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I. Introduction

Behavioral economics is emerging as an important new disciplinary adjunct to legal analysis. Encompassing a wide range of fields – from the meta territories of jurisprudence and judicial decisionmaking to the traditional zones of contracts and torts to the specialized areas of tax and health law – behavioral economics shakes up thought and reorients scholarship laden by its progenitor, law and economics. Behavioral economics revises the received wisdom that assumed the bounded but substantial rationality of human actors and prescribed legal rules and social norms according to sterile abstractions that bore little resemblance to actual human beings, but which could be modeled in elegant and simple ways. As a result, the encrusted models have been injected with more realistic accounts of complex human behavior originally mapped in the field of cognitive psychology, subsequently adapted by economists, and lately imported by legal scholars.[1]

One corner of this behavioral orientation toward economics and law and the vast social domains those disciplines canvass examines the pricing of stocks in public capital markets. The knowledge being generated from this investigation has significant implications for the field of corporate governance. Corporate law and economics assume that prices of publicly traded stocks constitute the best estimate of the value of the ownership interest in the businesses they represent. Thousands of investors study relevant information about the cash flows that companies are expected to generate and price their stocks based on a risk-adjusted multiple. Some investors may act irrationally in the process, but there are enough rational investors to offset (and indeed take advantage of) such irrationality that the pricing mechanism works and the stock markets are efficient.

A set of cultural beliefs accompany the view that stock markets are efficient in terms of accurately pricing business value.[2] Chief among these is the belief that the stock market itself operates as a disciplining device on corporate managers. The theory is that a company's stock price is an accurate and transparent report card on its performance: a manager who performs poorly will see his company's stock price fall and be held accountable.

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1. For a thorough and leading example that considers rational choice theory in its various guises and a series of behavioral realities that contradict it and the effects of these on various legal policies, see Russell B. Korobkin & Thomas S. Ulen, *Law and Behavioral Science: Removing the Rationality Assumption from Law & Economics*, 88 CAL. L. REV. 1051, 1060-74 (2000). *See generally* Daniel A. Farber, *Toward a New Legal Realism*, 68 U. CHI. L. REV. 279 (2001) (discussing impact of rational choice theory on legal doctrine).

2. *See* Donald C. Langevoort, *Theories, Assumptions and Securities Regulation: Market Efficiency Revisited*, 140 U. PA. L. REV. 851, 889 (1992) (discussing effect of political culture on market value).

Accountability could take the form of an unwanted takeover by a third party, through which the manager is ousted. It could come from the impairment of reputation that would diminish the manager's future job prospects. It also could come in the form of a cooled reception by investors to any future plans the manager may have to attract additional financing to run or expand the company's business. The efficient market's discipline also limits managerial discretion over major capital-structure and allocation decisions, such as the mix of debt and equity in the firm, the level of dividends, and the timing and extent of stock repurchases.

From these beliefs flow a set of legal principles. One principle holds that the market for corporate control should be unburdened by rules of timing, disclosure, payment, or other tilts in the playing field. Fiduciary duties could be relied upon in quite weak forms to police those rare managers who somehow escape the clutches of market discipline to act contrary to the corporation's and shareholders' interests. Broad deference could be given to director decisions on the whole range of capital decisions. Concern over the type and timing of company disclosure, and even the principles of accounting applied in preparing financial statements, could be limited because the activity of the efficient market and its participants will pierce these, getting at the real truth and reflecting it in market price. On the other side, investors could be presumed to rely upon misleading managerial statements when, in fact, they are relying solely on market price. When it turns out that managerial statements were false, judges could presume that an investor relied on stock price as a reflection of managerial statements without the need to ask whether the investor actually did rely on these statements.

The efficient market idea, and the set of cultural norms and legal principles that these examples typify, dominated thought and practice in the field of financial economics and corporate law, starting in the 1960s. This continued with undiminished zeal through the late 1980s. Although the zeal abated as the 1990s progressed, and today many more skeptics voice doubt as to the validity of these ideas, the theory of efficient markets and its implications remain widely embraced, and the legal culture that those ideas spawned remains endowed with its teachings.

Recently, a subdiscipline of behavioral economics has blossomed, enervating the thirty-year-old tenets of the efficient market story. Called behavioral finance, this discipline rests on two foundations. The first holds that a substantial amount of stock pricing is performed by investors who do not accurately perceive underlying business values and hence produce prices that do not reflect those values. Investor sentiment, rather than rational economic calculation, contributes significantly to price formation. The second holds that even those investors who do accurately perceive underlying

business values will not always step in to offset the sentiments of those who do not because they face risks too great for such an undertaking. This limited arbitrage, when coupled with investor sentiment, yields pricing that does not equate to value, and the managerial report card seen in prices turns out often to be inaccurate, even if it remains translucent.

In the world of behavioral finance, no longer can the social or legal culture be content to rely upon market mechanisms to do the work of managerial discipline. Neither the market for corporate control nor that for managerial labor is as potent in the behavioral finance story as it was in the world where efficient stock markets ruled. Fiduciary duties, disclosure, and accounting play an important role in holding managerial feet to the fire. Capital structure and allocation decisions are far more flexible and unrestrained; dividend policy, the debt/equity mix, and stock repurchases all matter as substantive decisions and manifestations of managerial probity and intelligence. As under the efficient market theory, investors may justly rely upon market prices in allocating their investment capital. That reliance, however, remains functionally irrelevant to legal questions concerning whether a management that misleads investors should be found liable even to investors who do not directly rely on misleading information.

Commentators have predicted the death of the efficient market idea for a number of years, but the idea has held onto breath even as research steadily reveals its fatal infirmities. Dozens of law review articles have exposed evidence from economics and finance scholarship showing the demise of the efficient market story, yet scores more articles proceed with at least tacit acceptance of its force and implications. My contribution to these discussions alerted corporate law scholars to the decay of the efficient market idea wrought by studies in behavioral finance of the early 1990s. Further, I advanced an intellectual history of the model that showed that it was heading for a dead end.[3] This piece is a continuation of that story, with subsequent and stronger evidence that the model is poor grounds for legal policy formulation and a broader account of the implications of that conclusion.

Part II presents a study of behavioral finance as to how prices of stocks are formed, including a theoretical framework, empirical evidence, and psychological explanations. It integrates these materials into a model of market and investor behavior that can be used as a lens through which to analyze a wide variety of legal rules and policies bearing on market regulation and corporate governance.

Based on the implications of Part II's account of market and investor behavior, Part III offers a series of prescriptions relating to investor gover-

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3. Lawrence A. Cunningham, *From Random Walks to Chaotic Crashes: The Linear Genealogy of the Efficient Capital Market Hypothesis*, 62 GEO. WASH. L. REV. 546 (1994).

nance.[4] It starts with a proposal to promote and expand investor education concerning the cognitive biases that behavioral finance exposes. It then proposes reforms in three critical areas of law and policy that this model impacts: (1) the market regulatory environment in which investors participate, including suitability and churning rules and policies relating to day trading, margin trading, and circuit breakers; (2) the legal duties of boards of directors in making capital allocation decisions such as equity offerings, dividend distributions, and stock acquisitions; and (3) issues in corporate and securities litigation, principally the reliance requirement in securities-fraud cases and the stock market exception to the appraisal remedy in cash-out mergers.

The efficient market idea stands as an aspiration worth pursuing, but one never likely to be realized. This calls for prescriptions that operate both to push the reality toward the ideal and to deal with the gap that will persist. This Article has a major public policy subtext as well; at stake in the discussion of how prices are formed is the overarching question of capital allocation. Society is better off in terms of aggregate wealth when its resources are allocated to those best able to deploy them. Investors allocating capital based on rational calculation will produce that result, whereas those allocating based on sentiment will not.[5] Attention to this difference is also important to the

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4. Investor education is the central feature of what I call "investor governance," a name given to distinguish this piece and its approach from two emerging branches of the literature to date. The first has tended to focus on manager actions. *See, e.g.*, Donald C. Langevoort, *Organized Illusions: A Behavioral Theory of Why Corporations Mislead Stock Market Investors*, 146 U. PA. L. REV. 101, 104 (1998) [hereinafter Langevoort, *Organized Illusions*] (noting general optimism reflected in managerial rationality); Donald C. Langevoort, *The Human Nature of Corporate Boards: Law, Norms, and the Unintended Consequences of Independence and Accountability*, 89 GEO. L. J. 797, 798-803 (2001) [hereinafter Langevoort, *The Human Nature of Corporate Boards*] (addressing effects of human fallibility on corporate decisionmaking); Jeffrey Rachlinski, *A Positive Psychological Theory of Judging in Hindsight*, 65 U. CHI. L. REV. 571, 575 (1998) (suggesting that current regulations and judicial policies leave investors exposed to unacceptable levels of managerial incompetence). The second argues for regulation of investors, which this piece rejects in favor of education of investors. *See, e.g.*, Stephen Choi, *Regulating Investors, Not Issuers: A Market-Based Proposal*, 88 CAL. L. REV. 279, 288-92 (2000) (suggesting various solutions to managerial agency problems).

5. *See, e.g.*, Marcel Kahan, *Securities Laws and the Social Costs of "Inaccurate" Stock Prices*, 41 DUKE L.J. 977, 1005-16 (1991) (noting rational outcomes of calculated investing versus sentiment-based investing). Stock markets are a means of allocating capital. Social wealth is greatest when capital is allocated to its most productive uses. Prices that equal underlying values will effect that allocation best. Prices that deviate from values will misallocate to the extent of the difference. The social cost of misallocated capital is a multiple of the foregone opportunities that properly allocated capital would have generated. Additional costs result from the increased risk investors face in misallocations. That increased risk will discourage investment, lead investors to demand a higher rate of return, increase the cost of capital, decrease its supply, and drain overall economic horsepower.

distributive question, not only because a smaller pie will yield less for certain groups, but because a skewed allocation can widen the gap between rich and poor. Proper pricing – or at least an understanding that improper pricing may exist and why – is thus a transcendent social question, not merely a tiny corner of scholarship in law and behavioral economics.[6]

II. Behavioral Finance

The efficient market hypothesis (EMH) contends that prices of securities in public capital markets always reflect all available information about the underlying businesses they represent. The theory has been described as "dazzling" and as an "enormous theoretical and empirical success."[7] The entire field of academic finance was created on its basis, starting in the economics department of the University of Chicago, spreading to virtually every university in the country, and ultimately penetrating trading-, board-, court-, and classrooms worldwide. Despite that success, the EMH has always suffered from theoretical and empirical limitations or exceptions, which of late have come to consume it. In its wake stands behavioral finance as a rival account of capital markets.

A. Foundations and Legal Import of the Efficient Capital Market Hypothesis

The theoretical foundations of the EMH were laid by Paul Samuelson[8] and Benoit Mandelbrot.[9] In essence, they supposed that investors act rationally in making the investment decisions that result in stock price changes and levels. The consequences are equivalence between price and value and a

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6. Proper pricing means prices approximately equal to values, with value defined as the present value of the cash flows that a corporation is estimated to generate from the date of calculation to the infinite horizon period. Value in this model is thus determinate as a theoretical and philosophical matter (although the calculation in practice remains fraught with judgments). The term "proper pricing" thus equates to value, but this should not be seen to constitute a conflation of the two in a philosophical sense. *Cf.* Kyron Huigens, *Law, Economics, and the Skeleton of Value Fallacy*, 89 CAL. L. REV. 537 (2001) (book review) (criticizing traditional and behavioral law and economics on philosophical grounds that value is intransitive and incommensurable and, therefore, has ineluctable "tragic dimension" not accounted for in price, rendering economic analysis of law both impossible and useless).

7. ANDREI SHLEIFER, INEFFICIENT MARKETS: AN INTRODUCTION TO BEHAVIORAL FINANCE 1 (2000).

8. *See* Paul A. Samuelson, *Proof That Properly Anticipated Prices Fluctuate Randomly*, 6 INDUS. MGMT. REV. 41, 48 (1965) (relating origins of EMH).

9. *See* Benoit Mandelbrot, *Forecasts of Future Prices, Unbiased Markets, and Martingale Models*, 39 J. BUS. 242, 248 (1966) (expanding original notions of EMH).

random element to the process of price formation that renders impossible predictions of future price movements or earnings systematically higher than normal returns.

Rationality does not have to be complete, however, and the model allows for the participation of nonrational or irrational persons. Although their contributions would have the tendency to push prices away from values, such deviations would not persist due to arbitrage by the rational participants, whose trading would restore the price-value correlation and reinforce the basic conclusions of the model.

Eugene Fama laid the EMH's empirical foundations, starting with the proposition that stale information about a company was of no value to a stock trader.[10] He hypothesized that an investor cannot use dated information on prices, public disclosures, and maybe even privileged data to make money in the stock market. The price instantly absorbs such information as traders act on the information. Once absorbed, such information gives an investor no advantage. There existed a sort of noncontroversial and commonsensical appeal to this proposition (except maybe with respect to privileged information), but the harder empirical question asked what an "advantage" to an investor meant.

Obviously people can make money in the stock market by analyzing information, but the key empirical point of the EMH held that investors could not use stale information to earn a higher return than mere compensation for bearing the risk of the investment. Risk was adjusted for the EMH by a pricing model, most famously by the "capital asset pricing model" (CAPM), which specified the risk associated with each stock. The empirical claim held that no investor can use stale information to get returns greater than justified by the associated risk that the CAPM defined for the investment.

The theoretical and empirical foundations of the EMH were powerful, constituting a major academic success story. Scores of bright young economists were given tenure, and about a dozen of their elders were awarded Nobel prizes. Triumphantly congratulating one of the pioneers, Michael Jensen announced in the early 1980s that the EMH was the best established fact in all the social sciences. It was not an overly broad claim at the time perhaps, but with the passing of the years and the emergence of newer studies, one continues to wonder whether the claim said more about the social sciences than it did about the EMH.

Among legal scholars, the EMH became so dominant by the mid-1980s that two leading corporate law teachers announced that it was *the* context in

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10. *See* Eugene Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383, 392 (1970) (analyzing time lag on value of information to investors).

which to discuss markets and their regulation.[11] Some legal rules were expressly linked to the theory, especially the stock market exception to the appraisal remedy, the fraud-on-the-market theory, and event study techniques for measuring damages in securities-fraud cases.[12] Others were more loosely or rhetorically based on it, such as the SEC's integrated disclosure system initiative and its shelf registration rules.[13]

Aside from these particularizations, the EMH exemplified the most successful constructs and applications of law and economics generally. The chief reason for this success was that of all the places where theoretical rational actors gather to produce results that look highly rational – whether in contracts, property, or courtrooms – it was in the public capital markets that they did so with greatest plausibility.[14] As a result, discussions of a whole range of topics in corporate and securities law went forward based on the assumptions of the EMH, if not an express articulation of its premises. This privileged position remains a fixture of the culture of business law scholarship, even if its infallibility has declined as legal scholars have digested the challenges to the EMH uncovered by behavioral economists.

B. Challenges to the Efficient Capital Market Hypothesis

Theoretical challenges to the EMH question the assumed rationality of investors. Drawing on the pioneering work of cognitive psychologists Amos Tversky and Daniel Kahnemanin during the 1970s, by the mid-1980s economists speculated that many traders act, not on information, but on hunch, and that the market absorbs rationality of calculation no more than it does mere noise.[15] More recent theorizing on investor behavior has considered the nature of investor attitudes towards risk and explanations of investors' preference for

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11. *See* Ronald Gilson & Renier Kraakman, *The Mechanisms of Market Efficiency*, 70 VA. L. REV. 549, 550 (1984) (rejecting other market theories in favor of EMH).

12. *See* Langevoort, *supra* note 2, at 873-89 (noting EMH's ripple effect through legal circles).

13. *See* Lawrence A. Cunningham, *Capital Market Theory, Mandatory Disclosure and Price Discovery*, 51 WASH. & LEE L. REV. 843, 859 (1994) (examining disclosure system regulations based on EMH).

14. This plausibility is shown by the unusual degree to which capital markets meet some of the assumptions necessary to sustain the economist's "perfect market." The "perfect market" requires that there are a large number of participants such that the actions of any individual participant cannot materially affect the market; participants are fully informed, have equal access to the market, and act rationally; the commodity is homogeneous; and there are no transaction costs. *See, e.g.*, PAUL A. SAMUELSON, ECONOMICS 43, 56 (10th ed. 1976) (hypothesizing about existence and functionality of imperfect markets).

15. *E.g.*, Fisher Black, *Noise*, 41 J. FIN. 529, 529-31 (1986).

attention and memory over probabilistic analysis; further, researchers have considered how the influences of autonomous brain activity can produce judgments outside of a person's awareness.[16]

In terms of assessing risk, investors tend not to look at levels of final wealth attainable but at gains or losses *relative to a reference point*.[17] The path can be more important than the end. When considering the assumption of risk, people display *loss aversion*, a tendency to place an asymmetrically greater weight on losses than on gains.[18] Investors epitomize this aversion in their reluctance to sell stocks that have suffered substantial losses[19] and in the

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16. The first two of these form the basis of the model that follows; the third is not implicated by the model, but is taken up as a separate series of phenomena more localized in the Part that follows.

17. Take, for example, a situation in which alternative end states are identical but methods of getting there differ, and people systematically opt for one rather than the other.

> Option A: Suppose you are richer by $20,000 than you are now, and pick from the following choices: (1) receive $5,000 or (2) receive a 50% chance of winning $10,000 (and a 50% chance of winning nothing).
>
> Option B: Suppose you are richer by $30,000 than you are now, and pick from the following choices: (1) forfeit $5,000 or (2) take a 50% chance of losing $10,000 (and a 50% chance of losing nothing).

In terms of end states, the problems are identical; in each the expected value of choice (1) is a position $25,000 richer than you are (in Option A, $20,000 + $5,000 and in Option B, $30,000 - $5,000), and the expected value of choice (2) is also $25,000 (you end up with either $20,000 or $30,000 with equal probabilities). Most people see these choices as being quite different – and not because of the suppositions about being richer by either amount, but because of the routes to the end. Among those inclined to gamble on either choice, the tendency is to gamble on the downside (picking the gamble that includes possibly losing nothing) and to pick the sure thing on the upside (picking the cash despite the possibility of gaining more). These choices also illustrate the phenomenon of frame dependence, discussed below. *See* LAWRENCE A. CUNNINGHAM, OUTSMARTING THE SMART MONEY 32-37 (2002) (providing examples of psychological impact of situation on investor behavior); Daniel Kahneman & Mark W. Riepe, *Aspects of Investor Psychology*, 24 J. PORT. MGMT. 52, 56-57 (1998) (same).

This description of investor behavior also applies to manager behavior in evaluating potential acquisition transactions discussed in Part III.B.

18. For example, when asked how much they would have to stand to gain from the flip of a coin turning up heads in order to take a bet that if it comes up tails they would pay $100, people tend to cite a range from $200 to $250. Kahneman & Riepe, *supra* note 17. In economic terms, they exhibit a loss function steeper than a gain function. SHLEIFER, *supra* note 7, at 11.

19. Terrance Odean, *Are Investors Reluctant to Realize Their Losses?*, 53 J. FIN. 1775, 1776-80 (1998). One sort of loss aversion is the *disposition effect*, a tendency to experience greater unhappiness when the value of something one owns falls than the corollary happiness one experiences when its value rises proportionally. CUNNINGHAM, *supra* note 17, at 25-28. Another variant on loss aversion is the *endowment effect*, a tendency to place a higher value on things one already owns (naming a selling price for a stock in one's portfolio, say) compared to things owned by others (naming a buying price for a stock not in one's portfolio). *Id.*; *see*

puzzlingly high premium returns attributable to investments in equity compared to fixed-income securities.[20]

Related to the way reference points are created is how they influence solutions. People make different decisions depending on the framing of the problem.[21] This frame dependence manifests itself in the observed tendency of experimental subjects to allocate more to stocks when they are shown long-term histories of high returns than when they are shown short-term histories of substantial price volatility.[22]

Attention and memory capabilities are often incorrect, but people rely on them to such a degree as to suggest that they believe these capabilities are infallible. Thus, people constantly violate probability theory, including basic principles of Bayesian logic and statistics.[23] One tendency is to predict by

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also Daniel Kahneman et al., *Experimental Tests of the Endowment Effect and the Coase Theorem*, 98 J. POL. ECON. 1325, 1331-34 (1990) (explaining aspects of "endowment effect").

A different explanation for loss aversion, at least of the endowment effect variety, is more consistent with rational choice theory. It is simply that this preference differential reflects social norms oriented toward bargaining in which bidding low and selling high are standard. The parties with mugs have differentiated goods, whereas those with cash have the currency of the realm by which everything else in exchange is measured. They are buyers and sellers. Sellers sell high; buyers buy low. Another explanation is that experiments such as these tend to be performed on people with experience as buyers but not as sellers (often the subjects are university students), raising some question as to whether the results generalize to actual market behavior. *See* Richard A. Posner, *Rational Choice, Behavioral Economics and the Law*, 50 STAN. L. REV. 1551, 1556 (1998) (discussing contextual issues of "bounded willpower").

20. The equity risk premium puzzle refers to the observed differential, compared to bonds, of the actual return on stock investments over long time periods above that predicted by economic theories and asset pricing models associated with the efficient market hypothesis. The puzzle generated legions of scholarship within the EMH tradition without any satisfactory solution, although upon adopting a behavioral finance perspective the puzzle dissolves; investors hold risk appetites that differ from those postulated by the EMH and its theoretical cognates. *See* Shlomo Benartzi & Richard H. Thaler, *Myopic Loss Aversion and the Equity Risk Premium Puzzle*, 110 Q. J. ECON. 73, 73-76 (1995) (arguing that returns on stocks and bonds are explainable in terms of risk aversion without any premium "puzzle"). In particular, it is true that stocks are riskier than bonds in terms of repayment of principal and of income generation but not so much riskier as to justify the historical average difference of 6% in actual returns on these two asset classes. Rather, that substantial spread is attributable to investor loss aversion, which gives greater weight to losses than to gains, a weight in this case greater by about 2.5 times. *Id.* at 78.

