient. This argument misconstrues the conclusion that market price must "fully reflect" all publicly available information. The words "fully reflect" have two distinct meanings, each of which points to a different concept of market efficiency.

5. "Informational" v. "Fundamental Value" Efficiency

The first meaning of "fully reflect" focuses on the ability of the market to digest information, thereby preventing

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[18] As we discuss in further detail below, fundamental value is a technical concept which depends on the present value of expected future cash flows (e.g., dividends, interest or principal payments, liquidations values), "as estimated by well informed and capable analysts." Jonathan R. Macey et al., Lessons from Financial Economics: Materiality, Reliance, and Extending the Reach of Basic v. Levinson, 77 Va. L. Rev. 1017, 1022 (1991).

trading profits: 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." Stout, supra, at 651. This is known as "informational efficiency," and is best understood "as a prediction or implication about the speed with which prices respond to information." Id. at 640; see also Daniel R. Fischel, Efficient Capital Markets, the Crash, and the Fraud on the Market Theory, 74 Cornell L. Rev. 907, 913 (1989) (stating that "[u]nder this definition, a market is efficient if it is impossible to devise a trading rule that systematically outperforms the market . . . absent possession of inside information").

"With many professional investors alert to news, markets are efficient in the sense that they rapidly adjust to all public information . . . ." West, 282 F.3d at 938. Where the market reacts slowly to new information, it is less likely that misinformation was reflected in market price and therefore relied upon. See City of Monroe Employees Ret. Sys. v. Bridgestone Corp., 399 F.3d 651, 676 (6th Cir. 2005) (stating that "in an open and efficient securities market[,] information important to reasonable investors (in effect, the market) is immediately incorporated into stock prices") (internal quotation marks and citation omitted); Freeman, 915 F.2d at 199 (stating that "[a]n efficient market is one which rapidly reflects new information in price") (quoting

Cammer, 711 F. Supp. at 1276 n.17); Fischel, supra, at 912 (stating that "the more rapidly prices reflect publicly-available information, the more sensible it is to apply the [fraud-on-the-market theory]").

Determining whether a market is informationally efficient, therefore, involves analysis of the structure of the market and the speed with which all publicly available information is impounded in price. See Fischel, supra, at 912 (enumerating factors relevant to determination of "trading-rule" [i.e., "informational"] efficiency, including whether a stock "is actively traded, and whether it is followed by analysts and other market professionals. . . . , [and] the speed of price adjustment to new information [which] can be tested directly by use of widely-accepted statistical techniques").

The second, and much broader meaning of "fully reflect," focuses on the price of the stock as a function of its fundamental value: market price "fully reflects" all publicly available information when it responds to information not only quickly but accurately, such that "market prices mirror 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." Stout, supra, at 640. This is known as "fundamental value efficiency." See Fischel, supra, at 913 (stating that fundamental value efficiency "focuses on the extent to which security prices reflect the present value of the net cash flows generated by a firm's assets").

Determining whether a market is fundamental value efficient is a much more technical inquiry than determining informational efficiency. Depending on the method of valuation used, a stock's fundamental value turns on an assessment of various factors, including "present operations, future growth rates, relative risk levels, and the future levels of interest rates." Newkirk, supra, at 1399; see, e.g., Stout, supra, at 641, 643-44 (discussing valuation of stocks based on Capital Asset Pricing Model, which focuses on expected risks and returns); cf. Fischel, supra, at 914 (stating that the results of certain kinds of tests which measure "how closely prices reflect value," such as those which measure "whether the variability of prices is greater than the variability of dividends over time . . . . have been extremely controversial").

Courts and commentators often use these two concepts of market efficiency interchangeably. See Newkirk, supra, at 1407 (stating that "[t]he manner in which the courts apply the [efficient market hypothesis] is problematic because courts often fail to distinguish between value efficiency and information efficiency").[19] In fact, informational and fundamental value

[19] The parties, themselves, appear to confuse these two concepts. In its briefs to this Court, PolyMedica does not mention accuracy

efficiency "often are [] made to go hand-in-hand, with fundamental value efficiency flowing naturally from informational efficiency." See Stout, supra, at 641. Despite this blurring of concepts, one thing is clear: a market can be information efficient without also being fundamental value efficient. Stout, supra, at 651 (stating that "informational efficiency and fundamental value efficiency are distinct concepts"); see also Fischel, supra, at 913-14. While 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." Eckstein, 8 F.3d at 1130.

