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## The Meaning of the Market Myth

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# THE MEANING OF THE MARKET MYTH

*Benjamin Means\**

THE MYTH OF THE RATIONAL MARKET: A HISTORY OF RISK, REWARD, AND DELUSION ON WALL STREET. By *Justin Fox*. Harper Business. 2011. pp. xi, 390. \$16.99

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On April 13, 2011, a bipartisan U.S. Senate subcommittee issued its final report, concluding that the financial crisis of 2008 “was not a natural disaster, but the result of high risk, complex financial products; undisclosed conflicts of interest; and the failure of regulators, the credit rating agencies, and the market itself to rein in the excesses of Wall Street.”<sup>1</sup> The subcommittee was hardly staking out new ground. An emerging consensus holds that self-interested bankers, mortgage brokers, and other insiders took advantage of weak or broken regulations to profit at the expense of ordinary investors, homeowners, and the larger society.<sup>2</sup> Rather than operating as a constraint, the market soared to irrational levels, buoyed by a widely shared assumption that real estate prices would continue to rise.

The financial crisis of 2008 is only the latest example of market irrationality.<sup>3</sup> In *The Myth of the Rational Market*, Justin Fox uses the financial crisis as the backdrop for a broader story about how markets work.

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\* Assistant Professor of Law, University of South Carolina School of Law. I thank Matt Bodie for motivating this project by inviting me to join a roundtable discussion of the book on Prawfsblawg. This review builds upon my previous blog comments and is informed by the views of my fellow participants: Matt Bodie, Lynn Stout, and the author, Justin Fox. I also thank Brandon Smith for his research assistance.

1. COMM. ON HOMELAND SECURITY & GOV'T AFFAIRS, WALL STREET AND THE FINANCIAL CRISIS: ANATOMY OF A FINANCIAL COLLAPSE, *available at* <http://www.ft.com/intl/cms/fc7d55c8-661a-11e0-9d40-00144feab49a.pdf> [hereinafter Levin-Coburn Report on the Financial Crisis] (last visited Feb. 1, 2012).

2. *See, e.g.*, JOHN CASSIDY, *HOW MARKETS FAIL: THE LOGIC OF ECONOMIC CALAMITIES* (2009); MICHAEL LEWIS, *THE BIG SHORT: INSIDE THE DOOMSDAY MACHINE* (2010); RICHARD A. POSNER, *A FAILURE OF CAPITALISM: THE CRISIS OF '08 AND THE DESCENT INTO DEPRESSION* (2009); Donald C. Langevoort, *Chasing the Greased Pig Down Wall Street: A Gatekeeper's Guide to the Psychology, Culture, and Ethics of Financial Risk Taking*, 96 CORNELL L. REV. 1209 (2011); Michael E. Murphy, *Assuring Responsible Risk Management in Banking: The Corporate Governance Dimension*, 36 DEL. J. CORP. L. 121, 122 (2011); Oren Bar-Gill, *The Law, Economics and Psychology of Subprime Mortgage Contracts*, 94 CORNELL L. REV. 1073 (2009).

3. *See* BURTON G. MALKIEL, *A RANDOM WALK DOWN WALL STREET* 34 (6th ed. 1996) (“Greed run amok has been an essential feature of every spectacular boom in history. In their frenzy for money, market participants throw over firm foundations of value for the dubious but thrilling assumption that they too can make a killing . . . Such thinking can, and has, enveloped entire nations.”).

Although he includes a preamble and an epilogue focused on recent events (pp. xi-xvi, 309-21), Fox leaves to others most of the reporting on too-big-to-fail financial institutions, mortgage-backed securities, and the derivatives trading activities that one well-known investor described presciently as “time bombs, both for the parties that deal in them and the economic system.”<sup>4</sup> Rather than investigating the immediate causes of the crisis, Fox aims to explain why anyone could have believed that markets are fundamentally rational and therefore reliably self-policing. He describes how the rational-market idea developed, how it was championed, and how its defenders have either addressed or ignored a variety of criticisms and contradictory evidence.

Although the book’s title implies that the financial crisis of 2008 represented a final dismantling of faith in rational markets, the book is more even-handed than its title might suggest. In the aftermath of disastrously leveraged and complex financial products that seem to have been premised on the notion that real estate prices can only go up, few would claim that markets always know best.<sup>5</sup> However, as Fox also observes, financial markets by and large do an exceedingly good job of reflecting information relevant to the value of companies whose stocks are publicly traded (p. 102). The book provides an engaging history of financial economics and an unbiased guide to some of the most important scholarly articles concerning market rationality.