21. *See generally* Amos Tversky & Daniel Kahneman, *The Framing of Decisions and the Psychology of Choice*, 211 SCIENCE 453 (1981); *see also* CUNNINGHAM, *supra* note 17, at 32-37 (noting various roles of investor mindset).

22. *Cf.* Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1534 (1998) (discussing effective methods of introducing information to calculating investors).

23. Rational choice theory says that in order to choose from among uncertain prospects,

projecting a long future pattern based on a short recent history rather than to realize that the short recent history could be due to chance rather than to any emerging pattern. A good example is the late 1990s tendency to interpret several years, or even quarters, of earnings growth as portending high rates of earnings growth for years to come.

These tendencies and numerous related biases[24] may exist across all groups of investors, from do-it-yourself individuals to sophisticated hedge fund managers.[25] If so, these tendencies would undercut claims that nonrational investors are canceled out by rational investors. On the contrary, it is possible that these nonrational tendencies are imitated by other investors and the biases instantiated.[26] This is especially possible when investors act as agent rather than principal and therefore worry more about the measure of their performance against their institutional peers. This promotes distortion rather than enabling investors to offset the noise.[27] Nor can arbitrageurs be

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one must determine the probability of each possible outcome, assign a value to each, and choose the outcome with the highest product of probability times value. Practical decisionmaking by actual people operating on intuition does not follow the theory's prescription. Those that come the closest might be the scrawl of Charles Darwin concerning the pros and cons of choosing to marry versus not to marry. CHARLES DARWIN, THE AUTOBIOGRAPHY OF CHARLES DARWIN, 1809-1882 (N. Barlow ed., 1969) (first published 1887). Further, the letter of Ben Franklin to Joseph Priestly describes "moral algebra," the process of recording on a sheet of paper the pros and cons of a decision over a period of several days before choosing. BENJAMIN FRANKLIN, WRITINGS (1987) (first written Sept. 19, 1772); CUNNINGHAM, *supra* note 17, at 181-83. Even so, results of such pragmatic approaches vary from those prescribed by rational choice theory. For example, people will pay more to increase the probability of an uncertain event from, say, 0% to 1% or from 99% to 100% than they will to increase it from, say, 41% to 42%. This is despite the fact that in each case all they are getting is a 1% increase in probability, but somehow it looks better to get a possibility (however slim) of something rather than nothing at all or a sure thing over an almost sure thing than it is to boost your odds by an increment to a point not much different descriptively from where you were before. *See* Kahneman & Riepe, *supra* note 17, at 56.

24. Related biases discussed below include availability bias, the self-serving beliefs bias, the commitment bias, and overconfidence; a few not discussed in this Article, but which I have discussed elsewhere, are cognitive dissonance, rationalization, and mental accounts. CUNNINGHAM, *supra* note 17, at 23-40.

25. For a chronicling of cognitive errors displayed by various Nobel prize-winning hedge fund managers and their colleagues, see ROGER LOWENSTEIN, WHEN GENIUS FAILED: THE RISE AND FALL OF LONG-TERM CAPITAL MANAGEMENT (2000). I explain more about this episode in CUNNINGHAM, *supra* note 17, at 45-49.

26. *See* SHLEIFER, *supra* note 7, at 12 (observing that adverse consequences of investor biases are exacerbated when traders "behave socially and follow each other's mistakes by listening to rumors or imitating their neighbors").

27. For example, institutional investors acting as agents for individuals may choose portfolios close to the benchmark of evaluation like the S&P 500 Index. They may herd to avoid

counted on. Effective arbitrage requires close substitutes for the good being arbitraged, and there are not always close (and hardly ever perfect) substitutes for securities.[28]

The empirical challenges to the EMH were pioneered as early as 1981 by Robert Shiller, who showed that there is too much price volatility for the EMH to hold true.[29] The studies continued, challenging the EMH at its every level. As to its claim that past prices give no profitable trading advantage (called weak form efficiency), evidence comparing the performance of winning and losing portfolios shows that losers do far better and winners far worse than standard risk models (like CAPM) explain.[30]

Further, anomalies galore infect the EMH's claim about public information (called semi-strong form efficiency). Stocks of smaller companies tend to outperform those of large companies. The January effect describes how prices tend to rise in January. And the *piece de resistance*, highly priced stocks, those measured in accounting ratios such as the market-to-book ratio, get lower average returns in the future than those with lower prices.[31] Ratios

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falling behind one another by picking the same stocks as each other. They can add window dressing right before year-end reports are issued by adding stocks that have gained and dumping those that have lagged. Such machinations produce trades that probably have worse effects on price-value relationships than the effects of simple noise trading.

28. At the local level of individual stocks or bonds, arbitrageurs need close substitutes for the things the noise traders trade, such as futures or options, and at the broadest level, they need all-out market indexes like the S&P 500. Although there may be some functional substitutes in the former case, they are simply absent in the latter. In other words, if the S&P 500 in aggregate is mispriced, there is virtually nothing any trader can do to correct it because there are no substitutes for it.

Even close substitutes are often not close enough. The case of so-called Siamese twins illustrates this point. These are companies in joint ventures with specified economic and governance rights whose shares trade in separate markets. Examples include Unilever and Royal Dutch Shell. Under the EMH, the respective shares should trade in proportion to the rights, adjusted for any differential tax treatment, but they don't. Kenneth A. Froot & Emil M. Dabora, *How Are Stock Prices Affected by the Location of Trade?*, 53 J. FIN. ECON. 189, 191-93 (1999); Colin Young & Leonard Rosenthal, *The Seemingly Anomalous Price Behavior of Royal Dutch Shell and Unilever nv/plc*, 26 J. FIN. ECON. 123, 125-26 (1990).

29. *See generally* ROBERT SHILLER, MARKET VOLATILITY (1989) (describing effect of market volatility on EMH theoretical underpinnings).

30. *See, e.g.*, Warner DeBondt & Richard H. Thaler, *Does the Stock Market Overreact?*, 40 J. FIN. 793, 793-805 (1985) (comparing cumulative average results for winner and loser portfolios formed based on three-year prior periods and looking at next five years).

31. These categories of stocks are sometimes called, respectively, growth and value stocks, but these labels are essentially meaningless and should be deleted from the lexicon. *See* LAWRENCE A. CUNNINGHAM, THE ESSAYS OF WARREN BUFFETT: LESSONS FOR CORPORATE LAWYERS 1-34 (1997) (defining and discounting trade market terms familiar yet misleading to investors).

like those constitute stale information, yet these observations suggest that it is possible to get superior returns by buying the lower-priced stocks.

Concerning the more general EMH claim that there should be no reactions to noninformation, it is common to note that the stock market crash of 1987 continues to have no identifiable justifying cause, nor do virtually any other major market moves of dramatic proportions.[32] It will become common to note that the huge gyrations in all market indexes in the late 1990s and early 2000s cannot be explained in terms of fundamental changes either. Evidence shows that many sorts of stock price movements cannot be explained in terms of changes in information about the related businesses.[33] Finally, consider that stocks selected for inclusion in a major stock index – such as the Standard & Poor's 500, for example – tend to enjoy a price increase even though the inclusion alters nothing about their future business performance.[34]

Criticisms of these rebukes to the EMH advance on a variety of grounds. The chief challenge is in terms of the proper adjustment for risk. Perhaps, the observation that low-priced stocks outperform high-priced stocks is due to the fact that the former are riskier than the latter. However that may be, it seems in tension with common sense. Other critics allege data mining, sample selection biases, failure to account for trading costs, and other potential research defects.[35] Regardless, it remains difficult to deny the power of the increasing scope and magnitude of this research field.

Legal scholars and other analysts of public policy must recognize the importance of this new research field. The cautionary bell sounded against the EMH has been rung before, and many investors appear to be listening.[36] Yet the attraction of the EMH's simplicity and elegance remains, not only among scholars, but also among courts and regulators.[37] One reason for the time lag between the output of economic scholarship and its absorption by lawyers may be the current lack of a coherent model of market behavior that accounts for and incorporates criticisms of the EMH. Much of the economics literature

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32. SHILLER, *supra* note 29; ROBERT SHILLER, IRRATIONAL EXUBERANCE (2000).

33. Richard Roll first showed that orange juice price changes were not fully explained by changes in weather. Richard Roll, *Orange Juice and Weather*, 74 AM. ECON. REV. 861, 865-71 (1984). He later adapted that analysis to show that stock price movements are largely unaccounted for either by news about them or by changes in the price of potential substitutes. Richard Roll, R^2, 43 J. FIN. 541, 542-50 (1988).

34. *See* SHLEIFER *supra* note 7, at 21-23 (giving example of America Online, which was added to S&P 500 Index in December 1998 and whose stock price promptly jumped 18%).

35. *See generally id.*

36. *E.g.*, Langevoort, *supra* note 2, at 867-72; Cunningham, *supra* note 3, at 563-71.

37. *See infra* Part III (discussing how EMH assumptions permeate much of corporate and securities law).

critiquing the EMH demonstrated weaknesses or anomalies in the model rather than developing an integrated alternative view. Researchers have started to fill that void, however, and the next subpart demonstrates a version of the model that will be useful to corporate and securities law scholars as well as policymakers in evaluating a range of rules and the assumptions on which they are grounded.

C. An Alternative General Model

These theoretical and empirical challenges to the EMH have been combined and deepened in the broader context of well-known behavioral phenomena. These traits can be seen in action in market behavior that we observe. When synthesized, they offer an attractive and general account of a range of typical market activities that the EMH struggles to explain.

1. Elements[38]

The late Fischer Black, an outsider to the economics profession whose formal training was in math and physics, developed a theory in the mid-1980s based on the idea that ill-informed traders (called "noise" traders) populated the market. This was a major intellectual challenge, given the dominance of efficiency theory at the time. In the noise-trader model, ill-informed traders cause mispricing of stocks and a risk for arbitrageurs that leaves mispricing in place. The trouble with Black's model was that it reached too far, providing an explanation for any kind of trading imaginable, whether or not it occurred. A better model would explain only those things that are actually observed.

Researchers building on Black's insights developed a more refined model called the "positive feedback model." Markets experience momentum, the researchers found, when new purchases are made based on recent purchases and new sales are made based on recent sales. Price changes in one direction bring pressure in that direction. This model captures the psychological phenomenon of "extrapolating trends," the notion of assuming that trends that have progressed a certain way for a period will keep going that way a while longer.

Although useful to describe extraordinary market phenomena such as bubbles and breaks, the noise-trader and positive feedback models do not address the more routine shifts between the continuation (and chasing) of trends and the correction. Refinements would also need to explain short-term continuations met by ultimate reversals.

More dynamic accounts attempt to explain both the extraordinary bubble-break phenomena and the quotidian cycles. These models are built on the

38. This section appears in slightly different form in chapter four of my book, OUTSMARTING THE SMART MONEY, *supra* note 17.

premise that investors hold mistaken beliefs and make bad judgments – the behavioral finance story. Dynamic market accounts explain shifts between investor underreaction and overreaction. The main model begins by viewing investors as sharing mistaken beliefs and bad judgment. The dominant psychological forces at play are the status quo bias and the pattern-seeking bias, along with a hefty dose of overconfidence. Investors learn about their performance and what they are capable of doing in biased, self-promoting ways.

When they digest information to form a judgment, investors are not entirely sure of the precision of their analysis, but consider it reliable enough to be a basis for action. Subsequent news either confirms or refutes their judgment. Investors pat themselves on the back too much and kick themselves too little. News that confirms the judgment is seen as so powerful that investors become more confident in their ability than is justified. When news refutes the judgment, confidence wavers, but less than warranted. So bad news breeds conservatism, and good news breeds pattern seeking.

There are two versions of the "shared mistaken beliefs" models. In one, individuals digest company news as favorable, buy its stock, and see the price rise.[39] As new information arrives that seems to confirm the accuracy of the judgment, the price rises further. Many participants do the same thing, pushing price ahead of the increase that the news justified. Investors begin to see that. A return to a more reasonable self-perception ensues, and the price settles back to a level more in line with the news. There is a smoothness to the process of this hump-shaped price evolution, yielding short-term positive price trends met by long-term reversals.

This model's insight concerning the interplay of the status quo bias with pattern seeking is corroborated by a standard experiment using the toss of a coin that is known to be loaded and therefore biased. A researcher tells the player that the coin has either a 70% chance of heads or a 70% chance of tails rather than the usual 50-50 chance of either. A clear-thinking player would start off by assigning a 50-50 chance to either bias, heads or tails. As the coin is flipped and keeps coming up heads flip after flip, a detached, calculated updating would adjust the 50-50 chance incrementally, such as 53-47, then 57-43, then 61-39, then 67-33. Players in this experiment adjust, but not in accord with probabilities. Also, their errors are on the low side at the outset and move to the high side by the end. The first few adjustments are too small (51-49, then 55-45, for instance), showing conservatism and underreaction. Succeed-

39. *See* Kent Daniel et al., *Investor Psychology and Security Market Under- and Over-reactions*, 53 J. FIN. 1839, 1841-49 (1998) (examining variations caused by "biased self-attribution").

ing adjustments are too great (62-38, then 69-31, for instance), showing pattern seeking and overreaction.

The propensity of people to overlook basic lessons from statistics supports this model. When two variables are imperfectly related, extreme values on one tend to be matched by less extreme values on the other. As examples, tall parents on average have tall children but not as tall as they are; straight A high school students tend to do well in college but not quite as well as they did in high school (on average); and a company's low profit years tend to be followed by better ones and vice versa. In investing, people often get this last example backwards. Instead they believe they see trends stretching into future quarters after witnessing steady profit increases in each of the prior three quarters.

In the second version of the shared mistaken beliefs model, underreaction and overreaction are explained by a more involved story.[40] This story supposes earnings of a particular company (or all companies) to be random. Earnings could be up one quarter, or down, just as the flipping of a coin could be heads or tails. But investors don't fully understand probability theory and tend to substitute rules of thumb. If investors view the world this way, then it would be no surprise for them to believe (wrongly) that an earnings-trend reverse – say a series of ten-cent increases followed by a five-cent decline – signals a normal reality check (reversion to the mean). They thus underreact to the news, exhibiting status quo bias (conservatism).[41]

The result is underreaction during short horizons and overreaction longer term. As with the hump-shaped picture in the first version of this model, the process can be quite smooth. It is also the case that the same misperceptions that drive momentum in one direction drive the longer-term reversal. That means stocks with the largest pricing momentum should get the largest pricing reversal and that stocks of businesses facing greater uncertainty should register more mispricing.

Other cognitive biases supplement this model of investor behavior. First, people who have chosen a voluntary course of action tend to resist evidence

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40. *See* SHLEIFER, *supra* note 7, at 129-30 (analyzing effects of random occurrences on investor rationale).

41. Another experiment supports the insight that investors mistake the randomness of corporate earnings and prices for predictable patterns alternating between trends and reversals. MBA students were asked to make predictions of the future direction of various series. Some series exhibited sequences of continuations in earnings or price (such as $1, $2, $4, $7, $8) and others sequences of reversals (such as $2, $1, $4, $8, $6). People underreacted to the reversals (seeing the shift from $2 to $1, for example, as a return to normalcy) and overreacted to the continuations (seeing them as a sign of things to come). *See* Nicholas Barberis et al., *A Model of Investor Sentiment*, 49 J. FIN. ECON. 307, 310-32 (1998) (presenting model of how investors form beliefs consistent with empirical findings).

that it was ill-chosen. This *commitment* bias entails an unconscious shift in attitudes and beliefs to preserve consistency with the original decision. It reinforces the conservatism, or status quo bias, of individual investors who have purchased a particular stock. It also helps to explain why people cling to stocks whose fundamentals have obviously deteriorated.

Second, people tend to develop *self-serving beliefs*, making inferences from new data that enable them to see what they want to see. This bias reinforces both the underreaction to news associated with conservatism and the overreaction to cumulated recurring news associated with representativeness. In each case, the bias causes investors to see small changes as of low relevance and a series of them as having great relevance.

Third, *overconfidence* bias pertains to the pervasive tendency of people to think that they know more than they do and otherwise to overrate their own abilities.[42] Common examples are that eighty percent of drivers think they are better than average drivers, and despite a divorce rate of fifty percent newly married couples invariably believe that they will beat the odds. For investors, overconfidence bias manifests itself in the tendency to construe investing success as confirmation of their own abilities even when the results are not due to any particular research, insight, or skill. This bias includes a tendency to underestimate the role that chance or luck played in the process and is often coupled with the *commitment* and *self-serving beliefs* biases just noted.[43]

Reinforcing these biases and their effects is the *availability* bias. This describes the tendency of people to overweight events or circumstances that are at one's fingertips, as it were, be they recent, or well-publicized, or traumatic, or vivid. The risk of unprovoked shark attacks on humans, for example, remains far lower than commonly thought or than portrayed in the news media. Likewise, the risk of homicidal death is far lower than death from diabetes or stomach cancer, yet surveys routinely show that people believe the opposite. This impressionistic behavior helps explain the appeal of sector funds and other capital allocation decisions that appear upon rational reflection to make little sense. Recall the late 1990s, when the Internet was the fetish of conversation and investors flocked to tech companies in droves.

2. Interplay

The interplay of various cognitive biases shows familiar patterns of price formation. One commonly observed phenomenon in market pricing histories

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42. *See* SHILLER, *supra* note 32, at 142 (detailing causes of overconfidence in investors).

43. Notably, these biases are asymmetric: positive events are seen as the product of one's skill and ability whereas negative events are seen as due to external forces. This difference is seen less often in individuals who are more risk seeking than risk averse. Kahneman & Riepe, *supra* note 17, at 63.

is the occurrence of short-term trends followed by longer run trend reversals.[44] The short-term trends are a product of underreaction to individual bits of information not seen as significant and are explained by the conservatism bias (the slow updating of beliefs in the face of new information). The longer term reversals of those trends are a product of overreaction to cumulated bits of information perceived as manifesting conspicuous patterns and are explained by the representative heuristic.

These trends and reversals pose undesirable price-value deviations that, although not cataclysmic, distort the capital allocation process. Other combinations of these biases can have devastating effects. Overconfidence plus representativeness, for example, can lead to feedback loop bubbles in prices. Feedback loops describe a category of observed investment phenomena including instances of price momentum, in which prices continue moving persistently in the same direction despite either no or opposite changes in fundamentals.

As prices drive upward, investors who recently bought those stocks see their judgment as being vindicated, forming beliefs about their expertise. As the prices move yet higher, investors detect a pattern of price increases. Overconfidence confirms the trend: more buying ensues and other biases – commitment and self-serving beliefs – reinforce each other in an upward spiral, or bubble.

There are, of course, separate and external causes to the spirals caused by overconfidence and representativeness. These include investors chasing trends or chasing each other. These loops can be fed by rumor, widespread publicity attendant to new technologies,[45] or other social forces that trigger the availability bias. They produce cascading chain reactions that reinforce each successive link. These reactions often lure substantial numbers of new investors to the market, increase the dollar amount of new and borrowed funds invested, and force uptrading volume and price volatility.

Technical trading strategies adopted by some investors often exacerbate feedback loops. These strategies include stop-loss orders that automatically trigger selling on price declines and margin calls that result in the involuntary liquidation of all or part of a leveraged portfolio in a declining market. A conspicuous example of a feedback-loop aggravator was the so-called portfolio insurance popular among institutional investors in the 1980s before the crash of 1987. A portfolio insurance program known as a "programmed

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44. *See* SHLEIFER, *supra* note 7, at 112 (noting roles of trends in establishing investor expectations).

45. For a recent example, look to biotechnology stocks in the early 1990s or Internet stocks in the late 1990s.

trading directive" (much like a stop-loss order but on a vaster scale) commanded the selling of stocks as their prices fell. Cascades resulted; as the falling prices triggered the "insurance" sale, prices fell further in a downward spiral.

More generally, an entire class of investment phenomena rooted in the cognitive biases just discussed and called *extrapolative expectations* can set in when price declines (or rises) lead to expectations of further price declines (or rises). The expectations then become self-fulfilling prophecies. Narrative histories of price bubbles throughout financial history show this pattern repeatedly.

For several reasons, sophisticated traders cannot eliminate the price-value discrepancies this behavior creates. First, all investors, even sophisticated traders, suffer from these biases to some degree. Second, even rational traders cannot escape the wrath of the biased errors. Third, securities lack good substitutes that enable the kind of risk arbitrage that perfectly – or even substantially – efficient markets require. Fourth, in these patterns it becomes a rational choice for arbitrageurs and other "smart money" to join the crowd rather than to try to beat it. Far from stepping in to correct the mistakes of the noise trader, arbitrageurs in the ballooning of such bubbles can make more money by participating in the rise by buying on the way up and attempting to sell before the fall down.[46] Accordingly, not only does investor sentiment drive the final nail into the EMH's coffin, this "limited arbitrage" offers the eulogy.[47]

All these phenomena also point to a more general attribute of investors in public capital markets: they operate in these cognitive biases differently. Some display one bias more than another. Others can more easily recognize themselves as about to commit one and avoid it. When people operate under

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46. *See* SHLEIFER, *supra* note 7, at 172-73 (explaining noise trading and bubbles created by such activity). Both these aspects of the theory are necessary to negate the EMH; for if investor sentiment were not true then no price/value distortions would occur, and if complete and unlimited arbitrage were possible, then any distortions they created would be corrected and eliminated. Economic theorists at present exhibit a deeper and broader understanding of investor sentiment than they do of limited arbitrage although both are adequately theorized and documented to justify treating the EMH as overthrown. Nevertheless, these researchers caution that their modeling capability remains somewhat incomplete and subject to further refinement. *Cf. id.* at 24-25 (noting flexibility in models due to theoretical limitations).

