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AGREEING TO DISAGREE OVER EXCESSIVE TRADING

Lynn A. Stout

THE heterogeneous expectations (“HE”) model of trading analyzes stock trading as a problem of differing information costs. Because investors have access to different and imperfect subsets of information, they disagree with each other and with market prices in estimating stock values. And because investors—especially novice investors—also lack perfect information about their relative stock-picking skills, the subset of the investing population who estimate that their skills are above average may try to profit from their disagreement by buying and selling stocks that they believe are mispriced. Over time, traders acquire new information about their relative trading skills that teaches a portion of those who thought that they could “beat the market” that their original, optimistic estimates of their own abilities were inaccurate. Yet even as losing traders exit the market, a new generation of inexperienced traders arrives, necessarily lacking the information required to avoid the prior generation’s mistakes.¹

In contrast, noise trader models of stock trading are explicitly grounded on the premise that a substantial portion of traders are irrational. Although what is meant by “irrational” is not always made clear, the noise literature seems for the most part to presume that a subset of investors suffer cognitive defects that render them unable to make unbiased estimates and to distinguish information from “noise.” Trading by “rational” investors (who are presumably free of such cognitive defects) fails to eliminate the distortive effects of noise traders’ transactions, because noise traders add market risk that limits rational traders’ willingness to bet against them.²

¹ See Lynn A. Stout, *Are Stock Markets Costly Casinos? Disagreement, Market Failure, and Securities Regulation*, 81 Va. L. Rev. 611 (1995).

² See Fischer Black, *Noise*, 41 J. Fin. 529 (1986); J. Bradford De Long, Andrei Shleifer, Lawrence H. Summers & Robert J. Waldmann, *Noise Trader Risk in Financial Markets*, 98 J. Pol. Econ. 703, 734-35 (1990); J. Bradford De Long, Andrei Shleifer, Lawrence H. Summers & Robert J. Waldmann, *The Size and Incidence of the Losses from Noise*

As these brief sketches suggest, HE theory and noise trader theory rely on differing assumptions, hypothesize differing market mechanisms, offer many differing positive predictions, and carry several differing policy implications. For example, because the HE model is premised on imperfect information, it predicts that welfare losses from HE trading might be reduced by disclosure rules that provide investors with more complete information concerning either stock values or their own relative trading abilities.³ Noise traders are hypothesized to suffer innate cognitive defects that render them, presumably, beyond help. Noise theory suggests that stock market prices depart from fundamental values because noise traders add to market prices risk that deters rational investors from fully arbitraging away price distortions. Under the HE model, even perfect arbitrage cannot ensure that market prices equal fundamental values, because the very concept of fundamental value becomes elusive in a market where equilibrium prices only aggregate the differing expectations of investors who are all imperfectly informed to lesser or greater degrees.⁴

Although HE theory and noise theory differ in their premises and many of their results, Professor Paul Mahoney argues in the pages of this journal that they share an important similarity. In particular, he argues that they both presume some type (although perhaps different types) of investor irrationality.⁵ In making this point, Mahoney raises the interesting and curious question: Can rational investors disagree?

A body of work in game theory posits that it is, indeed, irrational to trade on the basis of heterogeneous expectations. Rational investors cannot "agree to disagree."⁶ The intuition underlying this surprising result is that parties who rely on different, imperfect sub-

Trading, 44 *J. Fin.* 681, 694 (1989); J. Bradford De Long, Andrei Shleifer, Lawrence H. Summers & Robert J. Waldmann, *The Survival of Noise Traders in Financial Markets*, 64 *J. Bus.* 1, 18 (1991); Andrei Shleifer & Lawrence H. Summers, *The Noise Trader Approach to Finance*, *J. Econ. Persp.*, Spring 1990, at 19, 31.

³ Stout, *supra* note 1, at 691-702.

⁴ *Id.* at 651-56.

⁵ Paul G. Mahoney, *Is There a Cure for "Excessive" Trading?*, 81 *Va. L. Rev.* 713 (1995).