This Book Review contends that the perfectly rational market may be a myth, not just in the sense of a false or over-simplified account of reality, but also in the deeper, anthropological sense of cultural explanation. Part I describes how rational-market theories were developed by financial economists and applied to Wall Street, sometimes without adequate appreciation for the difference between simplified economic models and real-world behavior.<sup>6</sup> Part II contends that if the rational-market theory has met with acceptance that outstrips its empirical support, the favorable reception may be explained in part by the theory’s congruence with broader normative views about *laissez faire* social ordering.<sup>7</sup>

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4. Warren E. Buffet, Chairman of the Board, Berkshire Hathaway, Annual Letter to Shareholders 13 (2002), available at <http://www.berkshirehathaway.com/letters/2002pdf.pdf> (last visited Jan. 26, 2012).

5. Even if market prices were irrational, it may be the case that certain individual market participants acted rationally by going along with what they recognized to be an unsustainable bubble. See CASSIDY, *supra* note 2, at 182 (“In the presence of naïve investors, some of whom may react to rising prices by buying more stocks, selling overpriced stocks is risky. Instead of trying to counteract the activities of noise traders, and pushing prices back toward fundamental levels, it may well pay to trade along side them.”).

6. Summarizing a summary of the history of financial economics risks diminishing returns, to borrow a term from the discipline. For a proper introduction, interested readers should consult the book.

7. In other words, the financial markets can be studied from a cultural perspective. See, e.g., T.C. Bestor, *Markets: Anthropological Aspects*, in INTERNATIONAL ENCYCLOPEDIA OF THE SOCIAL & BEHAVIORAL SCIENCES 9227, 9227 (2001) (“Anthropological studies of

## I. SHOCKING ALAN GREENSPAN

*The Myth of the Rational Market* opens with a vignette that highlights the book's central theme: former Federal Reserve Chairman Alan Greenspan's remarkable admission that he was wrong to believe that markets are reliably self-correcting and therefore need little government regulation or oversight. In testimony before the House Committee on Government Oversight and Reform, Greenspan stated that when the markets crashed, he was "shocked" and that the "whole intellectual edifice collapsed" (p. xii). In Fox's pithy summary, Greenspan conceded "[t]hat he had misunderstood how the world works" (p. xi).

Fox then traces the idea of a rational, self-correcting market—Greenspan's "intellectual edifice"—back to Irving Fisher, an economist in the early 1900s who introduced probability theory and economic analysis to the study of stock price movements (p. 3). Fisher's contributions to economics aside, his life story is another cautionary tale concerning the dangers of too much faith in market rationality. As Fox recounts, Fisher is best known as a stock character in histories of the 1929 market crash, in which he serves "as a sort of idiot Greek chorus" who "pop[s] up every few pages to assert that stock prices ha[ve] reached a 'permanently high plateau'" (p. 5). When the market crashed, Fisher lost his own fortune (p. 5).

Fox diagnoses in Fisher a susceptibility that extends, by implication, to Alan Greenspan and others whose laxity contributed to the recent financial crisis:

Irving Fisher had succumbed to the myth of the rational market. It is a myth of great power—one that, much of the time, explains reality pretty well. But it is nonetheless a myth, an oversimplification that, when taken too literally, can lead to all sorts of trouble. Fisher was just the first in a line of distinguished scholars who saw reason and scientific order in the market and made fools of themselves on the basis of this conviction. Most of the others came along much later, though. Irving Fisher was ahead of his time (p. 6).

So how did the theory of market rationality develop and gain adherents? Why might we believe that market prices reflect the value of traded securities? First, we have to recognize that market prices are important because they contain information. Markets aggregate the signals each individual investor sends by revealing a willingness to buy or sell securities at a particular price, and the resulting changes in the price of publicly traded securities influence the production and allocation of goods and services in society. Fox cites Friedrich Hayek's important article, *The Use of Knowledge in Society*, for this proposition and for its corollary: no centralized government planner has access to all the relevant, dispersed data, and only the market can capture it (p. 91).<sup>8</sup> Thus, "[a]ny attempt to regulate prices

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markets analyze them as nodes of complex social processes and generators of cultural activity as well as realms for economic exchange.").

8. This insight builds on Adam Smith's metaphor—markets can function as an "invisible hand" that allocates societal goods to those who value them most, even though the market participants intend only to advance their own self-interest.

or business activity was doomed to thwart the movement of knowledge needed to make the economy run smoothly” (p. 92). Hayek’s insight supports both a faith in market ordering and a suspicion of government interventionism.<sup>9</sup>

If publicly traded securities capture information, the next question is whether they do so efficiently: “[a] security’s price can be seen as being established in an efficient market if, with respect to specific information, the price that exists for the security is the same as the price it would have if everyone had the same information.”<sup>10</sup> One possible test of market efficiency is whether it is possible to make money by buying or selling securities based on (1) “technical” analysis of patterns in past stock price movements,<sup>11</sup> or (2) “fundamental” analysis of any difference between a security’s expected future earnings (discounted to present value, adjusted for risk) and its current market price.<sup>12</sup> The more efficient the market is, the less likely that there will be information lying around unused that can be exploited profitably by an individual trader.<sup>13</sup>

According to the efficient capital markets hypothesis—which takes the idea of a rational market to its logical conclusion—market trading approaches perfection in its ability to impound information in stock prices (p. 101). Markets *never* misunderstand or overlook information, and, as a consequence, there are no meaningful profits available for savvy investors (p. 103). Rather, the market price is always the correct price. The efficient capital markets hypothesis comes in three basic flavors: weak, semi-strong, and strong (p. 101).