47. On top of all this, the argument that the increase of institutional investors (smart money) will make the biases less rather than more significant is certainly misleading and possibly dangerous. The only clear primary consequence of such concentration is that decisions are made by a smaller number of people. The only clear secondary consequence is that their mistakes will be magnified. Paul Gompers & Andrew Metrick, *How Are Large Institutions Different from Other Investors? Why Do These Differences Matter?* (working paper, Harvard Business School and National Bureau of Economic Research).

the conservatism or representativeness heuristic, their methods differ. In short, people exhibit different preferences for the same thing, an observation in tension with the usual story of the EMH and the general story of rational choice theory.

The net results of these behavioral phenomena in financial economic thought are theoretical, empirical, and psychological accounts showing that stock prices systematically deviate from values. The story of the EMH turns out to be like a fairy tale in the sense that it would be wonderful if it were true. It would be wonderful because the equation of price and value promotes optimal asset allocation, thus deploying the capital market resources of society in their most effective capacities.

Desirable policies tend to align the reality with the ideal. Recognizing justifiable skepticism that the ideal will ever be realized, behavioral finance implies a two-part program: one part that promotes the aspirational tale and another that addresses the distance that remains between the reality and that goal.

III. Investor Governance

A theory of decisionmaking and a model of judgment remains the ultimate quest of research in cognitive psychology. The quest follows the research methods and programs of psychological work in perception theory (concerned with optical illusions) and memory theory (concerned with mnemonic failure).[48] The discovery and documentation of cognitive biases, an understanding of their use, and consideration of when they may be overcome facilitate that quest. The resulting general theories can then be adapted for application in particular settings, such as the model of investor behavior for stock markets presented in Part II.

Concerned with overcoming biases, research considers first whether actors in particular settings or social organizations have already adapted to them in systematic ways. Perhaps law has implicitly identified and corrected for various cognitive biases in the judicial evolution of doctrine or the creation of regulatory frameworks.[49] In business firms, the substantial reliance upon systems of internal control may be designed to fight an intuitively perceived

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48. *See* Jeffrey J. Rachlinski, *The "New" Law & Psychology: A Reply to Critics, Skeptics, and Cautious Supporters*, 85 CORNELL L. REV. 739, 751-52 (2000) (discussing effects of cognitive processes, subliminal and otherwise, on investor reaction to market information).

49. *See, e.g.*, Langevoort, *The Human Nature of Corporate Boards*, *supra* note 4, at 822 (explaining that due-diligence defense of third-party professionals in securities-fraud context is justified as response to self-serving biases associated with officers and directors of SEC registrants); Rachlinski, *supra* note 4, at 574-76 (justifying business judgment rule in corporate law as response to hindsight bias).

risk of self-serving bias or other cognitive errors.[50] Although these are open subjects in broader inquiries and debates, evidence shows that cognitive biases affect stock markets and that the effects persist uncorrected by other systemic adaptations (such as smart-money traders correcting the errors of the noise traders).[51]

The open question at the top of the social science research agenda is whether it is even possible to overcome these biases. Preliminary indications suggest that it is possible, at least to some extent.[52] The open question at the top of the legal scholarship agenda is whether it is desirable to employ law in the effort to overcome them. There are good reasons to hesitate.

Cognitive biases are heuristic strategies operating at a subconscious level and carrying powerful benefits. Conservatism performs the motivational role of stress reduction, enabling one to sift through avalanches of information with the comfort of fairly easily separating the important from the trivial. Overconfidence promotes optimism and perseverance, characteristics of highly successful people.[53]

Recognizing the value of cognitive biases does not mean, however, that investors should avoid thinking about biases nor that public policy should ignore them. All it suggests is that any public policies intended to influence these behaviors should be conscious of their possible benefits and the associated costs of training people out of them. Accordingly, a central implication is

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50. *See* Melvin A. Eisenberg, *The Board of Directors and Internal Control*, 19 CARDOZO L. REV. 237, 245 (1997) (discussing institutional safeguards against certain types of bias).

51. It might be nice if these biases would disappear on their own through a quasi-Darwinian process of weeding out the investors who suffer from them. However, there is not much reason to believe that such is the case. First, those who tend to lose money on investments under these biases continue to generate income, some of which they could continue to invest. Second, operating under these biases does not necessarily mean an investor will lose money in investing. Even an irrational or nonrational investment policy can sometimes turn out to generate profits in the end, although the investor could not rationally have predicted that it would. The consequence remains the same, however, for price formation – prices and values separate except by sheer coincidence, and it is that separation that entails social costs.

52. *See* Kahneman & Riepe, *supra* note 17, at 52-53 (presenting strategies to overcome biases and heuristics, but noting that they are often correctly called cognitive illusions for their similarity to optical illusions, which also can be very difficult to overcome even after they are pointed out to you); SHILLER, *supra* note 29, at 142 ("People can sometimes be trained out of their overconfidence."). *But see* Jennifer Arlen, *The Future of Behavioral Economic Analysis of Law*, 51 VAND. L. REV. 1765, 1768-69 (1998) (arguing that behavioral economic analysis may never supplant traditional law and economics); Donald C. Langevoort, *Behavioral Theories of Judgment and Decision Making in Legal Scholarship: A Literature Review*, 51 VAND. L. REV. 1499, 1521 (1998) (pointing out that biases serving some strong underlying motivation are often difficult to overcome).

53. *E.g.*, LIONEL TIGER, OPTIMISM: THE BIOLOGY OF HOPE 203-05 (1979).

that policies designed to educate investors about these phenomena are superior to those building legal-rules incentives or disincentives towards behavior that exhibits less rather than greater cognitive bias.[54] It also means that such investor education must include not only tutelage in the principles of finance and insights from behavioral finance, but also explanation of how these axioms may collide.

These points also lead to a broader preliminary conclusion. The insights of behavioral finance serve as useful tools in evaluating a whole range of existing and potential legal and policy positions in corporate and securities law. These include rules governing investor-broker relationships, the timing and content of corporate disclosure, the manner of deciding issues of corporate finance, and the proof to which a shareholder should be put in alleging securities fraud. Essentially, behavioral finance implicates the whole field of corporate and securities law.

A. Investor Education

The key component of investor governance is investor education. This subpart addresses two important issues: (1) the important lessons and possible remedial strategies that investor-education programs should address and (2) how the lessons should be delivered. The subpart begins with the question of delivery.

1. Delivery

Different parties disseminate a broad range of educational materials for investors. Purveyors range from private enterprises such as mutual funds and brokerages to Internet investment sites to administrative agencies such as the Securities and Exchange Commission (SEC) and the Department of Labor (DOL). These organizations publish materials and hold seminars to inform ordinary investors about investment philosophy, products, and risks. The SEC collects much of this material on its website under the heading "Alliance for Investor Education."[55]

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54. These behaviors are unusual to law in the sense that they are not readily amenable to traditional legal tools such as prohibition or even deterrence. Enacting laws that require a certain response to the release of earnings announcements is silly. It may be possible, however, to identify certain systemic symptoms of these behavioral biases and to enact laws to deter or even prohibit these symptoms. Examples include margin requirements and capital gains tax rates lower than ordinary rates.

55. Partners in this mission range from governmental engines such as the Departments of Labor and Justice, the Federal Trade Commission, and the Social Security Administration to trade groups such as the Securities Industry Association, the American Association of Retired

Investor education has proliferated in the past two decades in response to historical and cultural forces. As the Baby Boomer generation has become poised to pressure the Social Security system, self-directed retirement plans have increased in size and availability. People now want to take individual responsibility for their financial needs, particularly in retirement. The market for investment services eagerly meets the demand.

Despite the importance of these phenomena, legal scholars have paid only limited attention to the content or vehicles of investor education. In one of the few pieces to consider the subject at length, Professor Fanto calls on the private market – including families, schools, and firms – to lead the way in the areas of savings and investing and recommends that regulators such as the SEC stick to lessons concerning financial fraud.[56] He calls for the SEC to redirect its educational efforts toward fraud education and away from its historical focus on saving and investing education programs, which he claims simply do not measure up to those offered in the private sector.[57]

Both the private and public sectors have a role to play in generating substantial educational capital for investors.[58] The best division of labor may not be the one that Fanto prescribes. First, none of these delivery systems deals in any systematic way with behavioral finance.[59] The private sector simply may lack interest in this kind of investor education because it is

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Persons, and the National Association of Securities Dealers to quasi-public bodies such as the New York Stock Exchange. *See* The Investor's Clearinghouse, http://www.investoreducation.org (offering tools for investors) (last visited Sept. 17, 2002).

56. *See* James A. Fanto, *We're All Capitalists Now: The Importance, Nature, Provision and Regulation of Investor Education*, 49 CASE W. RES. L. REV. 105, 159-79 (1998) (outlining proposed role of private sector in investor education).

57. Fanto allows that the SEC could remain focused on encouraging saving and investing and encouraging the private market to promote investor education, but otherwise calls for the SEC to create a conceptual framework project to provide a "sustained reflection on" the SEC's role in the field. *Id.* at 119-47.

58. Other private sector actors that also have a role are corporate issuers of securities. This group too seldom believes it has such a role. They could easily do this on their websites, although registrants seem more often to use these vehicles as a public relations device to encourage demand for their securities. One of the rare companies that recognizes this role is Berkshire Hathaway and its Chairman, Warren E. Buffett. *See* CUNNINGHAM, *supra* note 31, at 17-24 (noting that included in documents that Berkshire sent to shareholders was "Owner's Manual" designed to educate Berkshire shareholders about management's business and investment philosophy so that only those who share it would become Berkshire investors).

59. Nor, for that matter, does Fanto, who endorses as a desirable component of an investor-education curriculum the practice of developing separate mental and actual accounts for different financial purposes, calling these "behavioral 'tricks.'" Fanto, *supra* note 56, at 129. It is precisely these sorts of strategies that behavioral psychologists have identified as operating at the subconscious level and that sometimes impair rational choice making.

relatively difficult to understand. Further, these providers may prefer an investor who succumbs to many of these biases, for they lead to substantial trading activity (and therefore commissions), margin lending (and interest income), and even greater volumes of corporate deal making (and associated fees).[60]

Even if the private marketplace could be counted on as an effective teacher of these lessons, there remains a public policy dimension to their delivery. Educated and psychologically astute investors produce superior capital allocations. This carries substantial social advantages. Investor education is a matter of important public policy concerning both savings and the regulation of securities markets. Accordingly, some role for governmental engines remains, be it the SEC or another body.

Congress imposed this mandate by prescribing just such a role for the DOL. Responding to a declining national savings rate,[61] Congress enacted the "SAVERs Act" to require the DOL to advance the public's knowledge of savings and investment.[62] Congress directed the DOL to gather and disseminate this knowledge using tools from the quotidian (the Internet) to the grand (Presidential summits). Although undoubtedly a sensible congressional directive on most matters, the legislation specifies some mandates taking positions on investment philosophy at odds with certain teachings on the subject, such as endorsing the "importance" of "diversification" and "timing" in investing.[63]

Nevertheless, Congress rightly assumed a public policy responsibility for the executive branch of the federal government. Although important, this does not mean that the DOL or any other governmental agency can do it alone.

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60. An extreme but instructive example of the pitfalls of leaving investor education to the private sector is the proliferation of day-trading firms in the late 1990s. These companies taught people how to trade electronically using tactics that purported to exploit minute-to-minute price changes during the course of a trading day. Advertising materials for these firms fraudulently touted the high profits and low risk associated with this absurd strategy. Regulators cracked down when about 5% of aggregate market trading was being performed by these amateurs trained by unscrupulous hawkers. *See Day Trading: An Overview: Hearing Before the Senate Permanent Subcomm. on Governmental Affairs*, 106th Cong. (1999) [hereinafter *Senate Report: Day Trading*] (including testimony on adverse effects of unregulated "day-trading").

61. The national savings rate was negative in the latter part of 2000, but rebounded by mid-2002 amid a recession made worse by uncertainty generated by the United States's "war against terrorism."

62. Savings Are Vital to Everyone's Retirement Act of 1997, 29 U.S.C. §§ 1146-1147 (Supp. 2000) [hereinafter SAVERs Act].

63. *Id.* § 1146(c)(2)(E)-(F); *see* CUNNINGHAM, *supra* note 31, at 12-22 (identifying criticism by Warren Buffett and others of practices of timing market and portfolio diversification for its own sake). In the case of emphasizing "timing," moreover, the lesson can be downright counterproductive by encouraging pernicious practices such as day trading.

Private resources must be exploited, including the family, formal schools, and industry professionals. The content of all training should extend beyond traditional key topics to include a component on investor psychology.

Further, consideration should be given to developing a deeper philosophy of the educational program. At present, the SEC's Alliance for Investor Education represents a hodgepodge of material culled from disparate sources and lacking coherence. Likewise, the panoply of investment-related products on the market evince no coordinated pedagogical philosophy or educational theory.

Successful educational programs tend to be characterized by three attributes in the execution of their mission. The first and most obvious is the intrinsic function, learning for its own sake. This is the core of enlightenment and involves the transmission of knowledge and the skills to use it as an edifying sensibility. Its quintessence may be the vaunted notion of a good liberal arts education. In the case of investor education, it represents the complete picture – the traditional principles of finance already widely taught, bolstered by the principles of behavioral finance.[64]

The second function is the symbolic, the conferring of tangible recognition of learning, as in granting diplomas, degrees, and certificates, often accompanied by formal ceremony such as graduation or commencement exercises. The symbolic function creates both incentives and rewards for learning. In the case of investors, at present only those motivated by an independent desire to learn tend to participate, a problem of self selection. Tangible manifestations of achievement may broaden the class. A starting point would be to include a certification component in the programs. Many of the private programs confer tangible evidence of completion, including the programs of several on-line investor-education firms. Neither the SEC nor the DOL do so, but they should.[65]

The third characteristic of successful educational programs is the instrumental, imparting a distinctly functional value to the lessons in practical

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64. For more on this dimension of education, see MARY MICHAEL SPANGLER, ARISTOTLE ON TEACHING 135-93 (2000) (discussing deductive and inductive processes of teaching).

65. In all cases of investor education, certification could follow the model embraced by such specialized human endeavors as scuba diving, aviation, or even automobile driving. Each of these requires training to do well, although in no case is a mandatory course imposed on those who would pursue the activity. Yet in these and other skilled but amateur-filled fields, participants receive formal certification that carries not only educational satisfaction to the student but also tangible advantages. These include discounts on car insurance in the case of driver training and access to superior sites and swifter service in the case of scuba diving and aviation. Investing is as specialized as these fields and yet except for the professional, there is a lack of formal training that leads to recognized certification.

application. Examples are qualifications to enter certain professions, to advance in the job market, and so on. A certification program would enhance the instrumental dimension of a sound investor-education program. At present, one theoretical instrumental advantage these programs provide to investors is superior investing results. Another is superior investor protection. Although there is a need for empirical studies verifying these results, a certification program theoretically would enhance their likelihood, as could the following proposed expansion of the content of investor-education programs.

2. Content

The content of investor training in behavioral finance should consist of exposition of the main biases associated with investing. In addition, it should contain some suggestions and strategies for evaluating their influence to enable a determination of their usefulness in particular settings. The precise shape of the program will vary according to the organization sponsoring it, the size of the audience, the demographic characteristics of the audience, and other factors. Subject to such refinements, a broad outline highlighting topics and approaches follows.

The list of cognitive biases is long and seems to grow only longer. Not all these biases are relevant to this discussion on the model of investor sentiment, nor are they all relevant to the same degree. As noted, some may even have other desirable aspects. Although investors may find all of these biases interesting and somewhat beneficial, a comprehensive and general program of investor education would focus on those that are most relevant to the model, contribute most to market inefficiencies, and do not otherwise offer their users substantial offsetting benefits.

Defined this way, the key cognitive biases that investor-education programs should address boil down to three basic categories: (1) reference-point-related issues (including conservatism, excessive loss aversion, and frame dependence), (2) probabilistic analysis issues (including representativeness and overconfidence), and (3) mental errors (the brain functioning outside of one's awareness – namely, anchoring, regret, and addiction).[66] In each category, the lessons would consist of identifying and describing the set of biases and introducing steps that can reduce their adverse effects.[67]

Reference Point Related Issues. At the most general level, neutralizing the errors of cognitive bias relating to reference point issues calls for recogniz-

66. *See* Rachlinski, *supra* note 48, at 750-52 (organizing into three categories seemingly bewildering array of cognitive biases that are relevant to law).

67. *See* CUNNINGHAM, *supra* note 17, ch. 10 (elaborating on certain biases).

ing them. This requires first a simple introduction to them and how they can operate. To correct for them then requires some mechanism to spot them when they come up. Of course, some are easier to recognize than others. For example, conservatism bias is probably easier to recognize in general terms than are problems of excessive loss aversion or framing dependence. Once investors are alert to the conservatism bias – impaired or delayed responses to new information – they can begin to develop a habit of reflection and consideration upon receiving new information.

The combination of three separate lessons can best address excessive loss aversion in connection with holding declining stocks – the disposition effect. The first lesson is to recognize that risk of loss is a major variable and factor in investment selection but that the relevant loss varies by reference point, only one of which is the price paid. Other relevant reference points include, but are not limited to, year-end price and losses conventionally realized on alternative opportunities. Making a habit of noting the loss reference point is valuable.[68] Second, to counteract the disposition effect in particular, teachers should train investors to think hard about noninvestment situations in which the clearly superior strategy is to "cut one's losses."

Third, and more generally, when investors purchase a security, they should determine in advance the circumstances under which they would sell it. These circumstances should relate principally to the fundamental characteristics of the business rather than to its stock price, but the circumstances could also include price. In any event, the investor should clearly articulate such circumstances to avoid inadvertently identifying a chance event (say, the entire market breaks one day, sending the subject stock to extremely low prices).[69]

The way to deal with frame dependence problems is to notice that descriptions of decisions can use broader terms or narrower terms. In selecting between two options, subjects will choose differently depending on whether the options – both with identical economic outcomes – are phrased in terms of total wealth or in terms of gains and losses. When the framing is done more narrowly, as in terms of gains or losses, the tendency is to select choices that can produce weaker (less profitable) positions. Accordingly, investors should place most investment decisions in broader frames, such as total wealth, rather than the narrow frames of gains or losses.[70]

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68. *See* Kahneman & Riepe, *supra* note 17, at 52-53 (discussing value of loss reference points to all levels of investors).

69. This was a common error of the portfolio insurance strategies adopted by many major institutional investors in the late 1980s that contributed to accelerating the market crash of October 1987. *See* Cunningham, *supra* note 3, at 593-94 (discussing role information dispersion plays in stock market crashes).

70. *See* Kahneman & Riepe, *supra* note 17, at 57 (discussing effects of framing). Superior framing can also help to avoid excessive loss aversion. A limiting point to consider in evalu-

Probabilistic Analysis Issues. The whole range of biases that are a function of limited cognition of probability (such as the representativeness heuristic and overconfidence) can best be addressed, obviously, by enhancing one's ability to judge probabilities accurately. Decision analysts recommend thinking of uncertain variables in terms of confidence intervals. Kahneman and Riepe offer the example of asking a subject to state her best estimate of the level of the Dow Jones one month from today. Then the researcher asks the subject to pick a high level, which she is 99% sure that the Dow will be under, and also a low level, which she is 99% sure the Dow will be over.[71] These instructions call for the subject to state that her probability of error is 2% (1% on each of the high side and the low side). Subjects well calibrated in judgments of probability have a success rate of at least 98%, but most people's success rate is more like 75-80%. Subjects can improve their calibration rates by practicing this method of analysis, known as confidence intervals.[72]

Mental Errors. Another general way to sensitize oneself to cognitive biases is by receiving feedback from decisions that reveal their presence. The upshot in the case of stock market investors is that this feedback is pervasive; the downside is that the feedback itself is not always easy to identify. For example, is poor portfolio performance due to an investor's misstatement of probability or just the plain unlucky happenstance of the improbable occurring? Recognition of the most common and costly mental errors by investors would go a long way to help investors avoid repeating them. A valuable component of a behavioral finance investor education would concentrate on introducing just a few of these.

First, one of the most powerful cognitive errors of judgment is the *hindsight bias*, a "tendency to think that one would have known actual events were coming before they happened, had one been present for them or had reason to pay attention."[73] The most common examples are reports from financial

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ating frame breadth, however, is the disciplinary value that different investors exact from narrow rather than broad frames.

71. *See id.* at 53 (outlining research methods).

72. *See id.* at 56 (reporting results of research into judgment of calibration rates).

73. *Id.* In a revealing study, a group of individuals was given a description of an obscure battle between Britain and the Gurkas in Nepal in the nineteenth century. Four possible outcomes of the next stage in the battle were then noted as possible. Five subgroups were created. Four of the groups each were told that one of the four outcomes had in fact occurred, and the fifth was not told which happened. Respondents were asked to gauge how likely they had thought each outcome was. Individuals in the four informed groups responded in disproportionately high percentages that the outcome that they were told occurred was the outcome that they had thought was most likely to occur. *See* Baruch Fishhoff, *Hindsight is not Equal to Foresight: The Effect of Outcome Knowledge on Judgment Under Uncertainty*, 1 J. EXP. PSYCH. HUM. PERCEPTION & PERF. 288, 289-92 (1975) (describing methodology and results of study).

journalists explaining why markets moved as they did earlier in the day. Market movements are so complex, of course, that it is impossible to pinpoint the reasons for most moves. Even with calamities such as the October 1987 market crash, experts find it difficult to explain causes.