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of stock price as a condition of market efficiency, and explicitly states that an efficient market need not always set a "statistically 'correct price' at each instant." However, the report of PolyMedica's expert, Dr. Neumann Martin, together with PolyMedica's surreply to the district court, contend that market efficiency requires proof that "the resulting stock price fully and correctly reflected the news." PolyMedica's surreply goes on to state that "the case law makes clear that the market for a particular stock must absorb all publicly available information to bring about the 'correct price' in order for a market to be efficient," and furthermore, that "in an efficient market, the price must accurately reflect the stock's value based on that information." Thus, while PolyMedica purports to argue that the PolyMedica market was not efficient in the informational sense, PolyMedica occasionally uses language that reflects the broader concept of fundamental value. By the same token, in his reply brief to this Court, Plaintiff objects to PolyMedica's application of a "correct price" approach to market efficiency. However, in his response to PolyMedica's surreply to the district court, Plaintiff appears to embrace this approach by quoting Hurley v. FDIC, 719 F. Supp. 27 (D. Mass. 1989), for the proposition that an efficient market is "one that obtains material information about a company and accurately reflects that information in the price of the stock." Id. at 33 (emphasis added).

Therefore, by requiring that stock price in an efficient market fully reflect all publicly available information in order to establish the fraud-on-the-market presumption, we do not suggest that stock price must accurately reflect the fundamental value of the stock. This distinction is well-supported by the legal and economic commentary. See Jill E. Fisch, Picking a Winner, 20 J. Corp. L. 451, 464 (1995) (book review) (stating that "[s]tock prices regularly and persistently depart substantially from present value models as well as from financial variables that would appear to supply most of the information relevant to a calculation of fundamental value"); Baruch Lev & Meiring de Villiers, Stock Prices and 10B-5 Damages: A Legal, Economic, and Policy Analysis, 47 Stan. L. Rev. 7, 20 (1994) (stating that "overwhelming empirical evidence suggests that capital markets are not fundamentally efficient"); Newkirk, supra, at 1399 (noting that a "major drawback to fundamental value theory is that it requires a great deal of specific, sometimes unobtainable, information").

Our focus on whether a particular market has absorbed all available information (and misinformation) – such that an ordinary investor cannot beat the market by taking advantage of unexploited profit opportunities – is not a fundamental value inquiry. See Stout, supra, at 651 (stating that "when finance economists define market efficiency in terms of the difficulty of making arbitrage profits, they have implicitly abandoned the more-powerful claim that efficient markets price securities accurately"). On the contrary, for purposes of establishing the fraud-on-the-market presumption of reliance, investors need only show that the market was informationally efficient. See In re Verifone Sec. Litig., 784 F. Supp. at 1479 n.7 (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."). The fraud-on-the-market theory is concerned with whether a market processes information in such a way as to justify investor reliance, not whether the stock price paid or received by investors was "correct" in the fundamental value sense.

Still, as a matter of logic, we cannot say that fundamental value efficiency has no place in applying the fraud-on-the-market presumption of reliance at the class-certification stage. Evidence bearing on a stock's fundamental value may be relevant to the efficiency determination as, for example, circumstantial evidence that arbitrageurs are not trading in the market, with the result that securities prices do not fully reflect all publicly available information. In other words, evidence of fundamental value may be relevant to the extent that it raises questions about informational efficiency. But there are practical limits on the evidence a court can or should consider during the class-certification proceedings. Courts which choose to consider such fundamental value evidence at the class-certification stage run the risk of turning the class-certification proceeding into a mini-trial on the merits, which must not happen. See Eisen, 417 U.S. at 178 (stating that "[i]n determining the propriety of a class action, the question is not whether the plaintiff or plaintiffs . . . will prevail on the merits, but rather whether the requirements of Rule 23 are met") (internal quotation marks and citation omitted).