The market is considered efficient in the weak sense if “security prices reflect all the information embodied in the past prices of that security.”<sup>14</sup> If so, no one can reliably make money by analyzing where the market has been in order to predict where it is going.<sup>15</sup> The information has already

9. See CASSIDY, *supra* note 2, at 43 (“The history of the Soviet bloc demonstrated what happens when governments replace market price signals with central planning and prices that are administratively determined.”).

10. See JAMES D. COX ET AL., *SECURITIES REGULATION: CASES AND MATERIALS* 104 (6th ed. 2009) (citing H. Beaver, *Market Efficiency*, 56 *ACCT. REV.* 23 (1981)).

11. This is sometimes also referred to as chart reading. See MALKIEL, *supra* note 3, at 117 (“Technical analysis is essentially the making and interpreting of stock charts.”).

12. *Id.* (“Fundamentalists believe that eventually the market will reflect accurately the security’s real worth.”).

13. Ronald J. Gilson & Reinier H. Kraakman, *The Mechanisms of Market Efficiency*, 70 *VA. L. REV.* 549, 555 (1984) (contending that “[t]he common definition of market efficiency” amounts to an “empirical claim that ‘available information’ does not support profitable trading strategies or arbitrage opportunities”). The assumption that no information will go unused provides the punch line for the joke about an economist out walking who disdains to pick up a \$20 bill lying in the street: “If it were real, someone would have picked it up already.”

14. COX ET AL., *supra* note 10, at 104.

15. MALKIEL, *supra* note 3, at 144 (arguing that even if there is not quite “complete independence of present price movements from those in the past . . . any systematic relationships that exist are so small that they are not useful for an investor”).

been priced in, and the market's path is then said to resemble a "random walk."<sup>16</sup> Thus, there are no patterns that a trader can find to anticipate with more than random accuracy whether the market as a whole, or any individual traded stock, will continue to move in one direction or another. Markets, of course, will "go up on good news and down on bad news," but these changes are random in the sense that "future changes in price are independent of past changes."<sup>17</sup>

The semi-strong version of the market-efficiency hypothesis holds that market pricing incorporates all current public information relevant to the value of a given security. According to this hypothesis, even fundamental analysis of a company's likely future earnings cannot help an investor beat the market because a security's market value already reflects all existing information. As new information becomes available, it is incorporated into the stock price too quickly to be useful in making a profit.<sup>18</sup> Finally, the strong version of the market efficiency hypothesis holds, somewhat implausibly, that "security prices reflect all information, whether that information is publicly available or not."<sup>19</sup>

The efficient capital market hypothesis, at least in its weak and semi-strong variants, is supported by both logic and evidence.<sup>20</sup> The logic is that of arbitrage: if there really were systematic patterns in stock price movements or discrepancies between price and fundamental value, savvy traders would have exploited the gap and made outsized profits until the discrepancy was traded away.<sup>21</sup> As long as the market has access to the relevant information,<sup>22</sup> there is no reason to believe that markets will systematically misprice that information in a way by which an individual trader can profit.<sup>23</sup> As Fox reports, empirical investigation has confirmed

16. *Id.* at 24 ("A random walk is one in which future steps or directions cannot be predicted on the basis of past actions.").

17. STEPHEN M. BAINBRIDGE, *CORPORATION LAW AND ECONOMICS* 113 (2002).

18. Thus, there are no "bargain" stocks or asset classes.

19. COX ET AL., *supra* note 10, at 105. In fact, "[t]here is no significant empirical evidence supporting the view that markets are efficient in the strong form." *Id.*

20. See Michael C. Jensen, *Some Anomalous Evidence Regarding Market Efficiency*, 6 J. FIN. ECON. 95, 95 (1978) (stating that "there is no other proposition in economics which has more solid empirical evidence supporting it than the Efficient Markets Hypothesis").

21. See CASSIDY, *supra* note 2, at 86 ("If markets rise above the levels justified by fundamental, well-informed speculators step in and sell until prices return to their correct levels. If prices fall below their true values, speculators step in and buy. It is easy to see how a free market economist could fall in love with this logic . . .").

22. Note that this does not require the implausible assumption that *all* investors have access to the information. Instead, the argument is that intelligent and well-informed investors will drive prices toward their true value, because uninformed investors who trade on "noise" will do so randomly and will not bias the market price away from its true value.