Second, as the examples in Part II suggested, there is a substantial emotional dimension to investing, a conclusion made even clearer when you turn your attention away from the moments of decision and towards living with those decisions. The most striking emotion associated with the consequences of investment decisions is regret. Degrees of regret are more acute when associated with decisions to take proactive steps rather than decisions to refrain from action, known as the "commission/omission" distinction.[74] Acquainting investors with this distinction would go a long way towards avoiding regret. Training investors to overcome such regret generally requires attention to its link to loss aversion. It calls for learning about one's own loss averseness, gauging the slope of one's value function (comparing the gain function to the loss function), and sticking with investments that meet one's willingness to bear losses and thereby minimize regret.[75]

Third, social psychologists call the folk-wisdom caution against the power of suggestion the problem of *anchoring*. This regularly arises in corporate affairs, from finance to accounting. One study asked two groups of accountants to estimate the frequency of financial fraud among corporations. The researchers asked one group whether the rate was more than 1% and the other whether it was more than 10%. Thereafter, the study asked each to specify an estimate. Those in the 1% group estimated a far lower percentage than those in the 10% group.[76]

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74. Selling of Amazon stock before it rose substantially is commonly more painful than not having sold the stock before it fell substantially. There are two reasons. The broader one is that the selling shareholder's perceived mistake is of a stronger form – the commission of sale in addition to the decision. The continuing shareholder made a decision, but took no further action. The second reason is the difference between outright losses and mere opportunity cost. Investors feel outright losses more acutely than missed opportunities. CUNNINGHAM, *supra* note 17, at 206-07; Kahneman & Riepe, *supra* note 17, at 63.

Some of the cognitive errors catalogued above also amplify regret. The hindsight bias, for example, that leads an investor to believe she could have avoided a loss, exacerbates feelings of regret. Investors regret not having seen the writing on the wall or not having acted to protect against a bad result later on. Also noteworthy is that of the minority of people who express greater regret over their omissions rather than commissions, a disproportionate percentage of them were also more risk seeking than average. In addition, among this group a disproportionate percentage assigned virtually no role at all to chance in the outcomes of their decisions, exhibiting an "illusion of control" that itself is a cognitive bias. *Id.*

75. *See infra* text accompanying notes 83-84 (considering this problem in context of broker-investor suitability rule).

76. Edward E. Joyce & Gary C. Biddle, *Anchoring and Adjustment in Probabilistic Inference in Auditing*, 19 J. ACCT. RES. 120, 122-23 (1981).

For investors, anchoring can orient analysis towards the present or recent price of stocks and away from underlying values. Even those who exercise independent judgment in estimating value using fundamental methods of analysis may lean toward a particular end of their range in light of present price data or price data that they recently examined.

Finally, two more obviously dysfunctional limits are bad habits and addictions. Some investors perform trading decisions or activities simply as a matter of repetition. In many contexts, such habits can save costs, as in taking the same route to work at the same hour of the morning, and thus can amount to good habits. Rarely is this so in investing, with the possible exceptions of dividend reinvestment plans and the good habits of reflection and attention discussed in this Article.

Worse, however, are addictions – actions taken not simply as a product of ordinary repetition but as a product of powerful compulsions that coerce an action against an opposing rational sense that it is undesirable. Excessive drinking and eating fall into this category, as does any amount of smoking and at least some forms of gambling, including all such activity that bears on the price formation process in public capital markets.

In the case of each of these phenomena, reformers could improve investor education substantially by simply covering the topics – largely as described here – as part of the course. More advanced courses or materials could amplify them. Even a basic awareness of these mental shortcuts should enable an investor to evaluate intelligently whether using a shortcut or taking the long route is preferable in the context of a particular decision.

* * *

Promoting the identity of stock prices and business values is socially desirable. Superior investor-education programs that emphasize not only the basic principles of investing that have been accepted for decades, but also the role and significance of psychology that has been neglected until recently can aid this promotion of stock price identity. This education, however, will not eliminate all errors or their effects; reformers must also pay attention to potential changes in fields that most directly relate to investors and their behavior. Those fields are potentially very numerous, but the most dramatic in terms of importance and immediacy is market regulation. This Article will first address market regulation and will then consider, in survey fashion, a series of additional implications.[77]

77. It is important that the research of finance scholars that developed the EMH and cognate doctrines, and which still uncovers important insights about market pricing and risk, remains a useful contribution to knowledge and thought. The legal analyst, however, must take the shortcomings of finance theory into account in formulating public policies rooted in legal

B. Market Regulation

Investor education rather than investor regulation is probably the best way to respond to the increasing recognition of the substantial role that cognitive biases play in investor behavior. Nevertheless, the insights from behavioral finance do suggest a couple of areas where existing legal rules should change.

1. Local Educational Subvention: Suitability and Churning Rules

Brokers owe a general duty of fair dealing to their clients and a special duty of suitability in recommendations on investment decisions. Principally, private organizations such as the New York Stock Exchange define these duties.[78] In addition, definitions flow from administrative and judicial interpretations.[79] The regulations and the interpretations all tend to define fair dealing and suitability solely in financial, rather than psychological, terms.[80] Behav-

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principles. Thus, even as legal scholars applaud the efforts of finance scholars, they may feel constrained to depart from the implications of purely theoretical work when anomalies put limits on its practical prescriptive value. Indeed, the key insights of much of modern finance theory are of substantial significance, especially the concepts of net present value, the relationship between risk and return, and the way that competition among informed investors promotes market efficiency. *See, e.g.*, RICHARD A. BREALEY et al., FUNDAMENTALS OF CORPORATE FINANCE 746-52 (3d ed. 2001) (annotating six most important ideas in finance and seven unsolved problems in finance).

78. The New York Stock Exchange has its own version of the suitability rule called a "know the customer rule," NYSE Rule 405, *reprinted in* NYSE Guide (CCH) ¶ 2405 (1999), understood to impose a duty on the broker to insure that recommendations reasonably relate to the investor's particular needs and situation. *See also* RICHARD W. JENNINGS & HAROLD MARSH, JR., SECURITIES REGULATION 643 (6th ed. 1987) (explaining effect of Rule 405).

79. Some states also have adopted fair dealing and suitability rules for brokers, but along lines substantially similar to those discussed in the text. *See generally* JOSEPH C. LONG, BLUE SKY LAW § 7.07 (1998); JERRY W. MARKHAM & THOMAS LEE HAZEN, BROKER-DEALER OPERATIONS UNDER SECURITIES AND COMMODITIES LAW (1999). Under Section 10(b) of the Exchange Act, courts have also found liability for failure to comply with the principles underlying such rules. *See, e.g.*, Brown v. E.F. Hutton Group, Inc., 991 F.2d 1020, 1031 (2d Cir. 1993) (discussing disclosure of suitability claims); O'Connor v. R.F. Lafferty & Co., 965 F.2d 893, 896-98 (10th Cir. 1992) (analyzing unsuitability claim); Miley v. Oppenheimer & Co., 637 F.2d 318, 333 (5th Cir. 1981) (noting "know your customer" rule and suitability rule); Clark v. John Lamula Investors, Inc., 583 F.2d 594, 600-01 (2d Cir. 1978) (explaining suitability rule and analyzing claim).

80. For example, NASD Rule 2310(a), the main suitability rule, provides:

> In recommending to a customer the purchase, sale or exchange of any security, a member shall have reasonable grounds for believing that the recommendation is suitable for such customer upon the basis of the facts, if any, disclosed by such customer as to his *other security holdings and as to his financial situation and needs.*

NASD Rules of Fair Practice, Rule 2310(a), NASD Manual (emphasis added). Most interpreta-

ioral finance suggests, however, that while financial aspects of investing are obviously of great importance, there is a substantial place for psychological aspects which may offer a differing prescription. Accordingly, reformers should give consideration to broadening the concepts underlying the fair dealing and suitability requirements to include a psychological component.[81]

As a practical matter, such a step would not differ all that much from what happens in most cases already. When an investor opens a brokerage account the broker must take reasonable steps to obtain information about the customer's financial and tax status and investment objectives, as well as other information possibly useful in making recommendations.[82] Brokers implement this requirement in part by including certain fields on new account forms. These include data fields such as income and net worth, as well as fields for investment objectives such as income or growth. The broker typically reviews this data with the customer in a conversation.

It would not be difficult in such a meeting, or on the account form, to call attention to aspects of investor psychology in addition to investor financial condition. An applicant would check boxes according to investment objectives and also according to psychological profile. As with investment objectives,

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tions emphasize financial aspects. *See, e.g., In re* Application of Rangen, 64 SEC Docket No. 628, Release No. 34-38486 (Apr. 8, 1997) (examining whether securities recommendation was consistent with "financial situation and needs"). Though psychological variables have not been a factor, sometimes factors such as experience and complexity have been considered. *See, e.g., In re* David Allen, NYSE Hearing Panel Decision No. 96-147 (Dec. 19, 1996) (evaluating suitability in terms of investment objectives, financial resources, and experience); *In re* Application of Clyde J. Bruff, 52 SEC Docket No. 1266, Release No. 34-31141, Fed. Sec. L. Rep. (CCH) ¶ 85,029 (Sept. 3, 1992) (noting "high degree of financial risk and complexity").

81. Legal scholarship concerning the suitability rule proliferated in relation to derivative securities and sophisticated investors during the 1990s, but was otherwise not a richly plowed field, with a few notable exceptions. *See generally* Seth C. Anderson & Donald Arthur Winslow, *Defining Suitability*, 81 KY. L.J. 105 (1992); Donald C. Langevoort, *Selling Hope, Selling Risk: Some Lessons for Law from Behavioral Economics About Stockbrokers and Sophisticated Customers*, 84 CAL. L. REV. 627 (1996); Robert N. Rapp, *Rethinking Risky Investments for that Little Old Lady: A Realistic Role for Modern Portfolio Theory in Assessing Suitability Obligations of Stockbrokers*, 24 OHIO N.U. L. REV. 189 (1998). None of this work deals with the psychological portion of the suitability equation.

82. NASD Rule 2310(b) provides:

> Prior to the execution of a transaction recommended to a non-institutional customer, other than transactions with customers where investments are limited to money market mutual funds, a member shall make reasonable efforts to obtain information concerning: (1) the customer's financial status; (2) the customer's tax status; (3) the customer's investment objectives; and (4) such other information used or considered to be reasonable by such member or registered representative in making recommendations to the customer.

NASD Rules of Fair Practice, Rule 2310(b), NASD Manual.

firms could choose which of various psychological factors seem most relevant to their understanding of what investments would suit a particular client.

Of all the biases and factors that one could possibly ask about, however, one's degree of loss aversion is striking for its relevance, reliability, and accessibility. Loss aversion relates directly to problems of regret (a universal characteristic of claimants in nonsuitability cases); it is a good indicator of the sorts of securities that would or would not make the investor comfortable, and it is relatively easy to elicit through conversion and observation. One can express it in terms of personal value function, the degree to which the person differs in her weighting of gains versus losses.[83]

Brokers would then consider these profiles in relation to an investor's stated investment objectives. In some cases, brokers may have to reconcile the two according to some tradeoffs. For example, an investor checking "speculation" as her objective and also indicating a steep gain/loss value function would clearly need to reconsider at least one of her choices. The client could do this at the outset or choose to amend it in the course of investment selection. In any event, brokers would measure the suitability of investments in terms of both financial objectives and psychological profile.[84]

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83. For example, behavioral finance explanations of the equity risk premium indicate that on average investors weight losses more heavily than gains by a factor of about 2.5, a good proxy for the normal value function. *See supra* notes 18-20 and accompanying text (discussing loss aversion phenomenon and its manifestations and causes). More loss-averse investors would have higher value functions. *See* CUNNINGHAM, *supra* note 17, at 25-28, 192-95 (discussing role of value functions in market analysis).

If this sounds at all fanciful, the reader should take note that it is no more peculiar to ask an investor what her emotional orientation towards gain versus loss is than it is to ask her to specify her investment objectives in terms of categories such as income, investment grade, growth, or speculation. Indeed, these labels may have far less meaning than labels defined in terms of emotional states.

Moreover, devotees of efficiency theory take beta as a measure of risk and use it to design a portfolio carrying the desired level of risk. The present proposal is simply to realize that beta is not a reliable measure of risk, but that the intuition of seizing on a tool to measure risk is desirable.

To avoid creating substantial administrative costs or burdens, the client would not have to undergo any extensive diagnosis. A client could form her own judgments of her psychological profile based on the kind of investor-education program discussed above. However, it is equally possible, and certainly within the range of passing a cost-benefit test, to call for the firm to evaluate a client using the kinds of behavioral testing and experimentation that researchers in behavioral finance have used in developing the theories discussed in Part II.

84. If the EMH held true, brokers could define suitability according to the linear relationship of risk specified by investor goals on the one hand and expected return from particular investment or type defined by CAPM on the other. *See* Anderson & Winslow, *supra* note 81, at 110-11 (illustrating linear relationship between risk and return). Such a linear relationship becomes irrelevant, however, once it is clear that the EMH is not true, particularly when a major

This is, after all, what people usually worry about in assessing the uncertainties of investments and is a major part of what they complain about afterwards when things do not turn out the way that they had expected. The approach, therefore, would certainly change the sorts of investment recommendations that firms make and decisions that result. The outcome, however, would reduce the frequency of good faith after-the-fact objections to broker advice and the incidence of formal disputes alleging violation of the suitability rules. From that point of view, this device should have the effect of protecting both the investor and the broker, while at the same time promoting optimal capital allocations.

Defining suitability rules in both financial and psychological terms bears on the related set of broker-investor regulations concerning churning, which is defined as excessive trading done in an account.[85] Brokers may not trade excessively in accounts in a manner that appears intended more to generate trading fees and commissions than to meet investment objectives of the client.

The most common means of assessing whether trading is so excessive as to constitute churning is calculating the annual turnover rate for the account.[86] The rate is then compared to general baseline indicators of trading levels on a continuum between light, moderate, and excessive trading. The most common metric is the so-called "2-4-6 rule": a rate exceeding two indicates the possibility of churning, exceeding four indicates a presumption of churning, and exceeding six conclusively establishes churning.[87] Under both this rule as well as less formulaic and more contextual approaches, it is also common to evaluate the observed turnover rate in relation to the investment objectives. An account intended to engage in short-term price arbitrage would ordinarily have a much higher turnover rate than one intended to preserve capital and accumulate income.[88]

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reason that it is not true is due to loss aversion and asymmetric value functions.

85. *See* Exchange Act Rule 15c1-7, 17 C.F.R. § 240.15c1-7 (2001) (defining acts constituting excessive trading in discretionary accounts). Churning rules apply only to accounts over which a broker has control. A transgression of the antichurning rules may also violate a broker's standards of conduct under Section 15(c)(1), 15 U.S.C. § 78e(c)(1) (2000), as well as Exchange Act Rule 10b(5). *See, e.g.*, Hecht v. Harris, Upham Co., 430 F.2d 1202, 1206-07 (9th Cir. 1970) (conferring jurisdiction under Exchange Act Rule 10b(5)).

86. The simplest computation divides the total dollar amount of purchases by the average monthly ending balance invested in securities.

87. Some commentators have advanced sophisticated techniques that apply portfolio theory to churning, an approach rooted in the EMH. *See* Donald Arthur Winslow & Seth C. Anderson, *A Model for Determining the Excessive Trading Element in Churning Claims*, 68 N.C. L. REV. 327, 342-43 (1990) (commenting on modern portfolio theory). These obviously do not work if the EMH is false, particularly if the reasons why it is false include psychological factors.

88. Yet another approach is to compare the observed turnover rate to the observed turn-

But if we also recognize that substantial psychological forces are at work in the market in aggregate and in the case of individual investors, we may gain the most utility out of comparing particular levels of trading in an account, not with market benchmarks, but against the psychological profile of the investor developed during the suitability review. In other words, we would relate questions of churning directly to questions of suitability, which in turn are keyed off not only investment objectives, but also psychological factors.[89]

Rules of thumb, such as the 2-4-6 rule, might still prove useful. The intuition behind that rule is sound in the sense that it furnishes a channeling directive for the inquiry that calls for dismissal of claims involving turnover rates under two, for grant of summary judgment for the plaintiff in cases involving rates exceeding six, and for case-by-case evaluation of claims involving rates between two and six. Once we include a psychological profile, the intuition would still hold, though the calibration would differ.

Trading is risky; but for an investor who identifies arbitrage as his investment objective and discloses a flat gain/loss value function, it would not seem unreasonable to raise the 2-4-6 scale up to as much as 5-8-11. At the opposite end of the scale, an investor seeking preservation of capital and disclosing an acutely steep gain/loss value function might warrant a churning framework of 1-2-3. In short, courts otherwise content with adopting and applying the 2-4-6 rule or similar abstract formula could vastly improve the accuracy of their analysis by adjusting the general standards for the particular suitability of each investor, as defined by that investor's combined financial and psychological profile.

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over rate of mutual funds pursuing comparable investment objectives. *See id.* at 343-60 (analyzing mutual fund turnover rates). Suppose the subject account's turnover rate is 1.4. You then compare this rate to the mean turnover rate of mutual funds adopting similar investment objectives (such as "growth and income") during a comparable period. Suppose this is .58 with a standard deviation of .4. This means that the subject account turnover rate exceeds the norm by two standard deviations. The likelihood that the actual rate exceeds that norm purely as a random matter – and that accounts operated in accordance with the investment objectives would exhibit such a high level of turnover – is low. Accordingly, there is a strong claim based on these numbers that this activity constituted churning. *Id.* at 352. If churning claims incorporated psychological profiles, comparisons to the mutual fund industry would not prove workable except to the extent that the psychological profiles of the funds were known.

89. That nexus also appears in some of the cases, for some courts have held that a showing of nonsuitability is an element of a churning claim. *See* JENNINGS & MARSH, *supra* note 78, at 639-41 (discussing view that suitability is element of churning claim). Other courts distinguish the offenses. *See, e.g.*, Nesbit v. McNeil, 896 F.2d 380, 386 (9th Cir. 1990) (allowing plaintiffs to recover both churning and nonsuitability damages).

2. *Systemic Manifestations and Public Policy: Day Trading, Margin Trading, and Panic*

One can view these proposals to broaden the rules relating to suitability and churning to include psychological profiles as an element of an investor-education program. This is because they call upon the investor who is opening a new brokerage account to pause and consider her emotional orientation towards investing. Neither sort of investor-education program is likely to eliminate cognitive biases or their effects, nor is it desirable to do so in any event.

A tempting option, then, is to consider stronger action to address systemic manifestations of the consequences of collective cognitive biases. These general manifestations include such episodes as the explosion of day trading in the late 1990s and early 2000s, obviously a product at least in part of overconfidence and representativeness biases on a mass scale. Day trading is the practice of buying and selling stocks during a single trading day with the goal and result of holding no stocks overnight. Its high popularity suggests that many thousands of people cannot assess risk well, probably due to cognitive biases and an inability to calculate probabilities accurately.

The mass appeal of this activity raised the question of whether public policy could do anything to stem it. The epidemic caught the attention of regulators including the SEC, which warned against it, and the Senate, which published a report about its hazards along with statistical evidence showing how unlikely it is for a person to make money in the process. Neither Congress nor the SEC took any additional formal action to ban day trading or even to discourage it – nor could they.

There is no practical way for regulations to forbid the actual practice of day trading. After all, at the level of practice it consists solely of effecting trades in an open market. What the regulators throughout the country could and did do was to enforce existing laws against touters of day trading who engaged in false advertising and other deceptive trade practices to promote the activity. Day trading represents precisely the kind of force in the marketplace that investor-education programs emphasizing biases such as overconfidence would serve to counteract. But outright banning of day trading was not seriously on the agenda.[90]

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90. *See Senate Report: Day Trading, supra* note 60 (relating testimony of SEC Chairman Arthur Levitt as well as remarks of Senator Collins expressly disclaiming any intention to forbid day trading while also expressly condemning practices of many of its promoters and characterizing practice as foolish high-risk strategy).

This policy of persuasion may reduce the incidence of day trading, but educating people about the pitfalls of "short termism" has always been an uphill project. The proliferation of day trading is an example of this commonly lamented characteristic of limited rationality in American equity markets. Market analysts have always tended to place relatively greater emphasis on the near term compared to the long term. This is so even though in stocks, the near term (today through the next couple of years) is riskier than the far term (five years and beyond) in that there is greater variability of returns to individual stocks, the percentage of losing time periods compared to winning time periods in the major indexes is greater, the volatility is greater, and so on. Yet most (maybe almost all) people check and recheck their purchases and sales and rebalance their portfolios over the near term, and many professionals advise periodic rebalancing.[91]

Another symptom of the short-term view that reveals additional plagues of many American traders is margin trading. It is the practice of borrowing funds from a broker with whom one holds an account in order to buy securities with the loan proceeds. It purports to exploit the leverage of lending, but can have financially dire consequences when securities markets turn downward.[92] In behavioral terms, excessive margin trading is probably a product of overconfidence, at least when debt-to-investment ratios reach the proportions they did in the United States in the late 1990s and early 2000s.[93] That can help to foster market bubbles that not only push prices above values, but also pose substantial risks of uncontrollable financial fallout and devastation once the bubble bursts.

This seems an easy context in which to justify regulatory intervention, not so much because of its effect on the stock market as such or on investors

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91. Proselytizing, and possibly some incremental tax policy, are about the only available public policy avenues to seek reorientation of this attitude, and this is no less true of problems such as day trading. Apart from tax policies such as lower capital gains taxes, a broader possible prescription would impose differential transaction taxes on purchases and sales of securities that occur in a single day. After all, it would be the rare day on which it is rational for an investor who decides in the morning that buying a share of IBM is a good idea, to decide in the afternoon that it is not. Most underlying fundamentals do not change that quickly, nor do most news reports of such alteration disseminate in such a short time period. The larger problem with such a regulation, however, is its inability to discriminate between day traders acting noisily and under cognitive biases and sophisticated money traders such as arbitratgeurs, who notice price/value differentials that need correction. Discouraging such trades in one market may also exacerbate problems of mispricing in others, for it reduces the range of opportunities that an arbitrageur has to hedge risks he takes in one market by offsetting positions in another.

92. *See* CUNNINGHAM, *supra* note 17, at 222-25 (noting consequences of leveraged lending in recessive markets).