⁶ See Robert J. Aumann, *Agreeing To Disagree*, 4 *Annals Stat.* 1236 (1976); John D. Geanakoplos & Heraklis M. Polemarchakis, *We Can't Disagree Forever*, 28 *J. Econ. Theory* 192 (1982); Paul Milgrom & Nancy Stokey, *Information, Trade and Common Knowledge*, 26 *J. Econ. Theory* 17 (1982).

sets of information in making estimates of the probability of an event should recognize that their estimates are potentially flawed and be willing to revise them in light of another's disagreement. Thus bullish John should temper his enthusiasm to buy GM when he learns that bearish Mary wants to sell because he knows she may have information he does not.⁷

On first inspection, the "no-speculation" literature may seem to imply that HE trading is irrational (as opposed to ill-informed) behavior. Closer analysis reveals this is not necessarily the case. The no-speculation result depends on the strong assumptions that all investors share "concordant beliefs" (meaning that all traders process information in an identical fashion and all would make the same estimates given the same data) and that concordant beliefs are "common knowledge" (meaning that all investors know that all investors have concordant beliefs).⁸ The assumptions of concordant beliefs and common knowledge explain why John is so willing to revise his estimate downward when he learns of Mary's disagreement; John respects Mary's judgment because he knows that she interprets information just as he does, and would not be willing to sell GM unless she had access to information that would lead John, too, to conclude GM was overpriced.

Because the no-speculation result depends on concordant beliefs and common knowledge, it may not apply when investors believe other market participants may be trading for reasons *other* than disagreement with market prices. Thus John may not fully revise his optimistic estimate downwards if he believes there is a chance that Mary is selling GM because she needs money or a more balanced portfolio rather than because she has information suggesting GM is overvalued. Similarly, the assumptions of concordant beliefs and common knowledge are violated if John thinks Mary

⁷ Interestingly, the no-speculation literature also concludes that even when parties who initially disagree revise their prior estimates to reach a common valuation, that valuation is not necessarily the same valuation that they would reach if they had shared information. See Geanakoplos & Polemarchakis, *supra* note 6, at 199 (noting phenomenon but suggesting that its occurrence is rare). This result of the no-speculation literature somewhat resembles HE theory's prediction that when investors must form expectations based on differing, imperfect subsets of information, market prices will not necessarily reflect the "best," or most well-informed, estimate of value. See Stout, *supra* note 1, at 655-56.

⁸ See Milgrom & Stokey, *supra* note 6, at 19-20.

might be behaving strategically, or is possibly irrational. In other words, investors may trade on disagreement not because they themselves are irrational, but because they believe *others* in the market may be.⁹

The possibility that HE trading reflects positive information costs rather than irrationality also is supported by evidence that investors who lose money trying to "beat the market" may learn from their experience and stop trying.¹⁰ Although the no-speculation literature assumes that traders infer information from the price-taking behavior of others in the market, it does not address how they learn to do this. We are born into the world ignorant and uninformed; our environment is a black box from which we draw samples and infer information. Because most markets are consumer goods markets driven by differences in tastes and in costs of production, rather than speculative markets driven by differences in information and expectations, the notion that one should revise one's own valuation of an asset based on the prices others are willing to pay is not obvious. Indeed, it was not apparent to economists until relatively recently.¹¹ It seems plausible that a novice investor who has not been lucky enough to have taken a course in game theory might begin trading stocks unaware of the possibility that other investors' willingness to trade with her is a signal that something is amiss. Over time she may learn to hesitate before selling to a willing buyer. Does this mean she has learned not to be irrational? Or does it mean instead that her earlier trades reflected ignorance of the import of others' price-taking behavior—in other words, imperfect information?

At this theoretical level, the question whether it is rational for investors to trade on disagreement is both interesting and difficult. Perhaps academics must simply agree to disagree on the answer

⁹ See Milton Harris & Artur Raviv, *Differences of Opinion Make a Horse Race*, 6 Rev. Fin. Stud. 473, 490 (1993) (concluding that stock trading generated by differences of opinion is rational, although traders may view others as irrational).

¹⁰ Stout, *supra* note 1, at 635-41. A similar learning process has been found in some experimental studies of the "winner's curse." Richard H. Thaler, *The Winner's Curse: Paradoxes and Anomalies of Economic Life* 50-62 (1992). The winner's curse is related to HE trading because both phenomena involve optimistic self-selection under conditions of uncertainty and disagreement, and both are inconsistent with the perfect revision of expectations predicted by the no-speculation literature.

¹¹ See sources cited note 6, *supra*.

until they either acquire better information, or become more rational.

At the practical level, however, the answer may be unimportant. Whether HE trading reflects positive information costs or investor irrationality, so long as investors trade on disagreement, a purely laissez-faire approach to stock markets can invite welfare losses that might be avoided under a regulatory scheme designed to reduce the dispersion of investors' expectations, decrease the costs of their mistakes, or hasten their learning. Neither Professor Mahoney nor anyone else with experience in financial markets seems eager to quarrel with the claim that disagreement exists and that it plays an important role in stock trading. Given that reality, it seems unwise (or even irrational) to ground analysis of securities markets solely on elegant, but often inaccurate, financial models built on the fragile assumptions of investor homogeneity and agreement.