23. There are some investors, notably including Warren Buffet, who do seem to be able to beat the market on a regular basis, but most individual investors and investment managers who do well in a particular period soon regress back to the mean. This is why selling low performing mutual funds is often a really bad idea: it reverses the rule that one should buy low and sell high and it relies on the (usually) false belief that if a particular fund

“beyond any reasonable doubt that yes, financial markets [do] a spectacular job of reflecting and transmitting new information—even well-hidden new information—by means of prices” (p. 102).<sup>24</sup>

The impact of rational-market theory in general, and the efficient capital markets hypothesis in particular, would be hard to overstate.<sup>25</sup> Index funds and other investment vehicles that offer low-cost baskets of securities have been created to satisfy investor demand, consistent with the shibboleth that favors a buy-and-hold strategy with broad market exposure at the lowest possible cost.<sup>26</sup> All this follows from the conclusion that investors cannot reliably beat the market, and that it makes no sense for them to pay a percentage of their returns so that a market professional can try to beat it on their behalf.<sup>27</sup> In addition to its standing as “one of the most basic principles of modern corporate finance theory,” the efficient capital markets hypothesis’s “influence on corporate law has been dramatic.”<sup>28</sup> Professor Stephen Bainbridge observes, for instance, that it “has had an enormous impact on the SEC’s disclosure rules and the elements of securities fraud” and “also has been a crucial part of the debate over the desirability of insider trading prohibitions.”<sup>29</sup>

Notwithstanding the influence of the efficient capital markets hypothesis, mostly right is not the same thing as always right: the hypothesis de-

does well, its managers must be better than the managers of the low-performing fund. *See, e.g.*, BAINBRIDGE, *supra* note 17, at 114 (“The empirical evidence suggests that the vast majority of mutual funds that outperform the market in a given year falter in future years.”).

24. A remaining, contested question is whether the prices set by the market, however efficiently, correspond to the fundamental value of the security: “Those who take exception to the usefulness of the efficient market hypothesis do so principally because the evidence is weak that markets are fundamentally efficient, meaning they do not yield prices that reflect the intrinsic value of the security.” COX ET AL., *supra* note 10, at 107. On the other hand, it is often “meaningless to talk about the ‘intrinsic value’ of corporate stock. As a marketable commodity, a share of stock has no value other than what someone else is willing to pay for it.” BAINBRIDGE, *supra* note 17, at 114.

25. Lynn A. Stout, *The Mechanisms of Market Inefficiency: An Introduction to the New Finance*, 28 J. CORP. L. 635, 636 (2003) (stating that “efficient markets theory had, by the 1970s, captured the imagination of a generation of economists and finance theorists”).

26. *See* CASSIDY, *supra* note 2, at 90.

27. *See, e.g.*, MALKIEL, *supra* note 3, at 140 (“The central proposition of charting is absolutely false, and investors who follow its precepts will accomplish nothing but increasing substantially the brokerage charges they pay.”).

28. BAINBRIDGE, *supra* note 17, at 112–13. The theory also supported arguments that a market for control of corporations could force managers to serve shareholder interests more effectively than top-down regulation: “How could executives be made to pay attention to the verdict of the stock market? If they were worried that somebody might buy their company and throw them on the street, *that* might be a motivator” (p. 164-65). For the classic version of the argument, see Henry Manne, *Mergers and the Market for Corporate Control*, 73 J. POLITICAL ECON. 110 (1965).

29. *Id.* at 113; *see also* Stout, *supra* note 25, at 636 (“By the mid-1980s, ‘market efficiency’ had become a mantra not only of finance economists, but also of securities scholars, regulators, and even judges and practicing lawyers.” (citing Gilson & Kraakman, *supra* note 13, at 549–50)).

scribes a mechanism whereby information affects price, but it ignores the fact that “price movements also sometimes reflect[] false information, incorrect interpretation, and plain old mood swings” (p. 102).<sup>30</sup> An underlying, economic assumption about human behavior—that investors are unfailingly rational actors—was extended from economics to finance, where it became an assumption “that financial markets [a]re rational” (p. 107).<sup>31</sup> Thus, “[b]y making a simplifying assumption about the real world, finance professors were able to produce research that was enormously useful” (p. 107). However, the nuance rubbed off, especially as the idea was picked up by Wall Street and by academics in other disciplines, including law.<sup>32</sup> In short, for Fox, the idea of a rational market is a “myth,” not because it is wrong, but because it is a “simplification” of reality.<sup>33</sup>

## II. MARKET MYTHOLOGIES

Myths, however, are more than simplifications; they provide narratives that help us understand our world and orient ourselves within it. Traditionally, a myth is said to be “a legendary story that invokes gods and heroes and explains a cultural practice or phenomenon.”<sup>34</sup> These explanations

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30. For critiques of the efficient capital markets hypothesis, see, for example, 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); Donald C. Langevoort, *Theories, Assumptions, and Securities Regulation: Market Efficiency Revisited*, 140 U. PA. L. REV. 851 (1992); Lynn A. Stout, *The Unimportance of Being Efficient: An Economic Analysis of Stock Market Pricing and Securities Regulation*, 87 MICH. L. REV. 613 (1988).