93. *See* LAWRENCE A. CUNNINGHAM, HOW TO THINK LIKE BENJAMIN GRAHAM AND INVEST LIKE WARREN BUFFETT 78-79 (2001) (commenting on debt-to-investment ratios of late 1990s).

individually, but because of the broader macroeconomic context of which it is a part. The volume of margin debt relates directly to the aggregate supply and cost of credit in the economy and, therefore, has an important bearing on the level of domestic production and on price inflation. It was for this reason that Congress allocated the power to regulate margin lending not to the SEC, but to the Federal Reserve Board, which led the campaign to educate the public about and restrict its access to margin accounts in the late 1990s and early 2000s.[94] Fed proselytizing and even regulatory tightening of its margin credit rules are apt responses to the problems of excessive margin borrowing.[95]

Yet no amount of proselytizing or Fed policymaking is going to eliminate the systemic manifestations of cognitive biases. Nor would investors necessarily desire this, not only because these biases are likely at least partially beneficial to those exercising them, but also because financial history and economic theory both strongly suggest that governmental efforts to control market activity through policies of price control or stabilization will probably fail. Alas, some lessons can only be learned the hard way – by experience.

That raises a final consideration in this subpart concerning manifestations of collective cognitive biases: the issue of market crashes and what, if anything, regulators should do about them. The behavioral model outlined in Part II describes market crashes quite well. A market bubble, driven by psychological forces such as overconfidence and reinforced by those such as representativeness, precedes crashes. Biases such as overreaction spark crashes, and other biases such as hindsight bias and regret reinforce them. In short, people get carried away on the way up and carried away on the way down.[96]

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94. The Federal Reserve's general regulatory powers relate to the money supply and interest rate (supply and cost of credit) and include the power to regulate the speculative use of credit. The Fed exercises this power by limiting the amount that holders of securities may borrow against securities, set as a percentage of their current market value, a figure that has ranged from 45-60% and is currently at 50%. These limits apply only to the initial loan and do not require adding collateral or reducing the loan amount. The rationale of the Fed's involvement is that although the broker is the nominal lender to the customer, the broker obtains the funds in turn from banks and changes in bank funds directly affect the banks' reserve positions. Substantial increases in demand for margin credit can produce the same for bank debt and thus affect money rates. The Fed is thus able to restrict the use of bank funds for stock market speculation without restricting the volume of credit available for commercial and industrial needs or raising its cost.

95. Regulation T governs credit extensions by securities brokers and dealers, including all members of national securities exchanges. These parties cannot extend credit to their customers except by loans secured by publicly traded securities, mutual funds, or certain foreign stock. At inception, the amount of the loan may not exceed the percentage of current market value permitted by the Fed from time to time.

96. *See* Frank Partnoy, *Why Markets Crash and What Law Can Do About It*, 61 U. PITT. L. REV. 741, 755-57 (2000) (summarizing "cognitive error" theory of market crashes). Accord-

Should government step in on the way down?[97] Prior to the 1987 crash, the regulatory posture was to leave markets to operate freely. After the crash, regulators adopted circuit breakers that impose a trading halt in the face of substantial selling pressure.[98] The theory recognizes that falling prices mean scarce liquidity, and the goal is to bring investors back to the buy side to provide that liquidity. Rational actors might respond well to this, but they may also feed into it, enhancing selling pressure before the trigger as much as alleviating it afterwards. Given the difficulty of pinpointing particular causes of market nosedives, the circuit breaker is a broad and uncertain response to such pressure.[99]

Market complexities are not well understood, the influence of psychological factors indeterminate, and the effects of the regulations themselves highly uncertain. The architects of the trading halts did not see fit to draft rules that limit prices on their way up amid the speculative phase of the cycle – and rightly so. But if there is an insufficient economic policy basis to call for governmental control during the speculative phase of the cycle, there likewise remains an insufficient basis for doing so on the way down. Trading halts do not, in short, seem defensible as ways to deal with market inefficiencies.

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ing to Partnoy, although the details vary from one crash to the next, the general pattern involves an exogenous catalyst creating new profit opportunities, the expansion of credit to exploit those opportunities, euphoria at the resulting rise in financial asset prices and a consequent mania, a panic that things have gotten out of hand, and a crash that proves the point. *Id.* Partnoy notes two weaker alternatives to the cognitive error theory of market crashes: (1) a moral hazard problem created by financial guarantees in the economy ranging from deposit or securities insurance to probable governmental bailouts (weaker because the presence of these devices has reduced the incidence of crashes in the United States) and (2) information asymmetry, under which lack of investor information about value causes price-value discrepancies and can lead to market spirals by creating incentives for issuers and existing shareholders to keep negative information quiet (weaker because it draws on the theory of investor cognitive error). *Id.* at 757-62.

97. Apart from the specific question of whether law should step in when markets begin to crash, legal rules and social norms do play important roles in averting the bubbles that precede crashes and keeping the number of bubble-crash patterns to a minimum. Among the operative forces having this effect are legal rules that reinforce a culture of trust in markets, corporate governance rules that reduce the costs of the separation of ownership from control, rules that permit free markets to operate according to their own economic laws of supply and demand, and laws creating and governing the operation of lenders of last resort. These can all fail, of course. The question is, when they do, should law do anything more?

98. Circuit breakers have triggered on various financial markets on many occasions since they were enacted.

99. Another possible approach is to recalibrate the circuit breakers according to structural market complexities described by chaos theory. *See* Cunningham, *supra* note 3, at 602 (proposing more nuanced approach).

Again, better to work with the indirect tools of proselytization and education rather than with the direct tools of price control and regulation.[100]

Prices should fall. If forces drive them to heights above values, then a correction should follow. Any interfering with the fall is artificial. Natural fluctuation replaces irrational fantasy for the heuristics and other cognitive limits that created the bubble. Interference is a form of price control disproved every time it is used. Prices are driven, constantly, to equilibrium – the point at which supply meets demand and at which marginal cost equals marginal benefit. It is bad enough when cognitive error forestalls that equilibrium. Policy interventions carrying highly uncertain results only exacerbate the imbalance.

C. Corporate Finance

Beyond the necessity of investor education, a substantial range of additional legal implications of market inefficiency remain. Lawyers and policymakers not only need to be aware of these implications, but also must recognize the extent to which the existing legal framework of corporate finance fails to deal with the issues they pose.

Corporate finance deals primarily with raising, deploying, and distributing funds. Most legal scholarship in these three areas considers cases in which a transaction is made at a price different from value due to an issuer failing to disclose information that would explain the difference.[101] This

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100. Frank Partnoy has proposed eliminating circuit breakers and replacing them with the Federal Reserve as the stock buyer of last resort. *See* Partnoy, *supra* note 96, at 802-03 (explaining proposal for Federal Reserve to act as insurer). His proposal is that, if the market declined by a certain percentage, the Fed would begin offering to buy S&P 500 contracts at 20% below the opening market price. *Id.* Partnoy believes that this would pose no moral hazard problem and that the main behavior it would encourage is the diversification of portfolios. On the brink of a panic, it would restore confidence with investors who are safe in the knowledge that they stand to lose at most 20%. *Id.* What if this does not calm people, and selling pressure continues? Or what if it calms them today, but they all come back again the next day, losing another 20%? It would only take a few episodes to wipe out a lot of people, meanwhile making the federal government a major shareholder of corporate America. Partnoy notes that in the event of a crash without this policy the Fed would nevertheless provide liquidity by purchasing government bonds on the open market. He argues that his proposal simply enables the Fed to do directly what it would now do indirectly. *Id.* at 803.

There is a big difference, however, between buying stock directly and repurchasing debt securities the Fed itself has functionally issued. U.S. taxpayers would fund this insurance program, argues Partnoy. *Id.* at 803. But why should all taxpayers pay for the bailout of investors? Investors should know that they are getting into a risky business. Part of that risk is that they may join a giddy parade of excess; part of that experience should be to learn the lessons from such risk taking. Those opting not to participate in that game of risk should not be forced to shoulder the burden – at least not pursuant to this automatic device.

101. This can occur both when the information is material and unlawfully withheld and

scholarship seeks solutions that limit the ability of insiders to exploit such circumstances for personal profit.[102] Left out of this literature are transactions that are ef-fected (a) at prices that differ from value simply because the market is not digesting disclosed information properly and (b) without any insider motive other than for the corporation to take advantage of an inefficient market for cheap financing. The following discussion centers on that situation in the three financing contexts.[103]

1. Raising Funds

If a stock market is not efficient, then a company's stock may be over- or underpriced compared to its intrinsic value. Public companies would benefit from selling new shares when the price of existing shares is above value. When a stock worth $40 is trading at $50, offering new shares at closer to $50 is a good way to make nearly $10 per share (dilution may prevent realization of the whole $10). Secondary securities offerings are often timed in precisely this way.[104] A neat legal question arises: Are directors who make such a decision to make a public offering discharging their legal duties?[105]

In such an overpriced offering, directors are discharging their state-law fiduciary duties to the extent that the corporation is making money on the deal, thus benefitting at least the existing shareholder group. But what about the buyers getting the raw deal? Although the directors at the time of the

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when it is not. *See, e.g.*, Donald C. Langevoort, *Rereading* Cady, Roberts*: The Ideology and Practice of Insider Trading Regulation*, 99 COLUM. L. REV. 1319, 1335 (1999) (noting that "materiality" is fluid concept that has little relevance in insider trading context).

102. *See generally* Jesse M. Fried, *Insider Signaling and Insider Trading with Repurchase Tender Offers*, 67 U. CHI. L. REV. 421 (2000) (offering modern approach to limit corrupt trading practices); Jesse M. Fried, *Reducing the Profitability of Corporate Insider Trading Through Pretrading Disclosure*, 71 S. CAL. L. REV. 303 (1998) (discussing possible disclosure policies that would reduce incentives to participate in corrupt trading practices); Mitu Gulati, *When Corporate Managers Fear a Good Thing Is Coming to an End: The Case of Interim Nondisclosure*, 46 UCLA L. REV. 675 (1999) (same).

103. Obviously, when the context for discussion is the EMH and its limits, these finance decisions relate only to corporations whose shares trade in public capital markets. The discussion does not generally address closely held and other nonpublic business organizations except to the extent that doctrines in one field inform those in the other and to the extent that the issues discussed concerning raising funds bear on the transitional firm in the process of preparing for and consummating an initial public offering.

104. SHLEIFER, *supra* note 7, at 187 (citing Alon Brav et al., *Is the Abnormal Return Following Equity Issuances Anomalous* (Duke University, Working Paper, 1999)); Tim Loughran & Jay R. Ritter, *The Operating Performance of Firms Conducting Seasoned Equity Offerings*, 52 J. FIN. 1823, 1825-26 (1997).

105. Note that this legal question would not arise in a truly efficient market, in which the offering price is the correct value.

offering do not owe the buyers any fiduciary duty, they do owe them disclosure duties under federal securities laws. Those laws require disclosure of all material facts. If the directors know that the company is exploiting a market inefficiency and they do not disclose this, then this would constitute a violation of securities laws.[106]

Directors thus face a conflict between duties owed to existing shareholders and duties owed to the buyers.[107] One possible way out of this conflict is to observe that directors have no duty to effect the offering at all. Under the business judgment rule, a board is not legally required by fiduciary duties to effect an offering.[108] But there will be times when boards in such a circumstance nevertheless find it necessary or desirable to effect an offering. Once the directors decide to effect an offering, the price is to some degree subject to judicial scrutiny under state fiduciary law. On the low end, the board could not set the price so low as to constitute a waste of the corporation's assets.[109] At the high end, there is at least a credible theoretical argument that the board has a duty to get the highest price it can – including a price above value if the market is willing to pay it.

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106. *See* Securities Act of 1933 §§ 11, 17(a), 15 U.S.C. §§ 77k, 77q(a) (2000) (defining elements of securities-fraud violations); Securities Exchange Act of 1934 § 10(b), 15 U.S.C. § 78j(b) (2000) (same); 17 C.F.R. § 240.10b-5 (2001) (same).

107. This conundrum of clashing duties is not unique to corporate financing through public equity offerings. As others have noted, directors engaged in merger negotiations sometimes face a disclosure duty under federal securities that is inconsistent with fiduciary duties that they owe their stockholders under state law. *See* Ian Ayres, *Back to Basics: Regulating How Corporations Speak to the Market*, 77 VA. L. REV. 945, 954-56 (1991) (noting tension between directors' duty to shareholders and duty to disclose); Marcel Kahan, *Games, Lies and Securities Fraud*, 67 N.Y.U. L. REV. 750, 761-64 (1992) (noting how conflicting duties of corporate boards often bring them into violation of applicable securities law); Jonathan R. Macey & Geoffrey P. Miller, *Good Finance, Bad Economics: An Analysis of the Fraud-on-the-Market Theory*, 42 STAN. L. REV. 1059, 1060-72 (1990) (analyzing relative benefits provided by fraud-on-the-market theory as opposed to financial obligations to commit such acts). What is important is that whether the duties in this context are indeed in tension varies depending on whether the markets are efficient.

108. However, one could make a credible argument that the failure to exploit such pricing inefficiency is a dereliction of duty if not an actual breach. *See* Edward S. Adams & David E. Runkle, *The Easy Case for Derivatives: Advocating a Corporate Fiduciary Duty to Use Derivatives*, 41 WM. & MARY L. REV. 595, 644-56 (2000) (discussing corporate liability for failure to use derivatives).

109. This also means, of course, that wholly apart from business reasons for not effecting offerings at prices lower than values, legal rules deter such a practice as well. In any event, however, waste is a difficult claim for a shareholder to sustain doctrinally. *See* FRANKLIN A. GEVURTZ, CORPORATION LAW 346 (2000) (noting difficulty of meeting burden under corporate waste claim). But even while a judicial presumption might exist in favor of upholding a transaction, the doctrine justifies rescinding transactions in which the corporation did not receive "the equivalent to what it gave in the deal." *Id.*

That theoretical argument recognizes that a decision to effect a secondary offering of securities is a decision to sell part of the company to the buyers. Decisions to sell the entire company require a board as a matter of fiduciary duty to get the highest value for shareholders reasonably available and subject a board to enhanced judicial scrutiny of their decisionmaking process.[110] The predicate of this enhanced scrutiny of director action in selling a company is some degree of self interest facing a director (his job is in some sense at stake when the company is on the chopping block). But an analogous and even more acute conflict faces directors in this situation: failure to disclose may violate the federal securities laws and, in extreme cases, can result in jail time.[111] The specter of such severe federal consequences further sharpens the conflict between federal and state law.

Empirical evidence about how the conflict plays out in practice suggests that managers make these kinds of high-priced offerings often, although the evidence is equivocal.[112] Managers doing so exploit market inefficiency and privilege state law fiduciary duties to get the best deal they can for existing holders over federal disclosure duties calling for sharing their views of market pricing.[113] Compliance with both duties is not common. Any random survey

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110. *See* Paramount Communications, Inc. v. QVC Network, Inc., 637 A.2d 34, 43 (Del. 1994) (discussing director obligations); Revlon, Inc. v. MacAndrews & Forbes Holdings, 506 A.2d 173, 185 (Del. 1986) (finding that defensive measure worked to detriment of shareholders).

111. It is a crime for any person to violate "willfully" any provision of the federal securities statutes or the rules and regulations promulgated thereunder, and it is also a crime for any person to "willfully" (and in the case of the Exchange Act, "knowingly") make a false statement in a filing submitted to the SEC. *See* JAMES D. COX ET AL., SECURITIES REGULATION: CASES AND MATERIALS 952 (1991) (discussing implications of "willful" violations of securities law).

112. *See generally* Mark Bayless & Susan Chaplinsky, *Is There a Window of Opportunity for Seasoned Equity Issuance?*, 51 J. FIN. 253, 253-55 (1996); Tim Loughran & Jay R. Ritter, *The Operating Performance of Firms Conducting Seasoned Equity Offerings*, 52 J. FIN. 1823, 1837-42 (1997); Kenneth Kim & Hyun-Han Shin, *The Underpricing of Seasoned Equity Offerings: 1983-1998* (Social Science Research Network, Working Paper, 1999); Victor Soucik & David Allen, *Long Run Under-Performance of Seasoned Equity Offerings: Fact or an Illusion?* (Social Science Research Network, Working Paper, 1999); Debra Katherine Spiess & John Felix Affleck-Graves, *Long-Run Stock Returns Following Seasoned Equity Offerings* (University of Notre Dame Working Paper Series, 1999).

113. The evidence includes something even worse: firms planning equity offerings, both secondary and initial, often massage their earnings to indicate growth trends that are mere figments of accounting imagination in violation of securities laws. *See generally* S. W. Teoh et al., *Earnings Management and the Long Run Market Performance of Initial Public Offerings*, 53 J. FIN. 1935 (1998); S. W. Teoh et al., *Earnings Management and the Long Run Market Performance of Seasoned Equity Offerings*, 50 J. FIN. ECON. 63 (1998).

Evidence shows such earnings-smoothing in connection with stock options as well. *See generally* Robert W. Holthausen et al., *Annual Bonus Scheme and the Manipulation of*

of prospectuses for secondary offerings reveals virtually no indication that management believes an offering is made at a price greater than value. An exceptional case is Berkshire Hathaway's offering of a new class of stock in a recapitalization of the company. A conspicuous legend on page one of the prospectus for the offering announced that its top managers – famed investors Warren Buffett and Charles Munger – would not buy the stock at the offering price and would not advise their friends or family to buy it either, saying it was "not undervalued."[114]

Earnings, 19 J. ACCT. & ECON. 29 (1995). For instance, managers actively manage disclosure timing to maximize the value of their options, issuing negative news ahead of option grants and positive news ahead of option exercise. *See generally* David Aboody & Ron Kasznick, *CEO Stock Option Awards and Corporate Voluntary Disclosures* (unpublished manuscript available on SSRN, Nov. 1998, at http://www.ssrn.com). Notably, these disclosure management techniques are not likely to constitute violations of either the letter or the spirit of federal securities or state fiduciary law. *See* Charles M. Yablon & Jennifer Hill, *Timing Corporate Disclosures to Maximize Performance-Based Remuneration: A Case of Misaligned Incentives?*, 35 WAKE FOREST L. REV. 83, 102-03 (2000) (concluding that management bears little legal risk in timing disclosures). Instead, this practice constitutes a new variation on the old problem of agency costs, so that amelioration lies in ordinary tools of corporate governance such as board oversight and structuring option packages to avoid the enhanced risks posed by options paid at a single time (the "one big payday"). *Id.*; *see also* CUNNINGHAM, *supra* note 17, at 110-15 (discussing possible structuring of option packages).

114. Berkshire Hathaway Inc., Prospectus: Class B Common Stock (1996), *reprinted in* Robert W. Hamilton, *Reflections on the Pricing of Shares*, 19 CARDOZO L. REV. 493, 501-02 (1997). The prospectus stated:

> Warren Buffett, as Berkshire's Chairman, and Charles Munger, as Berkshire's Vice Chairman, want you to know the following (and urge you to ignore anyone telling you that these statements are "boilerplate" or unimportant):
>
> 1. Mr. Buffett and Mr. Munger believe that *Berkshire's Class A Common Stock is not undervalued at the market price stated above. Neither Mr. Buffett nor Mr. Munger would currently buy Berkshire shares at that price, nor would they recommend that their families or friends do so.*
> 2. Berkshire's historical rate of growth in per-share book value is NOT indicative of possible future growth. Because of the large size of Berkshire's capital base (approximately $17 billion at December 31, 1995), Berkshire's book value per share cannot increase in the future at a rate even close to its past rate.
> 3. In recent years the market price of Berkshire shares has increased at a rate exceeding the growth in per-share intrinsic value. Market overperformance of that kind cannot persist indefinitely. Inevitably, there will also occur periods of underperformance, perhaps substantial in degree.
> 4. Berkshire has attempted to assess the current demand for Class B shares and has tailored the size of this offering to fully satisfy that demand. Therefore, buyers hoping to capture quick profits are almost certain to be disappointed. Shares should be purchased only by investors who expect to remain holders for many years.

Id. (emphasis added).

Disclosure such as this discharges both duties – the duty to obtain the highest price reasonably available for a partial sale of the company and the duty to disclose to the buyers that managers believe the price being charged is greater than the value being bought. Experts and practitioners of corporate law and finance marveled at Berkshire's candor, confirming anecdotally the suspicion that the practice is not widely followed in corporate America. So if markets really are inefficient, then there are real tensions between state corporate law and federal securities law that are being ignored.[115]

If the conflict is real and the doctrine and practice suggest a privileging of state fiduciary duties over federal disclosure duties, the question is whether that is the correct hierarchy or whether it should be inverted (or, more extremely, whether both duties should simply be abolished). The source of the problem, as well as its cost, is price-value deviations. Accordingly, the rule of resolution should be the choice that most tends to close rather than to widen or ignore the gap.

Abolishing both duties risks sustaining the deviations and enabling management to take unbridled advantage of continuing deviations. Keeping only the fiduciary rule, or privileging it, would tend to produce buying pressure on the stock, thus widening or at least sustaining the price-above-value gap. Retaining or privileging the disclosure rule would tend to produce selling pressure, possibly creating a price-below-value gap. Keeping both and ranking them equally should theoretically maintain a healthy tension between these cross-pressures and therefore tend to produce a price closer to value.[116]

Indeed, compliance with both rules is also possible; at least in the case of the Berkshire Hathaway offering just mentioned investors fully subscribed the

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115. *See generally* Lawrence A. Cunningham, *Conversations from the Warren Buffett Symposium*, 19 CARDOZO L. REV. 719, 784-85 (1997). This paper was delivered at a live conference of several hundred experts, including Buffett and Munger. Following the presentation of this paper, the latter commented:

> It is an interesting story. You can argue that it demonstrates an important principle of law: you don't want the judges running the prisons or the detailed operations of the corporations of America or whatnot, and yet you want certain standards of behavior [for situations] that are so awful that you want judges or legislatures to intervene. Between that intervention point and the best possible behavior should be a big area; and you want a big area where it isn't illegal in the sense that courts will intervene, but where you allow room for a lot of behavior that's a lot better than the minimum standards. And I would argue that this prospectus was just an example of behavior that was better than the minimum standards of the civilization, and to the extent that anybody wants to make it an example for law students or anybody else, I encourage it.