6. Evidence Necessary to Prove Presumption of Reliance

It is important to remember that the application of the fraud-on-the-market presumption only establishes just that – a presumption of reliance. That reliance can be rebutted at trial. See Cammer, 711 F. Supp. at 1290 (stating that "if it were concluded after a hearing [that] the market appeared efficient, and [that] plaintiffs could proceed under the rebuttable presumption, [the defendant] would be entitled to prove to a jury that the market was inefficient, thereby rebutting the presumption"); see also Lehocky v. Tidel Techs., Inc., 220 F.R.D. 491, 505 n.16 (S.D. Tex. 2004) (stating that "[a]t [the class-certification] stage of the proceedings, the Court need only inquire whether the stock traded in an efficient market and not examine the merits of the case. . . . Thus, the Court will not address whether Defendants' [sic] can rebut the presumption of reliance").

As the notes of the Advisory Committee on Rule 301 of the Federal Rules of Evidence, cited in Basic, make clear, a party need only establish "basic facts" in order to invoke the presumption of reliance. See Basic, 485 U.S. at 245 (citing Rule 301 and Advisory Committee Notes in support of statement that "presumptions are . . . useful devices for allocating the burden of proof between parties"); see also Cammer, 711 F. Supp. at 1291 n.48 (stating that under the notes of the Advisory Committee on Rule 301, the nonmoving party has the burden of establishing the nonexistence of the presumed fact "once the party invoking the presumption establishes the basic facts giving rise to it") (emphasis in original) (internal quotation marks omitted).

The question of how much evidence of efficiency is necessary for a court to accept the fraud-on-the-market presumption of reliance at the class-certification stage is therefore one of degree. District courts must draw these lines sensibly, mindful that evidence of fundamental value may be relevant to the determination of informational efficiency, but 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.

We have no illusions that this line-drawing is easy. Knowing the high stakes in the class-certification decision,[20] the parties will try to move the court in different directions, with plaintiffs arguing for less evidence of efficiency and defendants for more, some of it highly technical. Exercising its broad discretion, and understanding the correct definition of efficiency and the factors relevant to that determination, the district court must evaluate the plaintiff's evidence of efficiency critically without allowing the defendant to turn the class-certification proceeding into an unwieldy trial on the merits. In this highly variable setting, these generalities are the best we can do.

IV.

Having concluded that the district court adopted the wrong definition of market efficiency, we must now decide whether the court's determination that the market for PolyMedica stock was efficient is nevertheless supportable. As previously discussed, the question of whether a particular market is efficient is a mixed question of law and fact. While the proper definition of market efficiency is a purely legal issue reviewed de novo, application of this definition to the facts of a case requires district courts to

[20] Very few class actions go to trial. See Barbara J. Rothstein & Thomas E. Willging, Federal Judicial Center, Managing Class Action Litigation: A Pocket Guide for Judges 6 (2005) (stating that according to 2005 study, certified class actions settled ninety percent of the time).

make judgments about the structure of the market for a particular stock. These judgments are reviewed for clear error. Many factors bearing on the structure of the market may be relevant to the efficiency analysis, and courts have wide latitude in deciding what factors to apply in a given case, and what weight should be given to those factors.

The district court in this case based its analysis of market efficiency on three factors: "(1) the involvement of market professionals, (2) the degree to and fluidity with which information is disseminated, and (3) whether information affected stock market prices." In re PolyMedica Corp. Sec. Litig., 224 F.R.D. at 42-43. Applying these factors, the district court determined that the market for PolyMedica stock met the court's definition of market efficiency, that is, "one in which market professionals generally considered most publicly announced material statements about PolyMedica, thereby affecting the stock market price." Id. at 43. The court explicitly rejected PolyMedica's proffered evidence,[21] which focused on whether market price "fully

[21] PolyMedica submitted the expert report of Dr. Denise Neumann Martin, who asserted that constraints on short sales, as evidenced by a high degree of shorting, a high cost of borrowing shares, and the inability to find shares to short, prevented would-be short sellers from trading on information, thereby preventing the market from incorporating such information. Dr. Neumann Martin posited that this breakdown in the ability of the market to incorporate such information resulted in unexploited profit opportunities, as evidenced by the results of two tests: the serial correlation test (assessing whether an investor can predict price changes based on historical price data) and the put-call parity test (assessing

and rapidly reflect[ed] all the publicly available material information," ruling that it was "not relevant to the definition of market 'efficiency'" announced by the court. Id.