31. Fox argues that “[l]ike physicists ignoring friction in building their models of the world, economists became more and more comfortable with ignoring widely recognized realities of human behavior in order to build better models of it” JUSTIN FOX, *THE MYTH OF THE RATIONAL MARKET: A HISTORY OF RISK, REWARD, AND DELUSION ON WALL STREET* 28 (2011). For further discussion of the uses and limits of standard economic models, see for instance, Benjamin Means, *A Contractual Approach to Shareholder Oppression Law*, 79 FORDHAM L. REV. 1161 (2010). To be clear, the efficient markets hypothesis allows for individually irrational traders—“noise” traders to be polite about it—but rejects the notion that irrational behavior could be systematic (e.g., that “noise” investors will buy more of a security for no other reason than that its price has gone up), or that the volume of “noise” signals could drown out more rational price signaling.

32. FOX, *supra* note 31, at 162 (“When such a theory is transferred intact to another discipline, a lot of . . . baggage is inevitably lost.”). For similar analysis of the nuances lost in discussion of the so-called Coase theorem, see Pierre Schlag, *The Problem of Transaction Costs*, 62 S. CAL. L. REV. 1661 (1989) (arguing that legal academics have misunderstood Ronald Coase’s work by taking his description of a world without transaction costs as a model for analysis and policy prescription, when Coase’s actual point was the opposite—that any satisfactory model must account for transaction costs).

33. For a useful summary of the many logical and empirical objections that have been lodged against the hypothesis, see Stout, *supra* note 25.

34. THE NEW WEBSTER’S ENCYCLOPEDIA OF THE ENGLISH LANGUAGE (1997) (quoted in MARTHA ALBERTSON FINEMAN, *THE AUTONOMY MYTH: A THEORY OF DEPENDENCY* 11 (2004)).



can “offer guidelines for actions”<sup>35</sup> and help to justify the existing societal order:

In his classic book *Myth and Reality*, Mircea Eliade argued that there are many varieties of myth . . . . Like the myths described by Eliade, political myths do not merely entertain; they promote practical purposes. They are based on the story of a society’s beginnings, but they also explain the present and provide a vision of the future.<sup>36</sup>

If politics depends for its legitimacy on certain shared cultural myths, so too does an economic system of exchange.<sup>37</sup> As cultural phenomena, “[m]arketplaces embody a localized set of social institutions, social actors, property rights, products, transactional relationships, trade practices, and cultural meanings framed by a wide variety of factors including, but not limited to, ‘purely economic’ or ‘market’ forces.”<sup>38</sup> Theories about how markets work must also explain the cultural and social context in which those markets are embedded.<sup>39</sup> Accordingly, and as a friendly addition to Fox’s thesis, this Part contends that the “myth of the rational market” can refer to the anthropological function as well as the economic logic of the financial markets.

#### A. *Bulls, Bears, and Animal Spirits*

Like other myths, theories of market behavior that purport to identify purposeful patterns in market prices over time satisfy a human need to find order: “[n]o matter what the laws of chance might tell us, we search for patterns among random events wherever they might occur.”<sup>40</sup> Once displayed graphically on charts, market prices show upward and downward slopes that appear, in hindsight to display regularities: “[i]n other

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35. ADAM KUPER, *CULTURE: THE ANTHROPOLOGISTS’ ACCOUNT* 176 (1999).

36. MARTHA ALBERTSON FINEMAN, *THE AUTONOMY MYTH: A THEORY OF DEPENDENCY* 11 (2004) (citing HENRY TUDOR, *POLITICAL MYTH* 14–17 (1972)).

37. Nor are politics and economics radically separate spheres. See, e.g., EMILY CHAMLEE-WRIGHT, *THE CULTURAL AND POLITICAL ECONOMY OF RECOVERY: SOCIAL LEARNING IN A POST-DISASTER ENVIRONMENT* 15 (2010) (“Political economy . . . seeks to reveal the fundamental connections between the economy and the political and institutional environment.”).

38. Bestor, *supra* note 7, at 9227.

39. See, e.g., NEIL FLIGSTEIN, *THE ARCHITECTURE OF MARKETS: AN ECONOMIC SOCIOLOGY OF TWENTY-FIRST-CENTURY CAPITALIST SOCIETIES* 97 (2001) (“Markets are social constructions that reflect the unique political-cultural construction of their firms and nations. The creation of markets implies societal solutions to the problems of property rights, governance structures, conceptions of control, and rules of exchange.”). To identify a cultural belief as a myth is not to reject its empirical validity; it could be the case that certain theories of market ordering are sustained by their mythic resonance, and that those theories also happen to be true. If so, the next question would be whether the myth provides the correct functional explanation. For instance, an ancient Greek who believed that the sun was a god driven across the sky each day by a team of horses would correctly anticipate the sun’s path each day, though more elaborate astronomical calculations would not be possible on such a foundation.