116. Of course, due to cognitive biases, there can be no guarantee that disclosure will necessarily induce downward pressure on share prices.

caution-accompanied issuance. Thus, management discharged both these duties and obtained all it sought from the financing, and there was no reason to believe that the candid cautionary language had any immediate effect on the proper pricing of the shares. Even so, the evaluation of which of these two duties should be privileged when the two conflict – as well as evaluation of all other legal rules that bear on the regulation of such offerings – should be undertaken by considering the effects of those rules on the price-value relationship.[117]

2. *Distributing Funds*

A corporation can distribute funds to equity holders either through the declaration and payment of dividends or by share repurchases. Market inefficiencies can strongly influence directors' decisions concerning both types of distributions.

In the case of share buybacks, the economics are the mirror image of the economics of stock offerings. That is, repurchases are attractive to the corporation when the market price of its shares is *below* value. A stock trading at $40 but with an intrinsic value of $50 can be bought on the cheap by any investor, including its issuer. The effect for the company will be at least to narrow the price-value gap and in this way to generate some improvement in real returns to its shareholders through the buyback.[118]

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117. *See* Jonathan A. Shayne & Larry D. Soderquist, *Inefficiency in the Market for Initial Public Offerings*, 48 VAND. L. REV. 965, 977-85 (1995) (arguing that, in case of IPOs, securities law contains prescriptions to discourage or eliminate practices including stabilization, issuance of unduly positive research reports on recent IPOs, syndicate penalty bid, and refusal to lend shares for short sales).

118. Determining the return of paying $40 to repurchase stock worth $50 is not as simple as determining the return of paying the same amount to invest in real assets (say patent technology or plant expansion) expected to generate a like return. The real investment would generate a return of 25% ($50 of value generated on $40 of investment = $10 return/$40 investment). Share buybacks are not real investments, but re-slicing of the equity ownership pie using funds that were part of that pie. Investors commonly take buybacks as signals of managerial belief that shares are undervalued which, coupled with a smaller number of shares outstanding, produce increases in the market prices of the continuing shares. The result is unlikely to be perfectly accurate pricing of value as much as it is a narrowing of the price-value gap. Evidence shows that corporations do take advantage of these inefficiencies in precisely this manner and with these effects. *See generally* David Ikenberry et al., *Market Underreaction to Open Market Share Repurchases*, 39 J. FIN. ECON. 181 (1995). It is unlawful for a corporation to raise the price of its shares through buybacks for the purpose of inducing new purchases. Securities Exchange Act §§ 9(a)(2), 10(b), 15 U.S.C. §§ 78i(2), 78j(b) (2000). (Of course, none of this would be possible in efficient markets. In efficient markets, a corporate buyback may appear to increase demand and hence the price of its shares, but it also reduces the corporation's assets and earnings per share, creating downward price pressure that should offset the upward pressure

But such a move will not treat all shareholders equally. The gain in value from closing the price-value gap will accrue only to shareholders who continue to be shareholders after the repurchase. Those who sell in connection with the repurchase are selling at the price below value and do not enjoy the benefit of the higher price that more closely reflects actual value. And those selling shareholders who purchased the stock within a short time earlier at a price above $40 will be clear losers.[119]

Directors effecting a share repurchase in these price-below-value circumstances thus may discharge a duty to the corporation, but in the process impair the interests of a shareholder or entire group of shareholders.[120] Across the whole range of contexts in which buybacks might be effected,[121] this perspective exposes a major and usually hidden ambiguity in corporate law. Courts and commentators routinely say that directors and officers owe fiduciary duties to the "corporation."[122] That description is usually altered, when the context requires it, to refer to the corporation *and* its shareholders, as when directors are negotiating a sale of the corporation. Although one can go on to consider what comprises "the corporation" – employees, creditors, suppliers, communities, and so on – no further distinction between the corporation on the one hand and the shareholders on the other is typically pursued.[123]

There are cases in which corporate law must choose between shareholder groups, such as between preferred and common holders or between majority

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exactly.)

119. Thus, when a company announces a buyback at $18, less than a year after effecting an IPO at $36, and says the plan is "an excellent way of enhancing shareholder value," it is being somewhat disingenuous. *E.g.*, *Tycom Ltd. Board Approves $500 Million for Repurchasing of Shares*, WALL ST. J., Mar. 5, 2001, at B10.

120. In a corporate buyback from shareholders, a director's duties under state corporate law and federal securities law do not conflict in the way that they do in an offering to new shareholders. This is because a disclosure that says "we are repurchasing shares we believe are undervalued" is consistent with a corporate interest of allocating capital in ways that generate value to the corporation (*i.e.*, purchasing things at prices lower than values). However, this does not mean that a disappointed shareholder will not sue claiming breach of both these duties. *See generally* Staffin v. Greenberg, 672 F.2d 1196 (3d Cir. 1982); Rochez Bros., Inc. v. Rhoades, 491 F.2d 402 (3d Cir. 1973); American Gen. Ins. Co. v. Equitable Gen. Corp., 493 F. Supp. 721 (E.D. Va. 1980). If the disclosure is true, it should lead a rational shareholder not to sell.

121. Buybacks such as this may arise in a wide variety of circumstances. These run from ordinary capital allocation decisions that lead management to decide to effect a distribution to shareholders in the form of a buyback (instead of a dividend) to full-scale buyouts of the corporation (whether management buyout, leveraged buyout, or public buyout) as well as a variety of defensive techniques (greenmail, selective self-tenders, or other devices designed to reduce the total shares outstanding).

122. *See, e.g.*, Model Bus. Corp. Act § 8.30(a) (1998) (describing duties that directors owe to corporation).

123. *E.g.*, GEVURTZ, *supra* note 109, at 304-05.

and minority holders.[124] But there are few doctrinal areas in which corporate law has managed to identify, much less to resolve, the problem of shareholders – or, more precisely, one group of shareholders – versus the corporation.[125] One answer would be to return to the standard statements and conclude that the corporation's overall interests are privileged compared to the interests of any particular group.

There is substantial support for this in a significant range of contexts. Consider two types of defensive uses of buybacks: greenmail and selective self-tender. In the greenmail context, the argument is that the corporation is paying a price greater than actual value to a raider-shareholder. The courts have generally permitted this[126] (unless the board is doing so to perpetuate itself in office rather than to protect the corporation and its other shareholders[127]). In the selective self-tender context, the argument is that the corporation is paying a price below value. In *Unocal Corp. v. Mesa Petroleum Co.*,[128] for example, the board's selective self-tender was at a price functionally equivalent to the bidder's offering price, which the board had

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124. In the context of freeze-out merger pricing, some have distinguished between shareholders who purchased at prices that theoretically reflected a discount for the risk of being frozen out (*e.g.*, at a time when a majority block existed) from those who purchased at prices that did not reflect that discount (*e.g.*, at a time when no majority block existed). *Id.* at 737.

Shareholders whose cashing out contributed value in the form of tax benefits to the corporation are entitled to no greater share of the value than are shareholders of the same class whose cashing out did not make such a contribution. *See generally In re* Cawley v. SCM Corp., 72 N.Y.2d 465 (1988).

125. In the discrete context of the shareholder franchise the distinction appears more sharply. Board decisions affecting shareholder voting in director elections implicate the corporate governance balance of power between shareholders and directors. *See, e.g.*, Blasius Indus. v. Atlas Corp., 564 A.2d 651, 652 (Del. Ch. 1988) (scrutinizing board decisions to alter by-laws that directly affected shareholder voting dynamics). Such a situation comes close to implicating the question raised in the text concerning a shareholder right versus a corporate right, but is not precisely the same question. The doctrinal answer, of course, is that director decisions impairing the shareholder franchise are subject to more rigorous judicial scrutiny than are ordinary business decisions. This is because such decisions implicate not the duty of care, but the duty of loyalty, so that even a good faith decision that impairs the shareholder franchise can constitute an unintentional breach of the duty of loyalty. *Id.* at 663. But the basis of this approach is principles of agency law, which offer little help in solving the question raised in the text.

126. *See, e.g.*, Polk v. Good, 507 A.2d 531, 542 (Del. 1986) (finding buyback permissible when directors held justifiable belief of threat to corporation); Cheff v. Mathes, 199 A.2d 548, 554 (Del. 1964) (recognizing that corporation may repurchase own shares if board acts out of sincere belief that buyback is necessary to maintain "proper business practices").

127. *See* Heckmann v. Ahmanson, 214 Cal. Rptr. 177, 182-87 (Cal. Ct. App. 1985) (finding that greenmailer aided and abetted board's breach of fiduciary duties as well as breached his own "trustee" duties as nominal plaintiff in shareholder derivative suit on behalf of greenmailed company).

128. 493 A.2d 946 (Del. 1985).

complained was too low.[129] Even though the board was offering nonraider shareholders a price essentially below value, it was permitted to do so.[130]

A clear lesson from this pair of case types is that boards are permitted to pay selected shareholders prices both higher and lower than value.[131] This is true, however, only so long as there are no other grounds for finding a breach of fiduciary duty. But the focus on other breaches is quite striking, when the consequence is simply to avoid facing the harder question of to whom the duties run.

The *Unocal* court faced this question in response to the bidder's argument that excluding it from the offer was a breach of fiduciary duties owed to the bidder. The court rejected the argument, concluding that the bidder was causing the very threat that the board was trying to deflect and thus had no grounds to complain. What the court did not say, however, was that the board owed duties only to some of the shareholders.

Nor, more importantly, did the court say that those duties prohibit the board from paying those other shareholders a price below value. The *Unocal* court never even considered the significance of the board's offering price compared to the raider's bidding price, focusing instead solely on the surgically precise way that it neutralized the coercive element of the hostile bid. Similarly, in one of the rare greenmail cases to find the payment impermissible because the directors had paid it to entrench themselves in breach of fiduciary duties, the court rebuked those directors for paying a price that was high compared to the *market* price, without ever discussing the relationship of price to intrinsic business value.[132]

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129. The bidder offered $54 cash on the front end with a promise to offer $54 in face amount of junk bonds on the back end. Unocal Corp. v. Mesa Petroleum Co., 493 A.2d 946, 949-50 (Del. 1985). The target's board regarded the $54 cash as inadequate and the $54 in junk bonds as coercive. *Id.* at 950. It responded to the coerciveness element by offering $72 in junk on the back end, a price functionally equivalent to $54 cash and therefore just as inadequate as the offer complained of. *Id.* at 951.

130. It is worth noting that the board's price-below-value offer was made to neutralize the coercive nature of the raider's inadequate (price-below-value) offer by giving on the back end the equivalent of what was being offered on the front end and that the board's offer was not necessarily expected to succeed. This response was upheld as reasonable in relation to the threat posed. *Id.* at 958. That is not a trivial statement of corporate law.

131. Greenmail has been functionally restricted since the 1987 tax laws imposed a 50% excise tax on realized gains from greenmail. I.R.C. § 5881 (2000). As a result, there have been no occasions since then for judicial development of the corporate laws relating to this scheme. Selective self-tenders also have been functionally eliminated by the SEC's fair treatment rules requiring that offers be made to all holders for like consideration. The two examples remain apt, however, as both superseding rules are federal and neither alters the underlying state conception of the corporation and its relationship to its shareholders.

132. *See Heckmann*, 214 Cal. Rptr. at 182 (stating that corporation was repurchasing its stock "at a price considerably above market value"); *see also* Polk v. Good, 507 A.2d 531, 537

And then, of course, there is the dog that didn't bark: no court has held that a board is not permitted to effect a repurchase from some but not all shareholders at prices below value. Nor, aside from a small fraction of greenmail cases, are there cases saying that boards may not repurchase from some but not all shareholders at prices above value. Again, there are cases that involve offers at prices above value, but any judicial condemnation of these is based on factors other than the price-value equation – principally those factors relating to whether directors are acting for personal reasons of entrenchment or otherwise coercing holders into accepting the corporation's offer over competing offers.[133]

State corporate law permits corporations to deal in their own shares in open market repurchase programs, and nothing in federal law prohibits it. Present federal securities laws lack the jurisdiction to prohibit corporations from dealing in their own shares,[134] although Rule 13e-1 does provide that a repurchase during the pendency of another party's tender offer is treated functionally as a tender offer.[135] Courts ordinarily evaluate board decisions about open-market purchases under the business judgment rule and invariably ignore any question about price versus value.

Consider *Unitrin, Inc. v. American General Corp.*[136] An unwanted bidder offered a 30% premium over the market price in an all-cash, all-shares bid. The target board thought that the offering price was well below intrinsic business value. The market price rose. The board announced it still thought the market price below value.

Among other responses to this threat, the board a week later announced a program to repurchase substantial quantities of its stock, noting that directors who owned shares would not be selling. This was no surprise as the board was offering a price that it said was below value. Over the course of two weeks, Unitrin's investment bankers effected repurchases of about five million shares.[137]

(Del. 1986) (upholding approval of litigation settlement arising from greenmail repurchase on grounds that directors reasonably perceived threat to corporation and noting that "payment of a premium approximately 3% *over market* seems reasonable") (emphasis added).

133. *See, e.g.*, AC Acquisitions Corp. v. Anderson, Clayton & Co., 519 A.2d 103, 113-16 (Del. Ch. 1986) (enjoining self-tender at price ($60 per share) above value for up to 65% of shares on grounds that it coerced shareholders into taking self-tender offer over competing offer at lower price ($56) for at least 51% and up to 100%).

134. *See generally* Business Roundtable v. SEC, 905 F.2d 406, 411 (D.C. Cir. 1990) (noting that Commission mostly lacks power to interfere in corporate management).

135. 17 C.F.R. § 240.13e-1 (2001).

136. 651 A.2d 1361 (Del. 1995).

137. A side effect of the repurchase was striking: with those insiders not participating, their ownership interest in the corporation would rise from 23% to over 25% (and as much as

The bidder sued to enjoin the buyback. A Delaware chancery court agreed that the buyback was disproportionate to the threat,[138] but the Delaware Supreme Court disagreed.[139] Neither court, however, was alert to the price-value question. Indeed, in concluding that the reaction was proportionate within the meaning of *Unocal*, the supreme court said that the repurchase of shares on the open market was not discriminatory "because all shareholders can voluntarily realize the same benefit by selling."[140] Really? The board is saying that the market price is below intrinsic value. Yet it goes on the market to buy at that low-ball price, and the court inexplicably tells us that the selling shareholders thus receive a "benefit."

The court approved of the board's argument that it responded as it did for fear that its "ignorant or mistaken" shareholders would sell out at the low price being offered.[141] Yet the board then offered and paid to (presumably equally "ignorant or mistaken") shareholders owning five million shares that same low price, and that response was deemed reasonable.[142] Following this logic, if you threaten to steal from my nephew, it is a reasonable response if I prevent you from doing so by stealing from him myself!

So neither corporate law nor securities law appears to object to directors effecting buybacks at prices below value (or above value, unless it is green-mail) even when doing so helps some holders and hurts others. Which group

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28%), which is significant because of a pre-existing bylaw provision prohibiting certain mergers with less than a 75% shareholder vote. *Id.* at 1378, 1381.

138. There may have been a threat in the bidder's low-ball offer, but because this repurchase would lodge supermajority veto power in director-shareholders it was disproportionate. *Id.* at 1377.

139. The supreme court disagreed on the law and the facts. On the law, it said that the board's response to the takeover threat did not have to be strictly reasonable in relation to the threat so long as it was not draconian, coercive, or preclusive. *Id.* at 1386-88. On the facts, the shareholder-directors' 23% ownership already gave them effective veto power over a merger under the 75% bylaw because real turnouts at shareholder meetings are less than 100%; furthermore, the raider could win a proxy contest even after the repurchase program because all it would need to win was another 30.2% of shareholder votes, which, given a large institutional investor concentration in the stock, would be feasible. *Id.* at 1382-83.

140. *Id.* at 1388.

141. *Id.* at 1385.

142. Not coincidentally, the lower court and the supreme court observed that if the repurchase program were effected absent the takeover threat, it would have been evaluated under (and thus upheld by) the business judgment rule. And in remanding to the chancery court for consideration of whether the program was within the range of reasonableness, the supreme court instructed that one factor to consider was whether (although the court implied that the answer was certainly yes) with the repurchase program the board "properly recognized that all shareholders are not alike, and provided immediate liquidity to those shareholders who wanted it." *Id.* at 1389.

to hurt, it seems, is a matter for directorial business judgment. But should this be corporate law's response?[143]

A more precise response would be to call on managers to consider the impact of corporate decisions on particular shareholder groups. Most broadly, in capital allocation decisions such an approach would call for directors to make decisions based on shareholder-specific factors such as particular liquidity needs and tax brackets. Such an approach would be unwieldy to say the least and is sufficient reason for the law's unwillingness to impose such an arduous burden.

Yet there is a commonsensical appeal to affording the shareholders some protection of their idiosyncratic positions. In the context of repurchases, this appeal could be satisfied by a device far simpler and efficacious than requiring directors to consider shareholders' infinite particularity. The device is to give each shareholder a direct voice in choosing whether or not to accept the repurchase. This is not farfetched.

At present, there are two common and straightforward ways to effect share repurchases: in the open market or through formal tender offers.[144] The chief substantive difference between the two is that tender offers require a formal and direct communication from the board to each shareholder of the offer to purchase that shareholder's shares. In the open market route, the corporation enters the market anonymously and simply instructs its brokers to purchase shares on the open market. The corporation and the holders do not deal with one another, and shareholders are unaware that they are selling to the company.

The chief regulatory difference between open market purchases and self-tenders is that the latter must comply with Section 13(e) of the Securities

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143. In the case of repurchases in connection with effecting a management-led leveraged buyout, some additional judicial scrutiny is brought to bear, and sometimes even directors will see to it that purchases by board and management members must be made at prices at least equal to values for the benefit of equity holders (even if this comes at the expense of, say, debtholders, as in the famous *RJR Nabisco* case). *See generally* Met. Life Ins. Co. v. RJR Nabisco, Inc., 716 F. Supp. 1504 (S.D.N.Y. 1989) (involving leveraged buyout that debtholders alleged reduced value of bonds); *see also* Deborah A. DeMott, *Introduction: The Biggest Deal Ever*, 1989 DUKE L.J. 1, 3-7 (1989) (outlining decisions faced by corporate board involving leveraged buyouts).

144. Selective repurchases in arm's-length buybacks are also possible. These can also be effected at prices that differ from value, but general disclosure by the buying corporation is usually adequate to overcome claims of unfairness. *See, e.g.*, McCormick v. Fund Am. Cos., 26 F.3d 869, 884 (9th Cir. 1994) (finding "general and succinct" disclosure to shareholder selling back to corporation adequate). In a manner functionally analogous to the *Unocal* result of condoning a buyback at a price below value so long as the program is reasonable given the defensive context, it is also permissible to effect an arm's-length buyback at a price below value so long as disclosure to that effect is made.

Exchange Act of 1934[145] and Rule 13e-4[146] thereunder, including the disclosure requirements of the Williams Act.[147] Which of these is better from the standpoint of the conundrum that otherwise arises when a price-below-value buyback may help the corporation and continuing shareholders, but hurt noncontinuing shareholders? Which, moreover, is superior, when you also observe that shareholders may be operating with imperfect rationality and in accordance with the various cognitive biases catalogued in Part II?

Informing shareholders that management is effecting the repurchases on the grounds that it believes price is below value would be prudent. Shareholders then could make a more fully informed decision about whether to discontinue all or part of their investment. According to this view, the fact that the corporation is on the other side of the trade would be material information. It thus follows that management should inform shareholders of all buyback programs, and those managers who do so deserve credit for candor.

Should all managers be required to do so? Or, should at least one factor in the determination of which share repurchase programs constitute a "tender offer" be whether management's opinion is that the corporation is offering a premium or a discount to intrinsic business value? What is most striking about this inquiry is that the usual formulation for determining whether an issuer's repurchase program is a "tender offer" includes as a factor whether a *premium* to *market* is being paid.[148]

That may be an important factor and a good reason to compel the tender offer approach rather than to permit the anonymous open-market approach. After all, in this case, selling shareholders benefit while continuing shareholders are hurt. But the case for tender-offer formality and disclosure and timing regulations is no less compelling in the case in which management believes the price being offered is *less* than the *value* being purchased (*i.e.*, continuing shareholders benefit and selling shareholders are hurt).

SEC v. Carter Hawley Hale Stores, Inc.[149] provides the leading and most comprehensive judicial analysis of whether an open-market repurchase pro-

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145. 15 U.S.C §§ 78a-78mm (2000).

146. 15 C.F.R. § 240.13e-4 (2001).

147. 15 U.S.C. §§ 78m(d)-(e), 78n(d)-(f) (2000). The Williams Act requires a bidder to disclose fully plans, background, and financing and also requires disclosure by any 5% holder of stock of the fact of that level of ownership (a slight tilt in the playing field that has the effect of pushing bid prices higher) plus imposes timing period rules and a few fair treatment rules (shareholders must have withdrawal rights, all holders must receive the price paid to the highest holder, and offers for less than all are pro-rated across all shares tendered). *Id.*

148. The Williams Act does not define the term "tender offer," leaving its definition to judicial determination.

149. 760 F.2d 945 (9th Cir. 1985).

gram is a tender offer subject to the Williams Act.[150] The court applied an eight-factor test, developed in earlier cases, to make the determination.[151] The most important of these for the present discussion is the factor that asks whether purchases were made at prices constituting a premium over the current market price.