PolyMedica argues that by adopting the wrong definition of market efficiency, the district court erroneously refused to consider PolyMedica's evidence and, therefore, erroneously concluded that the market for PolyMedica stock was efficient. Plaintiff argues that regardless of whether the court adopted the wrong definition of efficiency, the factors analyzed by the court were nevertheless sufficient to support a finding of market efficiency under the correct definition of market efficiency that we adopt today. While we agree with Plaintiff that the factors considered by the district court were relevant to the issue of market efficiency, these factors are not exhaustive. See Unger, 401 F.3d at 323. If the district court had used the definition of market efficiency that we adopt today, other factors cited by PolyMedica may have also been relevant to the efficiency analysis and may have supported a contrary finding. The district court's error, therefore, was not in analyzing the factors that it did, but

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whether an investor can guarantee a profit by engaging in a series of transactions involving a company's stock and its options). We make no judgment on the relevance of this evidence to the efficient market determination, or the appropriateness of the court's consideration of this evidence during class-certification proceedings. As we have just indicated, those questions are for the district court to decide in the first instance, applying the proper definition of efficiency.

in applying an erroneous definition of market efficiency that prevented it from analyzing other arguably relevant evidence. We must therefore vacate its decision and remand for application of the proper standard.[22]

V.

We summarize the essential points of our analysis. The district court was entitled to look beyond the pleadings and consider evidence in its evaluation of the applicability of the fraud-on-the-market presumption of reliance, and in its resolution of the class-certification question. However, the district court adopted a standard of market efficiency at odds with the prevailing standard, holding that market efficiency means that market professionals generally consider most publicly announced material statements about companies, thereby affecting stock market prices. This was error.

For purposes of establishing the fraud-on-the-market presumption of reliance, we adopt the prevailing definition of market efficiency, which provides that an efficient market is one

[22] In its order granting class certification, the district court specifically excluded all short-sellers from the class, noting that short-sellers do not rely on the integrity of the market price (rather, they believe the market price is too high), and therefore are not entitled to a fraud-on-the-market presumption of reliance. PolyMedica argues that, even if the market for PolyMedica was efficient during the Contested Time Period, class certification still should not have been granted because the class is not "ascertainable." Because we vacate the district court's order certifying the class, we need not decide this issue.

in which the market price of the stock fully reflects all publicly available information. By "fully reflect," we mean that market price responds so quickly to new information that ordinary investors cannot make trading profits on the basis of such information. This is known as "informational efficiency." We reject a second and much broader meaning of "fully reflect," known as "fundamental value efficiency," which requires that a market respond to information not only quickly but accurately, such that the market price of a stock reflects its fundamental value.

While evidence of a stock's fundamental value may be relevant to the extent that it raises questions about informational efficiency, courts which choose to consider such fundamental value evidence at the class-certification stage run the risk of turning the class-certification proceeding into a mini-trial on the merits, which must not happen. The fraud-on-the-market presumption, after all, only establishes a presumption of reliance which can be rebutted at trial. At the class-certification stage, a party need only establish "basic facts" in order to invoke the presumption of reliance. The question of how much evidence of efficiency is necessary to establish the fraud-on-the-market presumption of reliance is one of degree. While district courts have broad discretion to draw these lines, they must do so sensibly, understanding the correct definition of efficiency and the factors relevant to that determination.

Having concluded this analysis, we must **vacate** the district court's order certifying the class for the period beginning January 2001 and ending August 2001, and **remand** for further proceedings consistent with this opinion. Each party shall bear its own costs of appeal.

So ordered.