40. MALKIEL, *supra* note 3, at 149.

words, we *want* to see regular waves in economic data, and thus we do” (p. 41).

Technical analysts create and study charts to identify stock market trends on the belief that “[a] stock that is rising tends to keep on rising, whereas a stock at rest tends to remain at rest.”<sup>41</sup> Notably missing is any convincing explanation for why analysis of this kind produces reliable predictions of future market prices.<sup>42</sup> According to Burton Malkiel, “many chartists freely admit that they don’t know why charting should work—history just has a habit of repeating itself.”<sup>43</sup> The underlying mechanism, to the extent that one can be identified, seems to be rooted in psychology—an effort to anticipate what other investors are likely to do based on the psychological characteristics of the market itself.<sup>44</sup> The Wall Street Bull and Bear are, from this perspective, mythical creatures that represent the mood of the market, and by extension, the nation.

Notwithstanding its thin theoretical foundation, technical analysis boasts an elaborate jargon to describe stock-price movements, including “such terms as double bottoms, breakthrough, violating the lows, firmed up, big play, ascending peaks, and buying climax.”<sup>45</sup> Perhaps in order to affirm its own status as a scientific discipline, technical analysis appears to have “developed into extremely intricate productions of self-referential complexity.”<sup>46</sup> In its purest form, the method ignores everything but the charts: “A true chartist doesn’t even care to know what business or industry a company is in, as long as he can study its stock chart.”<sup>47</sup> The technique separates itself entirely from the outside world and operates according to its own internal logic.<sup>48</sup>

41. *Id.* at 118.

42. Beyond a certain point, no adequate mechanism can be posited. *See, e.g.*, Fox, *supra* note 31, at 71 (“Like the Indian folk doctors who discovered tranquilizers, the Wall Street witch doctors, without benefit of the scientific method, have produced something with their magic, even if they can’t tell you what it is or how it works.”) (citation omitted).

43. MALKIEL, *supra* note 3, at 118.

44. *Id.* at 123 (identifying a crowd-psychology argument behind technical analysis). For instance, some analysts posit that previous stock highs are “resistance” areas that may be difficult to break through and that previous lows are “support levels” because investors will be inclined to buy when the stock dips. *Id.* at 124. Malkiel also suggests that technical analysis could rely upon speculation that insiders will trade ahead of the release of information to the market and that prices move incrementally in a direction as the information moves into wider circles. *Id.* at 123.

45. *Id.* at 122 (noting that “all this takes place under the pennant of that great symbol of sexuality: the bull”).

46. Pierre Schlag, *Law and Phrenology*, 110 HARV. L. REV. 877 (developing invidious comparison between the academic discipline of law and the discredited practice of judging human faculties by measuring skulls). Professor Schlag identifies in both cases a reliance on “folk beliefs” and a studied avoidance of disconfirming evidence.

47. MALKIEL, *supra* note 3, at 118.

48. *Id.* (“One of the original chartists, John Magee, operated from a small office . . . where even the windows were boarded up to prevent any outside influences from distracting his analysis.”).

However, the rebuttal to the belief in market patterns cuts through the scientific pretensions and the jargon in intellectually devastating fashion:

Sometimes one gets positive price changes (rising prices) for several days in a row; but sometimes when you are flipping a fair coin you also get a long string of “heads” in a row, and you get sequences of positive (or negative) price changes no more frequently than you can expect random sequences of heads or tails in a row. What are often called “persistent patterns” in the stock market occur no more frequently than the runs of luck in the fortunes of any gambler playing a game of chance. This is what economists mean when they say that stock prices behave like a random walk.<sup>49</sup>

Indeed, Burton Malkiel’s students produced charts identical to those relied upon by technical analysts simply by recording the result of coin flips. As a prank, Malkiel shared one such chart with a friend of his who was a technical analyst. The chart “showed a beautiful upward breakout from an inverted head and shoulders (a very bullish formation) . . . and the analyst practically jumped out of his skin predicting that ‘the stock will be up 15 points next week.’”<sup>50</sup>

Empirical studies generally confirm the efficient market hypothesis that current stock prices reflect all past information so that future changes in price are independent of past prices. Technical analysis, in other words, is a recipe for losing money, or, worse yet, paying someone else a commission to lose money on your behalf. Yet, even if technical analysis is a lousy approach to investing, it has at least one saving grace: it reminds us that investors sometimes do “act like a herd all running in the same direction, which can produce pricing errors.”<sup>51</sup> This kind of behavior can produce “[l]arge speculative bubbles that appear out of nowhere and crash without apparent reason.”<sup>52</sup> In sum, although the practice of studying the charted entrails of past markets may seem risible, the myth of Wall Street bulls and bears is a useful reminder that “animal spirits”<sup>53</sup> can steer the markets away from more rational valuations.