The Securities and Exchange Commission observed that the price paid was a premium to the pre-hostile-bid price. The court, however, observed that the bids were merely at market and took this occasion to determine whether a premium was paid. Thus, neither the SEC nor the court examined the more important questions: management's view of the price in relation to value and, more to the point, whether that price was less than value.

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A policy that promotes the use of the self-tender rather than the open-market route would broaden the power of existing shareholders to decide and would contract the power of boards. The narrow definition of tender offer and the limited disclosure obligations imposed in connection with open-market purchases made without special knowledge of impending corporate transactions (material nonpublic information does not include views about the proper pricing of business value) mean that the law does not presently do this.

In tension with this idea, state law allocates plenary power to boards, subject to periodic shareholder votes, including board elections. But when rules governing the exercise of board power break down – as when the question

150. The Williams Act, adopted in the late 1960s, sought to do for tender offers what the pre-existing proxy rules did for proxy contests: produce for shareholders full and fair disclosure with sufficient digestion time before any decision must be made. The disclosure rules were to level the playing field between bidders and boards and to keep the open market for shares unimpeded. This is particularly important because many courts have emphasized that the regulations governing open market repurchases are less burdensome. The proxy rule amendments have been relaxed for proxy contests to reduce the scope of publication and communication among shareholders deemed within the proxy rules, but the rules narrowing this scope expressly exclude registrants from the exemption. The parallel between the tender offer and Williams Act context is strong.

151. SEC v. Carter Hawley Hale Stores, Inc., 760 F.2d 945, 950 (9th Cir. 1985) (quoting Wellman v. Dickinson, 475 F. Supp. 783, 823-24 (S.D.N.Y. 1979)). The eight-factor test from *Wellman* considers whether (1) there was active and widespread solicitation of public shareholders for the issuer's shares, (2) the repurchases were made for a substantial percentage of shares, (3) the purchases were priced at a premium to the market price, (4) firm rather than negotiated terms were offered, (5) repurchases were conditioned on accumulating a minimum or fixed number or percentage of shares, (6) the program was limited in duration to a fixed period of time, (7) the offerees were subjected to sales pressure, and (8) public announcements of the program were preceded or accompanied by rapid accumulations of a large volume of the issuer's shares.

to whom the board owes its fiduciary duties yields fragmented answers – doctrine does, and rightly should, move some of that power back in the direction of the affected groups of shareholders who could lay claim as beneficiaries of those duties.

The current defense of this menu for managers is that there is also an implicit private-ordering solution to the surface dilemma that makes the problem dissolve. Managers sympathetic to the individual, tailored needs of shareholders can signal their sympathy by disclosing and following clear principles that guide their capital-allocation decisions. A no-dividend policy, for example, is suitable for a company with tremendous growth and investment opportunities and would attract investors in high tax brackets with no substantial liquidity needs.[152]

Even so, the practice and the results remain imperfect. The menu is prone to change and must adapt to meet new circumstances. An approach that avoids the problems of the *ex ante* perspective would simply be to lodge the particularized decisions impacting these holder-specific matters in the holders themselves. In the case of share repurchases, that simply means requiring that the directors adopt the form of the self-tender, in which each holder individually decides whether or not to sell his shares directly to the company, rather than permitting corporations to engage in open-market stock buybacks.[153]

As for managers actually signaling to shareholders certain traits and creating, in effect, a mall for them to shop in, there is no question that such managers exist and that many managers actually follow this sort of practice. Why they do so would be a mystery were the EMH true, but is an obvious policy when it is not. Observers draw this point by turning attention to the other major way in which managers can distribute funds to shareholders in the ordinary course – dividends.

Dividend theory and policy have been a particular specialty of the EMH, mainly by virtue of some features of the so-called irrelevance hypothesis

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152. Benjamin Graham prescribed this sort of disclosure concerning dividend policies, particularly policies involving stock dividends and stock splits. *See* BENJAMIN GRAHAM ET AL., SECURITY ANALYSIS 496-501(4th ed. 1962) (objecting to both these sorts of "distributions").

153. Legal treatment of the special case of "greenmail" warrants a further observation. These are repurchases that leave some stockholders out while paying a price greater than either the prevailing market price or the actual value to a third party posing threats to the corporation such as unwanted acquisition overtures. Cases reviewing directors' discharge of fiduciary duties in paying greenmail focus on the difference between the payment amount and the market price. *E.g.*, Heckmann v. Ahmanson, 214 Cal. Rptr. 177, 182 (1985) (upholding injunction against shareholder alleged to have aided and abetted corporate directors' breach of fiduciary duty in greenmail transaction in part on grounds that shareholder "knew it was reselling its stock at a price considerably above market value"). The real inquiry, however, should be the difference between the payment amount and intrinsic business value, not market "value."

propounded by Modigliani and Miller.[154] It essentially says that a firm's dividend policy (as to timing or amount) does not matter for the pricing or valuation of the company. The thesis depends on the accuracy of the EMH assumption that markets force prices to reflect value.

But under behavioral finance theory, which rejects the premise that prices inevitably reflect intrinsic business value, dividend policy starts to matter very much for pricing. That is, preferences for a particular design of cash flows may attract different sorts of investors to different securities that are otherwise identical in terms of intrinsic value (the present value of future cash flows). This means that dividends become a discretionary managerial tool that can be deployed to market the company's securities.[155]

Stock differentiation by dividend design is also evidently a market reality, as companies are reluctant to reduce, and especially to eliminate, established dividend payouts.[156] So it turns out that dividends do matter and can be used for a wide range of purposes.

This behavioral story of dividend policy does not necessarily mean that corporate law should begin to regulate dividends in any particular way.[157] The

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154. The Modigliani-Miller irrelevance thesis holds that the market value of a company is independent of capital structure. That is, when securities are correctly valued, based on cash flows, then the total market value of all of a firm's securities will equal the present value of all of its future profits. This means that any attempts by a company to use varying mixes of debt and equity to increase its market value would fail and are a waste of time. If the assumption of market efficiency is removed because markets are observed to be inefficient, then the thesis crumbles. The debt/equity mix thus becomes a potentially significant factor in market pricing because it can be used to create different sorts of cash flow streams for which different sorts of investors may have stronger or weaker preferences, with varying effects on market pricing. Legal academics have routinely embraced the Modigliani-Miller irrelevance thesis, but it has not escaped criticism either. *See* William W. Bratton, *Dividends, Noncontractability, and Corporate Law*, 19 CARDOZO L. REV. 409, 424-28 (1997) (discussing theory of capital structure as response to Modigliani-Miller irrelevance thesis); David G. Carlson, *Secured Lending as a Zero-Sum Game*, 19 CARDOZO L. REV. 1635 (1997) (criticizing Modigliani-Miller irrelevance thesis in secured-lending context).

155. *See* Jay Linter, *Distribution of Incomes of Corporations Among Dividends, Retained Earnings, and Taxes*, 46 AM. ECON. REV. 97, 99-100 (1956) (discussing factors in managements' decisions concerning dividends).

156. Plenty of companies whose earnings turn negative continue to pay out dividends according to historic rates. For example, after the fiasco of buying the Learning Channel led to substantial and sustained losses, Mattel continued to cut quarterly dividend checks.

157. In the ordinary course, there are virtually no legal restrictions on shareholder distribution policy (there are obviously rules relating to distributions to shareholders in final-stage contexts, such as dissolution, insolvency, fraudulent conveyance, and legal capital and related statutes). Virtually no court has ever upheld a shareholder challenge to a public corporation's distribution policy. *E.g.*, Klang v. Smith Food & Drug Ctrs., Inc., 702 A.2d 150, 154 (Del. 1997) (deferring to slight of hand in which, just before launching self-tender for shares, board

theory of the second best still applies, and there remain good reasons for judicial deference to directors concerning dividend policy, such as not having courts make decisions for businesses about whether and to what extent to expand. The behavioral story can even defend bolstering judicial deference, for when different shareholders place different utilities on various income streams, it will be impossible for a board to please all shareholders and just as impossible for a judge to do so.

Judicial deference to board decisions may need to be bolstered in a world that recognizes inefficient markets due to investor behavior because the number of variables over which discretion must be exercised multiplies. Take an example from an actual case.[158] A company holds stock in another company with a tax basis of $30 million and a current market price of $4 million, and its board decides to withdraw from that investment. There are two ways to do so.

Plan A is to distribute the stock as a dividend to stockholders. That would result in a reduction of the asset side of the balance sheet of the carrying value of the stock and a reduction to the owner's equity portion of the balance sheet in like amount. The holders would get $4 million. Plan B is to sell the stock, take a hit to income of $26 million for Generally Accepted Accounting Principles (GAAP) purposes and income tax purposes and thus reduce tax liability to the order of about $8 million. The company would then distribute to shareholders the $4 million in proceeds it would have distributed under Plan A plus the $8 million tax savings.

When American Express faced this tradeoff, it chose Plan A, and shareholders sued to enjoin that decision, arguing the superiority of Plan B. The court sided with the board, despite the evident economic sense of the shareholders' argument for Plan B. Although it is easy to criticize the board's Plan A as foolish on its face,[159] an argument in its favor is how the market responds to the choices – an external (price) perspective rather than an intrinsic (value) perspective.

Plan A imposes no hit to the income statement and requires no reduction in reported earnings per share, whereas Plan B imposes both. Plan A directly affects only the balance sheet. To the extent that market participants focus on

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revalued its assets and liabilities, producing sufficient surplus to effect buybacks); Gabelli & Co. v. Liggett Group, Inc., 444 A.2d 261, 266 (Del. Ch. 1982), *aff'd*, 479 A.2d 276 (Del. 1984) (deciding that minority shareholder of subsidiary corporation faced with being cashed out in merger orchestrated by majority cannot compel payment of corporation's regular quarterly dividend).

158. Kamin v. Am. Express Co., 383 N.Y.S.2d 807 (Sup. Ct. 1976), *aff'd*, 387 N.Y.S.2d 993 (App. Div. 1976).

159. *See* Elliott J. Weiss, *Teaching Accounting and Valuation in the Basic Corporation Law Course*, 19 CARDOZO L. REV. 679, 691 (1997) (calling board's decision "demonstrably foolish").

the income statement and earnings per share rather than on the balance sheet and owner's equity, the board's decision may be seen as outsmarting the market. The board showed skepticism about market efficiency, an awareness of behavioral finance, and the court, knowingly or not, allowed the board sufficient discretion to do so. The court rightly showed skepticism about imposing the rational decision in an irrational world.

But to the extent that judicial deference has rested on the implied view that market discipline was adequate to police directorial machinations in dividend policy, behavioral finance undermines it. It raises the possibility that corporate law's highly *laissez faire* view of boards' dividend decisions should be revisited. Doctrinally, this could be as simple as recognizing more ways in which dividend policies can amount to bad faith, drawing perhaps on the standards set forth in close-corporation cases treating the withholding of dividends as oppressive conduct.[160] Though these close-corporation cases remain less instructive for the public corporation context with respect to the differing preferences of discrete shareholders,[161] their rules about mixed motives or bad faith could be generalized and broadened to police director failure to consider these tradeoffs.[162]

3. Deploying Funds

Funds not distributed to investors are available for deployment in investment. It is useful to distinguish between the general form of investment and

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160. *E.g.*, Fox v. 7L Bar Ranch Co., 645 P.2d 929, 934 (Mont. 1982) (basing conclusion of hardship on withholding of dividends); Donahue v. Rodd Electrotype Co., 328 N.E.2d 505, 518 (Mass. 1975) (stating that controlling group may not use its position to obtain disproportionate advantages); Dodge v. Ford Motor Co., 170 N.W. 668, 685 (Mich. 1919) (finding that board should declare dividend because it carried large cash balance); Smith v. Atlantic Props., Inc., 422 N.E.2d 798, 803 (Mass. App. Ct. 1981) (finding failure to declare adequate dividend recklessly ran risk of penalty taxes).

161. *See* Henry G. Manne, *Our Two Corporation Systems: Law and Economics*, 53 VA. L. REV. 259, 280 (1967) (recognizing that dividend policy in closely-held corporations will often reflect personal needs of controlling shareholders).

162. *Compare* Victor Brudney, *Dividends, Discretion, and Disclosure*, 66 VA. L. REV. 85 (1980) (concluding that added disclosure regarding dividends would benefit public investors), *and* Victor Brudney, *Equal Treatment of Shareholders in Corporate Distributions and Reorganizations*, 71 CAL. L. REV. 1072 (1983) (arguing for equal treatment of shareholders in distribution or reallocation context), *with* Daniel Fischel, *The Law and Economics of Dividend Policy*, 67 VA. L. REV. 699, 700 (1981) (arguing that "current legal rules giving management virtually unlimited discretion in making the dividend decision maximize shareholder welfare").

The logic of limiting share buybacks to self-tenders does not apply to dividend decisions, for the latter are simply distributions with no offsetting reduction in outstanding shares. A functionally equivalent limitation on the discretion ordinarily given to director decisions would consider the extent to which consideration has been given to disparate interests and the effects of board decisions on discrete shareholder groups.

investment effected by the acquisition of other existing businesses. In the case of such acquisitions, it is acquisitions that are paid for in stock that are chiefly affected by market inefficiencies.

Consider the following example, supposing at the outset an efficient market.[163] Company *A* is selling at $100 a share and Company *B* at $80 a share, but combining them as Company *AB* would create enough synergy to yield a trading price of $102. Then, contrast two merger dynamics.[164]

First, assume that Company *A* offers an even one-for-one share exchange of *A* for *B*. *B*'s holders and its board are likely to respond favorably, on the grounds they are getting a share priced at $100 for a share priced at $80. A court under current law would scrutinize the *B* board's conduct and decision in this case, but would almost certainly find that it met its fiduciary duties.[165] Under current law no such enhanced scrutiny would apply to *A*'s board, even though it is paying a considerable premium or, more precisely, selling part of itself to combine *B* with *A*, at a $2 per share profit.[166]

Second, assume that Company *B* offers the same one-for-one share exchange of *B* for *A*. *A*'s holders and board are more likely to respond unfavorably, on the grounds they are giving up a share priced at $100 for a share priced at $80. *A*'s board is now subject to enhanced judicial scrutiny of its actions and may be found to have violated its duties if it accepts such a lower price. *B*'s board this time has no such judicial scrutiny to fear.

The economics of the transactions are identical in terms of what the shareholders had versus what they end up with. Either way, *A* holders had *A* stock at $100, and they end up with *AB* stock at $102; *B* holders had *B* stock

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163. This example is drawn from an interchange that took place at a symposium featuring Warren Buffett's letters to Berkshire Hathaway shareholders. *See* Cunningham, *supra* note 115, at 749-53 (relating Warren Buffett's investment advice to shareholder investors).

164. By statute, stock-swap statutory mergers always require board approval by each constituent corporation as well as shareholder approval of each, except in the case of small-scale mergers, upstream or downstream mergers, and holding company mergers. *See* DALE A. OESTERLE, THE LAW OF MERGERS AND ACQUISITIONS 23-27 (1999) (summarizing different types of mergers). In some states, the swap can be effected by a share exchange agreement under which the acquiring company's shareholders do not get to vote, but only so long as dilution is not too great, *e.g.*, Model Bus. Corp. Act §§ 6.21(f), 11.04 (1998), which is the minority of cases.

165. This would constitute a "sale" of the corporation calling for enhanced judicial scrutiny of the board's actions under the leading takeover cases noted in the above discussion of share offerings. *See* Paramount Communications, Inc. v. QVC Network, Inc., 637 A.2d 346, 349 (1994) (stating that sale or change in control of corporation triggers *Revlon* duties on part of board to seek highest reasonably available value for shareholders); Revlon, Inc. v. MacAndrews & Forbes Holdings, Inc., 506 A.2d 173, 184 (Del. 1986) (stating that when sale of company becomes inevitable, board has duty to obtain highest price for shareholders).

166. This would not constitute a "sale" of the corporation triggering such scrutiny.

at $80 and end up with *AB* stock at $102. The forms of the transactions are quite different in terms of who is buyer, who is seller, and who is paying a premium or getting a discount. Why do the forms end up being more dispositive than the economics, both as a business matter in terms of the *A* board's response and as a legal matter in terms of which board is subject to enhanced judicial scrutiny?[167]

If markets were purely efficient and the numbers in this hypothetical reflected actual values, then the form should be subordinated to the economics. In both scenarios, the boards should respond the same way, and courts should apply the same level of review to each board's actions. Yet this is not so. Boards do respond differently, and judges review their decisions differently.

So suppose that markets are not efficient. If those numbers are not values but prices, then the different behavior and levels of review starts to make sense. For example, it is possible that *A*'s board believes its stock is overpriced at $100 and that it is really worth only $80. If so, the transactions end up being quite different. In the first scenario, *A* is not really paying a premium at all to get its shareholders stock worth $102; in the second scenario, it is not receiving any premium for its contribution to the increase in value of *AB*.[168]

This story even suggests that the reasons for market inefficiency include those identified by behavioral finance. *A*'s board may have different assessments of the price-value relationship of its stock depending on whether it is acting as the proposer or proposee in the exchange. And boards and judges evince greater concern about shareholders receiving too little than about their corporations paying too much.[169] These responses echo the endowment

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167. Forms assume a transcendent place in corporate mergers and acquisitions, of course, with identical substantive results capable of being achieved though quite different routes carrying varying legal requirements. Thus, a statutory-based stock merger leaves two groups of shareholders owning two separate businesses, and state statutes require votes of both and give each group appraisal rights. One of the parties could instead buy the target's assets paying in stock, distribute that stock to the target's shareholders, then have the target dissolve, producing the identical result, but bypassing the need for target shareholder voting or appraisal rights. Courts respect these legal differences that arise from formal structural alternatives, with only tiny inroads against form under the *de facto* merger doctrine.

168. These examples show difficulties that extend well beyond now standard non-EMH critiques of particular legal practices. These critiques theorize that price formation is driven by the marginal buyer of shares (*i.e.*, those with the least optimistic expectations of the future). Other shareholders may value the shares at levels substantially higher than the prevailing price. This view of pricing leads to a series of critiques of typical legal responses to takeovers, such as that a bid exceeding market price constitutes a premium to the target's shareholders when all it really amounts to is a premium for the target's marginal shareholders. *See generally* Lynn A. Stout, *Are Stock Markets Costly Casinos? Disagreement, Market Failure, and Securities Regulation*, 81 VA. L. REV. 611 (1995).

169. This description is itself revealing – shareholders receive payment upon a takeover

effect – shares being given up are seen as carrying greater value relative to shares being used as currency to acquire something else. More broadly, the contrast in these cases admits behavioral explanations of frame dependence combined with loss aversion.[170]

Whether one is the buyer or the seller does matter – form matters. Markets do not produce divine answers to business and social problems. A role for courts remains. Courts should examine these situations differently because different perceptions and risks are at stake. Even if in theory the economics of the transactions are identical, in practice they are not.[171]

Courts could ignore the cognitive differences and examine only the economics. The standard of director behavior would be identical in both cases. Or it could recognize, along with the directors, that characterizing or positioning one party as buyer and one as seller does make a difference, even if not as a matter of economics.

Under this approach, judicial review would not only evaluate the economics of the transaction, but also take into account perception and cognitive bias. Here a real conundrum opens up. Under the business judgment rule and other deferential standards, the touchstone is what the reasonable person would have done. In this setting, there is an admission that reason is muted, suffused with heuristics. The rhetoric of reasonableness is discordant with the

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whereas corporations make the payment.

Buying other companies with stock when your stock is overpriced seems potentially value enhancing. One risk is that even if you use scrip trading at 5 that is worth 4, you may still be tempted to use it to buy something that is worth 3. Indeed, the problem of buyer overpayment, sometimes called the winner's curse, is exacerbated by overpriced stock with which to pay. Of course, the seller faces a mirror image of the buyer's dilemma. *See* CUNNINGHAM, *supra* note 17, at 125-41 (detailing aspects of overpayment of companies with corporate stock); *see also* Bernard Black & Reinier Kraakman, *The Uncertain Search for Hidden Value*, 96 NW. U. L. REV. 521, 523-26 (2002) (describing and criticizing theory of Delaware takeover cases as reflecting view that boards are aware of business value that shareholders are not); James A. Fanto, *Braking the Merger Momentum: Reforming Corporate Law Governing Mega-Mergers*, 49 BUFF. L. REV. 249, 250-55 (2001) (articulating type of legal reform designed to rein in "stock-for-stock mega-mergers"); James A. Fanto, *Quasi-Rationality in Action: A Study of Psychological Factors in Merger Decisionmaking*, 62 OHIO ST. L.J 1333, 1335-42 (2001) (discussing psychological motivations present in "mega-merger" decisionmaking).

170. *Cf. supra* note 17 (illustrating phenomenon of frame dependence by offering examples of choice between two alternatives with identical financial outcomes, but traversing two quite different paths).

171. The apt but blasphemous quip is the apocryphal academic lament: "It may work in practice, but it will never work in theory." This in turn brings to mind a useful theory of theories, which is that good theories have practical applications. *See generally* Symposium: Theory Informs Business Practice, *Roundtable Discussion: Theory's Contribution to Corporate Law and Practice*, 77 CHI-KENT L. REV. 121 (2001) (examining effects of efficient market theory on legal analysis of market-related issues).

reality of the deference.[172] It is deference to the cognitively biased, not to the reasonably prudent man. Or are these, after all, the same people?[173]

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The deployment of funds other than through corporate acquisition is less clearly affected by stock market inefficiencies. The exploitation of timing and mispricing on the financing side does not imply anything about use of proceeds on the nonacquisition investment side. For example, a company could exploit an overpricing situation by effecting a secondary offering, but then simply hoard the cash; or it could exploit underpricing by effecting a share buyback, but simultaneously cut its dividend level to keep net investable funds the same.