### B. *Rational Market Mythology*

At first blush, the efficient capital markets hypothesis appears to offer an anti-mythic view of the financial markets. First, it embraces randomness and refuses to find spurious patterns simply to satisfy a human need to produce order out of chaos; what will happen next does not follow predictably from what went before. Second, because the market price is already

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49. *Id.* at 141. The exception to this randomness is that “[t]here is a long-run uptrend in most averages of stock prices in line with the long-run growth of earnings and dividends.” *Id.* at 143. This is why long-term, buy-and-hold strategies have proved successful.

50. *Id.* at 143 (“He did not respond kindly to me when I told him the chart had been produced by flipping a coin. Chartists have no sense of humor.”).

51. BAINBRIDGE, *supra* note 17, at 115.

52. *Id.*

53. JOHN MAYNARD KEYNES, *THE GENERAL THEORY OF EMPLOYMENT, INTEREST AND MONEY* (1936).

correct based on existing information, a perfectly rational market has no use for extraordinary individuals. (Building a low-cost, diversified portfolio is not the stuff of which legends are made). Rational-market theories were first developed by academics and were meant to replace Wall Street folklore with a more studiously scientific approach.

However, the gap between the rational-market theory and folk beliefs about financial markets may be more apparent than real. For initiates, as Fox shows, the idea of the rational market sometimes arrived with the force of revelation: “[a]fter about ten minutes it just hit me, this has got to be true. The idea for me was so powerful; I said to myself, ‘This is order in the universe’” (p. 105) (quoting Rex Sinquefeld, MBA student at the University of Chicago, circa 1970, and former Catholic seminarian). Thus, although it is a descriptive claim about how markets operate, the efficient capital markets hypothesis may serve a mythic function to the extent that its appeal stems not only from the strength of its empirical support, but also from its normative cultural implications.

In particular, if market prices are always and automatically correct, then government regulatory intervention in markets is an evil to be minimized. For libertarians, including Alan Greenspan, the hypothesis would seem to confirm deeply held views concerning the superiority of free markets:

This was Greenspan’s ideology—and it had been widely shared in Washington and on Wall Street. Financial markets knew best. They moved capital from those who had it to those who needed it. They spread risk. They gathered and dispersed information. They regulated global economic affairs with a swiftness and decisiveness that governments couldn’t match (xii).

Although the hypothesized rational market no longer assumes animal form and cannot exhibit exuberance or depression,<sup>54</sup> it exists nevertheless as a reified entity separate from a society’s laws and institutions, ready to punish those who would seek to fetter it with restrictive rules.

Further evidence that the efficient market hypothesis has caught on because it legitimates certain cultural narratives is that, strictly speaking, it appears to be a self-refuting proposition. The logical flaw in the hypothesis was identified in 1980 by the economists Joseph Stiglitz and Sanford Grossman in their article, *On the Impossibility of Informationally Efficient Markets*.<sup>55</sup> As John Cassidy summarizes:

[T]he efficient market hypothesis was based on a logical inconsistency. If stock prices at every moment reflected all of the available information about the economic outlook and other factors pertinent to individual companies, investors wouldn’t have any incentive to search out information and process it. But if nobody finds and processes information, stock prices won’t reflect that

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54. FOX, *supra* note 31, at xii (“Greenspan had once expressed the worry, in 1996, that stock markets might be losing themselves in a frenzy of ‘irrational exuberance.’ When they kept rising after that, he took the lesson that the market knew more than he did.”).

55. 70 AM. ECON. REV. 393 (1980).

information, and the market won't be efficient. For the market to work at all, there must be some level of inefficiency!<sup>56</sup>

Perhaps we can avoid the paradox by stipulating that “[f]ull-time professional investors capture enough of the value of new information to make the game one worth playing.”<sup>57</sup> However, if true, this significantly weakens the semi-strong version of the hypothesis, because it takes away the presumption that market prices must be correct.

Moreover, the hypothesis ignores the fact that human beings sometimes act irrationally *en masse*; for example, the hypothesis cannot account for bubbles, and yet they occur again and again. Early pioneers of rational-market theory had deliberately avoided extending the argument that market prices move randomly “more than an ‘instant’ into its future” (p. 148). That is because, “[o]ver any longer period . . . the tendency of men to behave like ocean-jumping sheep stood in the way of rational theories of market behavior” (p. 149).<sup>58</sup> We dismiss crowd psychology at our peril. Thus, even if high-tech stocks, real estate, or tulip bulbs are overpriced as compared with some other class of investment that appears to provide an equivalent risk-adjusted return, the imbalance can persist (even for years). Making the “correct” investment too soon is just as deadly to one’s portfolio as making the wrong investment.