Important legal and policy questions nevertheless arise. First, should firms be required or encouraged to exploit market inefficiencies in these ways? If so, what about any conflicting duties, such as disclosure obligations, that may impinge upon doing these things? Second, even if firms should be allowed to do these things, what effect should their doing so have on the real investment side of the equation? That is, should these financing tactics be exploited only so long as they have no effect on the substantive capital allocation decisions, or should it be recognized that such an effect is unavoidable?[174] Questions such as these extend far beyond the particularized relationship between directors/managers and shareholders. Solutions are only now being sought by economists, who have been discarding EMH assumptions and trying to grapple with inefficiencies that drive corporate financing and possibly investment decisions.

Clearly, these decisions have a bearing on the periodic booms and busts that financial markets experience, and these in turn impact the markets for real assets from real estate to franchises.[175] Outstanding research issues include the

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172. *Cf.* Kent Greenfield & John E. Nilsson, *Gradgrind's Education: Using Dickens and Aristotle to Understand (and Replace?) the Business Judgment Rule*, 63 BROOK. L. REV. 799, 818 (1998) (noting tension between duty to maximize shareholder wealth and judicial deference).

173. If courts pierced the form to get at the substance, they would be overcoming framing and loss aversion biases. If directors and judges have acted according to those biases in the past, it is reasonable to suppose shareholders would too. If that is correct, then perhaps judges should simply reflect the biases that shareholders and directors share and permit director conduct that comports with that stand (even if it is a product of cognitive biases that do not comport with rational choice theory). On the other hand, if we recognize that these biases produce erroneous judgments in terms of maximizing end states, judges when capable of doing so should penetrate them and prescribe results that comport with rational choice theory.

174. *See* SHLEIFER, *supra* note 7, at 184-90 (discussing financial consequences of inefficient markets).

175. For example, a firm that constantly seeks to exploit market inefficiency by issuing

precise shape and magnitude of the bearing and the desirability of the boom/bust cycle in both financial-asset and real-asset markets. In financial markets, for example, though busts that follow booms can have devastating effects on people, businesses, and communities, the boom that precedes it often generates vastly greater wealth than is lost in the bust.[176] Even so, distributive questions are unanswered, and policy touchstones remain elusive for these macro social questions.

At present, therefore, all law and legal policy can do is focus on the relationship between management and shareholders (existing and prospective). Sticking to that legal knitting calls for keeping in force fiduciary and disclosure duties regulating share issuances that seem in tension, heightening judicial willingness to superintend director decisions concerning corporate distributions, and recognizing that cognition and perception – in addition to pure economics – play an important role in director decisions approving stock-for-stock mergers and acquisitions and judicial scrutiny thereof.

D. Litigation

This piece finishes up by considering two of the most striking areas in which the EMH has been expressly used in corporate and securities law, both relating to litigation. The first concerns the fraud-on-the-market theory in stock-price-drop securities-fraud lawsuits. The second concerns the stock market exception to the appraisal remedy otherwise available in cash-out mergers and other cases.

1. Fraud-on-the-Market Theory

The fraud-on-the-market theory is a legal doctrine that permits plaintiffs to maintain securities-fraud class actions without the need to prove the reliance element of individual claimants essential to ordinary common-law fraud claims.[177] The reliance element is presumed to be satisfied for claims relating to securities that trade in public capital markets on the theory that the alleged

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overpriced securities may use some of these proceeds to invest in sub-optimal projects, and this can create bubbles in real investment markets, as happened in various Florida land rushes and railroad development enterprises. *See id.* at 188-90 (discussing market efficiency as relating to booms and busts).

176. Bubbles can thus be socially desirable when they enable the funding of otherwise unfundable projects, which can in turn produce substantial wealth, as Keynes suggested was the case in the 1920s market boom and as may have been the case in the late 1990s market boom. *Id.* at 189-90.

177. This judicial innovation renders the 1934 Act's anti-fraud provisions more like those under the 1933 Act, Sections 11 and 12(a)(2), which are strict liability provisions that dispense with the reliance requirement (as well as the scienter requirement). Securities Act of 1933, 15 U.S.C. §§ 77a-77aa (2000).

fraud was reflected in the price at which plaintiffs traded securities. In other words, the fraud-on-the-market theory assumes that certain types of markets are efficient in the sense described by the EMH.

The fraud-on-the-market theory emerged in the federal district and circuit courts in the late 1970s and early 1980s and was endorsed by a divided Supreme Court in *Basic, Inc., v. Levinson*.[178] Thereafter, hundreds of federal cases regularly applied the doctrine as a matter of routine. The flow of securities-fraud cases to federal courts was interrupted for several years, however, after Congress enacted legislation in 1995 seeking to limit or eliminate class action strike suits in stock-price-drop cases, cases in which the fraud-on-the-market theory had frequently been used. Without explicitly addressing the fraud-on-the-market theory, this legislation put numerous restrictions on such suits.[179]

The new statutory barriers seemed to have outweighed the benefits of the fraud-on-the-market theory, for increasing numbers of these cases were afterwards brought in state courts, even though no state high court had embraced the fraud-on-the-market theory.[180] That unintended effect was stemmed with the passage, in 1998, of additional federal legislation requiring that any securities- fraud action brought on behalf of a class of more than fifty individual investors must be brought in federal rather than state court.[181] Back the cases went to federal court, and roaring back to vibrancy with them was the fraud-on-the-market theory, as to which this legislation again was silent.

In efficient markets, the fraud-on-the-market theory is an obvious triumph of logic, law, and policy. The price reflects everything publicly known, including fraudulent statements. Investors look to the price in making decisions and use it when they actually trade. So they rely on the statements when they trade, paying a fraudulently inflated price when they buy or receiving a fraudulently deflated price when they sell. But with inefficient markets, the

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178. 485 U.S. 224 (1988).

179. Called the Private Securities Litigation Reform Act of 1995, the restrictions include staying discovery while any motion to dismiss is pending, raising the specificity in pleading fraud to allege a "strong inference" of fraud, and limiting damages to the difference between the plaintiff's trading price and the security's mean trading price during the ninety days after the fraudulent statements were cured. 15 U.S.C. §§ 78u-4, 78ff (2000); *see* Lawrence A. Cunningham, *A Triage Approach to Heightened Pleading Under the Private Securities Litigation Reform Act*, ASPEN LAW & BUS. (Oct. 1999) (discussing statute's pleading requirements), *available at* http://www.cardozo.yu.edu/heyman/triage.html (last visited Sept. 17, 2002).

180. *See, e.g.*, Kaufman v. i-Stat Corp., 754 A.2d 1188, 1195-96 (N.J. 2000) (refusing to rely on fraud-on-market theory); Malone v. Brincat, 722 A.2d 5, 7-13 (Del. 1998) (same).

181. Securities Litigation Uniform Standards Act of 1998, Pub. L. No. 105-353, 112 Stat. 3227 (codified in scattered sections of 15 U.S.C. §§ 77-80 (2000)).

theory crumbles. Investors may look at, even rely on, the market price, but the price has no necessary connection to the statements at all. To continue to embrace the fraud-on-the-market theory in the face of evidence of market inefficiencies is to indulge in a fiction.

There is nothing inherently wrong with relying on a fiction. Corporate law is itself a fiction, after all. But it is useful to be aware that this is what is being done. Yet the tenacity with which federal courts have held onto the fraud-on-the-market theory without admitting that it is fiction does not reflect so much a devotion to the EMH as such, but rather a recognition that the fraud-on-the-market theory is a useful tool to solve administrative problems of securities- fraud class actions. The main appeal of the fraud-on-the-market theory is that in the securities-fraud class action context, presuming reliance is virtually always necessary to enable a lawsuit to be certified as a class action. Without the presumption, factual issues open up that require intensive discovery and plaintiff-by-plaintiff inquiries concerning individual reliance that would often be punishing if not prohibitively expensive.[182]

However, even if the fraud-on-the-market theory is a pragmatic solution to a real problem, when the firmaments of a legal theory are unsound, as in the case of the EMH underlying the fraud-on-the-market theory, then either the theory should be recognized as a fictional tool rather than rearticulated as social science gospel, or another tool more firmly rooted in empirical evidence should be developed to solve the problem. Evidence shows that the EMH is false, that prices do not always or even often reflect the material false statements or omissions corporations make. It also shows that investors do not always or even often respond to such information in rational ways but according to a whole set of cognitive biases that make presumptions of reliance on the statements through reliance on price farfetched.

Even the doctrinal bases of the fraud-on-the-market theory are a bit farfetched. For example, a chief legal basis of the theory is its functional equivalence to the indirect reliance doctrine. The indirect reliance doctrine permits satisfaction of the reliance requirement in ordinary fraud cases by pointing to statements made, not by the defendant directly, but by his agent or others acting at his direction with the intention that the plaintiff should hear

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182. An innovative economic argument favoring fraud-on-the-market theory's dispensing with the reliance requirement holds that risks of misrepresentation in securities fraud are greater than in transactions involving real goods, that therefore securities-fraud actions should create greater deterrence than the common-law deceit action, and that reducing the reliance requirement is a reasonable way to do so. *See* Nicholas L. Georgakopoulos, *Frauds, Markets, and Fraud-on-the-Market: The Tortured Transition of Justifiable Reliance from Deceit to Securities Fraud*, 49 U. MIAMI L. REV. 671, 727-28 (1995) (discussing effects of faulty market reliance).

and rely on them.[183] If the market functions as such an agent or third party, then the fraud-on-the-market theory is functionally equivalent to the indirect reliance doctrine.[184] Strange or strained as this analogy may at first seem, it carries some weight if the markets are in fact efficient. If they are not efficient, however, then the unpaid fictitious agent of the defendant is acting outside the scope of its authority, and the indirect reliance analogy breaks down.

The theory can be understood in ways that distance it from the truth of the EMH, but these strategies do not fully succeed either. For example, one doctrinal strategy for defending the fraud-on-the-market theory without placing too much faith in the EMH recognizes that the theory does not excuse reliance, but rather furnishes a rebuttable presumption of reliance. This works to permit defendants to show that plaintiffs did not rely on the statements, as by showing that the plaintiff would have traded the way he did even if he knew the statement was false or that the statements did not affect the price. It makes room, in effect, for recognition of nonefficient markets and even the insights of behavioral finance. This stance thus shifts the burden from the plaintiff to prove reliance to the defendant to prove its absence. The trouble is, if the rationale of excusing the former is the administrative difficulty of individual proof in a class action suit, then the theory does not eliminate this evidentiary hurdle, but merely shifts it to the other party.

Beyond these doctrinal and theoretical problems, a better way to solve the administrative challenge would be to create or identify easily proven indicia of reliance. The SEC certification program mentioned earlier could be put to work in this effort. It would be reasonable to presume that those investors having taken the SEC investor program and earned its certification have been trained to think properly about the fundamentals of investing and of behavioral finance. That is, this group would reasonably be expected to listen to statements that management makes and to act on them in ways that approach accordance with principles of rational choice theory (admitting that plenty of cognitive biases would persist).[185] Compared to the EMH, this could be a superior basis for judicial presumptions of reliance by members of a putative class.

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183. *See, e.g.*, *Kaufman*, 754 A.2d at 1196-97 (finding indirect reliance to be element of fraud claim).

184. *See* Basic Inc. v. Levinson, 485 U.S. 224, 244 (1988) (calling market defendant's "unpaid agent") (quoting *In re* LTV Securities Litigation, 88 F.R.D. 134, 143 (N.D. Tex. 1980)).

185. Of course, some who learn behavioral finance and the theory of cognitive biases may not follow such a path of fundamental analysis, but may instead seek to exploit the cognitive biases of other investors.

Presuming reliance by investors who possess an SEC investor-education certificate would entail a bit more administrative work by class action trial judges than at present, but not much more and certainly less than in a full-blown investor-by-investor reliance inquiry.[186] It would formally suffer from under-inclusion and over-inclusion. Some without the certificate may have relied, and some with it may not have. The under-inclusion problem can be cured by permitting uncertified claimants to prove reliance by traditional means. The over-inclusion problem cannot be cured, but there would be far fewer claimants in certified classes that did not rely than is the case under the fraud-on-the-market theory as it currently stands. A substantial fiction may remain in this mechanism, but to a far less degree than under the fraud-on-the-market theory, and at least we could start off admitting this indulgence.

2. The Stock Market Exception to the Appraisal Remedy

In certain corporate transactions, such as majority freeze-out mergers, a shareholder can dissent and require the corporation to pay her the fair value of her shares as determined by a judge in an appraisal proceeding. Appraisal proceedings are time-consuming and expensive and depend on judicial ability to appraise value with reasonable accuracy. When the shares at issue trade on a reasonably well developed capital market, therefore, it may be tempting to turn to the market for a measure of valuation rather than to a judge. As a result of that view, many states have chosen to limit the availability of the appraisal remedy to situations in which there is no such reliable alternative market measure.[187]

This legislative preference for the market over the courthouse is far from compelling.[188] Suppose a majority shareholder seeks to cash out a minority

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186. Assuming that class certification of a claim is desirable, the practical limitation on this device or any other is to avoid triggering administrative, discovery, or other protracting steps concerning reliance issues. Thus, neither putative class members nor defense counsel would be involved in this step. Rather, lead plaintiff counsel would simply generate the clearly eligible class list by comparing the broader potential class with a computerized record of SEC certified investors. That group would enjoy presumed reliance.

187. *E.g.*, N.Y. Bus. Corp. Law § 910 (McKinney 1986 & Supp. 2001); Model Bus. Corp. Act (MBCA) § 13.01 (1998). The MBCA version of the stock market exception to the appraisal remedy applies when there is a liquid market for the target's shares and when the consideration being paid is either cash or shares that are also liquid. The exception does not apply to transactions in which managers of the target are part of the acquisition group.

188. For one thing, the appraisal statutes typically do not simply call for valuing a company at fair market value, but rather evaluating "its entirety as a going concern and then determining the fair value of the minority shares as a pro rata percentage of that value." M.G. Bancorporation v. Le Beau, 737 A.2d 513, 518 (Del. 1999) (citing Nebel v. Southwest Bancorp, Inc., 1995 WL 405750, at *4 (Del. Ch. July 5, 1995), which held that banking firm's valuation

whose shares trade on an open market. Some minority shareholders object that the price is too low. Tough luck, they are told if there is a liquid market for their shares. Take the price offered or leave it. But why has the majority structured this cash-out deal rather than simply buying the shares on the open market at the market price?

The majority could go on the open market and purchase the shares of those minority shareholders seeking to sell. This would tend to drive up the market price, likely inducing additional minority shareholders to sell. But there may be holdouts among the minority unprepared to sell even at the price to which the majority's purchases drive the market.

At this point, the only reason the majority is going to structure a cash-out merger is that it values the shares at a level higher than both the market price and the price at which it proposes the cash-out deal. Any minority shareholders who continue to refuse to sell at that price and hence seek to perfect appraisal rights are indicating a similar value assessment.[189] The minority may well honestly and reasonably value their shares at more than the last willing minority seller did, even if this belief is a product of select biases. Likewise, the majority also may honestly and reasonably value the holdouts' shares at more than the last seller did, but not as much as the minority (even if this belief is a product of opposite biases).

When this is the case, remitting a minority to the market price on squeeze-out day interferes with capital allocations that the parties would readily agree to. Instead of forcing the majority to buy in the open market at prices that increase as it buys, it enables the majority to use a single market-price benchmark that is below both its own and the minority's private valuations. It is of course possible that the minority could claim an inflated valuation, leading the majority to pay substantially more than a fair private valuation. But that is precisely the situation in which appraisal proceedings are supposed to uncover what the market cannot, and an important judicial function remains even when subject shares trade in liquid markets.[190]

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opinion rendered to set price in short-form merger was not legally proper because it had determined only "fair market value" of minority shares).

189. The difference between price and value can be explained in part on the grounds that the marginal buyer is the one who sets the market price, *see supra* note 168, and in part on the grounds that the majority and minority, as well as other holders, exhibit different degrees of bias in their valuations, whether from overreaction, representativeness, overconfidence, or a variety of other factors.

190. A special case concerns statutory stock-for-stock mergers. Suppose a low-ball price is agreed from the target's point of view (good for the buyer, bad for the seller). If the parties agreed to a floating exchange rate for their shares in the merger agreement, then following the announcement, the market will raise the buyer's price and punish the seller's price, producing a lower consideration for selling shareholders. Even if the parties used a fixed exchange rate,

As with the fraud-on-the-market theory, the stock market exception to the appraisal remedy may be seen as a device intended not so much as a celebration of the EMH but as a pragmatic tool to solve a difficult problem in litigation. The typical appraisal proceeding involves a protracted duel between financial valuation experts who disagree with one another, not only as to the result, but also as to the proper model to use in thinking about the case. The stock market exception may reflect a pragmatic legislative desire to relieve judges from being at the center of the duel. If so, however, just as with the fraud-on-the-market theory, there is a better way to go.

The judiciary could simply develop a rule for appraisal proceedings under which it will refrain from evaluating the internal details of each expert's model and refuse to develop an integrated model from the parts of the competing models that seem to make the most sense. Instead, the judge would simply choose one expert's model and valuation over the other's – period.[191] This would have the effect of substantially contracting the litigation, contracting the range of valuations that the experts propose, and probably yielding a valuation that more accurately reflects the subjective but honest valuations of both the majority and minority.[192] Not only that, this kind of judicial horse

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the buyer's price will rise and the seller's will fall, but the gain for the buyer will inure to the benefit of its pre-existing shareholders, not to those of the seller.

191. Courts have the power and discretion to select one of the party's valuation models as their general framework or to fashion their own. *M.G. Bancorporation*, 737 A.2d at 526.

192. This was the ingenious insight revealed by Chancellor Allen in *Cede & Co. v. Technicolor, Inc.*, C.A. No. 7129, 1990 WL 161084, at *7-8 n.17 (Del. Ch. Oct. 1990), who observed that in some appraisal proceedings, it is possible to develop "either a completely independent judicially created [discounted cash flow] model or a pastiche composed of bits of one model and pieces of the other." *Id.* at *7-8. In a footnote, Chancellor Allen elaborated:

> For good reasons aside from technical competence, one might be disinclined to do so. Simply to accept one expert['s] view or the other would have a significant institutional or precedential advantage. The DCF model typically can generate a wide range of estimates. In the world of real transactions (capital budgeting decisions for example) the hypothetical, future-oriented [ ] nature of the model is not thought fatal to the DCF technique because those employing it typically have an intense personal interest in having the best estimates and assumptions used as inputs. In the litigation context use of the model does not have that built-in protection. On the contrary, particularly if the court will ultimately reject both parties[']DCF analysis and do its own, the incentive of the contending parties is to arrive at estimates of value that are at the outer margins of plausibility – that essentially define a bargaining range. If it is understood that the court will or is likely to accept the whole of one witness['s] testimony or the other, incentives will be modified. While the incentives of the real world applications of the DCF model will not be replicated, at least the parties will have incentives to make their estimate of value appear most reasonable. This would tend to narrow the range of estimates, which would unquestionably be a benefit to the process.

sense would solve the administrative problem for all appraisal proceedings, not just those concerning shares that trade in liquid markets.[193]

IV. Conclusion

The efficient market hypothesis is a special case in finance. It explains only fractions of observed phenomena and is least helpful in the difficult cases where accuracy is most needed. Perhaps its major contribution is a formal definition of an ideal market world, to which policy formulations may be directed and against which they can be measured. It seems unlikely that the infirmities of market action ever will be so minuscule as to render the EMH more than a special case. The shackles of the EMH should be unloosed from the corporate and investing culture.

Apart from this substantive conclusion, a word of methodological conclusion is in order on the particular place the foregoing analysis occupies in the bourgeoning legal literature drawing on behavioral social science. The genealogy of behavioral finance traces back to branches of psychology and economics. Its great-grandparents on the psychology side were the behaviorists such as B. F. Skinner and on the economics side the financial economists such as Paul Samuelson. Its grandparents were both revolutionaries against those traditions: the cognitive revolution in psychology during the 1960s and the discovery of extensive anomalies in efficient market theory in the 1980s, both of which are concerned with human thought processes in a way their forbears were not. Behavioral decision theory emerged from cognitive psychology's study of human thought processes that raised substantial doubts about rational choice theory, whereas noise theory emerged from financial economists who applied those insights to capital market phenomena. The result is behavioral finance, a marriage of cognitive psychology and the financial economics of market inefficiency.

Throughout this intellectual history, legal scholars with a social science inclination have drawn on various strands of thought pioneered in these fields. At a general level, principles of psychology played a substantial role in theory and practice concerning the institution of the jury, and the tools of economics were deployed in all aspects of law with a distinctive style of analysis so sweeping in scope that the whole field was given its own name: "law and economics." As with many other intellectual endeavors born in the social

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Id. at *8 n.17.

193. The Delaware Supreme Court has held that this approach is not within the power of the judiciary to implement on its own, for the Delaware statute imposes on the judiciary the role of engaging in an independent valuation exercise in an appraisal proceeding. Gonsalves v. Straight Arrow Publishers, Inc., 701 A.2d 357, 361-62 (Del. 1997).

studies departments, legal scholars in a wide variety of fields are importing the work of cognitive psychologists, principally behavioral decision theory (BDT).

As with such large-scale importation that has taken place in the past, the leaders of this development have sought to ease the fears of the critics and skeptics and implicitly to guide the direction of its users. The present concerns of the lead importers center on the usefulness of BDT to legal scholarship and policymaking generally. A key concern is whether all it will do is furnish criticism of law and economics, thereby failing to offer its own positive theories of law or normative prescriptions. If that is all it does, "BDT risks devolving into a degenerate research agenda with no positive theories, as has been the fate of critical legal studies."[194] Whatever power BDT has for legal scholarship in general and whatever its fate may be in a battle with principles of law and economics, this Article should leave no doubt that it furnishes a positive theory of market behavior quite different than that of efficiency and that this theory carries with it substantial normative implications for law and legal policy in the fields of securities and corporate law.

194. Rachlinski, *supra* note 48, at 741-42.