Finally, a market’s internal equilibrium is no guarantee that the prices assigned by the market will correspond with the true value of the stock. (The analogy that comes to mind here is that it is always possible to tune a

56. CASSIDY, *supra* note 2, at 94; *see also* COX ET AL., *supra* note 10, at 105 (“Vital to the thesis that securities markets are efficient in the semi-strong form is the belief that sophisticated investors and analysts will indeed examine public information to identify undervalued and overvalued stocks. But if markets are indeed efficient in the semi-strong form, why would they do this?”). However, if a recent interview with a Fidelity fund manager is evidence, the efficient markets hypothesis has not diminished professional enthusiasm. *See* Fidelity Viewpoints, *The Fidelity Contrafund Manager Sees Slow Growth and Hopes for Surprises from China*, FIDELITY.COM (Dec. 30, 2011), [https://guidance.fidelity.com/viewpoints/danoff-2012?ccsource=email\\_monthly](https://guidance.fidelity.com/viewpoints/danoff-2012?ccsource=email_monthly) (“There are opportunities out there and we just have to find them. Fundamental research never goes out of style.”).

57. BAINBRIDGE, *supra* note 17, at 114.

58. The economist Merton Miller tried to solve this problem by pointing out that, logically, the market’s short-term randomness extends forward in time: “[I]t was always possible, at any moment in time, to rearrange one’s holdings to reflect changed market circumstances. This meant Bachelier’s ‘instant’ could be replicated again and again and again, into the indefinite future” Fox, *supra* note 31, at 149. Fox notes that while “certainly an elegant solution,” the approach involved “unrealistic simplifications” *Id.* In some respects, Miller’s argument is reminiscent of Zeno’s paradox, in which a tortoise and a hare run a race. Although the hare moves faster than the tortoise and seems certain to overtake him, we can identify a point at which the rabbit has halved the distance between them, then quartered it, then to the eighth, the sixteenth, the thirty-second, and so on. The distance between the rabbit and the tortoise can be divided and subdivided infinitely many times. Therefore, according to the paradox, the rabbit can never actually catch the tortoise. But this is false for reasons that seem to apply as well to Miller’s argument—even if our ability to describe spatial relations allows infinite positions to be assigned, one object moving at a higher rate of speed will still pass a slower object. For an overview of Zeno’s paradox, *see* JOSEPH MAZUR, ZENO’S PARADOX: UNRAVELING THE ANCIENT MYSTERY BEHIND THE SCIENCE OF SPACE AND TIME (2007).

guitar by putting the strings into harmony with each other, even if the overall pitch of the instrument is sharp or flat). Thus, some scholars maintain that the underlying assumption that prices fluctuate around a security's true value "is not an empirically testable assertion and it can be disregarded."<sup>59</sup> A test of market efficiency "might reveal whether stock price movements made sense in relation to each other and the overall market, but it was no help in showing whether the overall market was correctly priced or not" (p. 194). As the financial crisis of 2008 illustrates, markets sometimes produce wildly incorrect valuations. At least in some situations, "animal spirits" better explain behavior.

### III. CONCLUSION

Fox does not claim to resolve the controversy concerning the efficient market hypothesis. However, his narrative approach—which the back cover of the paperback edition calls an "intellectual whodunit" as much "as a cultural history"—seems to be in tension with the idea of a market that is impervious to exceptional, individual talent. In Fox's account, the economists who developed the field of finance, often resisting collective wisdom, saw further than other mortals into the workings of the universe. Thus, a personalized, quasi-mythic framework is used to introduce a profoundly impersonal view of market ordering.<sup>60</sup>

There is no logical contradiction here, but perhaps a mismatch of sensibilities. The focus on individual economists may be a self-conscious (and successful) effort to enliven otherwise dry material. Still, the packaging of a story about perfectly efficient markets through a series of narratives about extraordinary individuals tells us something about where Fox's sentiments lie. However unprepossessing a lot they might be in their practice of the dismal science, even economists can be mythologized.<sup>61</sup>

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59. Fox, *supra* note 31, at 195 (quoting CLIVE GRANGER & OSKAR MORGENSTERN, PREDICTABILITY OF STOCK PRICES (1970)).

60. A few of the chapter headings will convey the spirit of the enterprise: Gene Fama Makes the Best Proposition in Economics; Jack Bogle Takes on the Performance Cult (And Wins); Michael Jensen Gets Corporations to Obey the Market; Alan Greenspan Stops a Random Plunge Down Wall Street; Gene Fama and Dick Thaler Knock Each Other Out.

61. See, e.g., Fox, *supra* note 31, at 94 ("Taking a class with [Milton] Friedman—a charming, friendly, even-tempered little man saying *outrageous* things—was often a life-changing event.").

