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Behavioral Antitrust

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BEHAVIORAL ANTITRUST

Amanda P. Reeves^{*} &
Maurice E. Stucke^{†‡}

Contents

I. Overview of Behavioral Economics	7
A. What Is Behavioral Economics?	7
1. Bounded Rationality	8
2. Bounded Willpower	12
3. Bounded Self-Interest	13
B. Some Criticisms and Shortcomings of Behavioral Economics, and Responses to Those Criticisms	16
1. Representativeness	16
2. Firm v. Individual Behavior	17
3. No Unifying Theory	23
4. Rule-of-Law Concerns	24
II. The Persistence of Rational Choice Theory in Antitrust Law	26
A. The Chicago School's Assumption of Rationality	26
B. How the Rationality, Profit Maximization, and Efficiency Assumptions Permeate Modern Federal Antitrust Law	31
III. How Can Behavioral Economics Inform Antitrust Policies?	38
A. Assumption that Rational Profit-maximizers Will Defeat the Exercise of Market Power in Markets Characterized with Low Entry Barriers	40
B. Assumption that Companies Merge to Generate Significant Efficiencies	47
C. Assumption that Rational Big Buyers Will Thwart the Exercise of Market Power	52
D. Reliance on Optimal Deterrence Theory to Deter Cartels	58
IV. Recommendations Related to the Practical Application of Behavioral Economics Going Forward	62

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A. To be Applied Well, Behavioral Antitrust Requires More Empirical Work	62
1. Post-Merger Review	63
2. Post-Conviction Review	71
B. Possibilities for Incorporating Behavioral Economics into Existing Antitrust Doctrine	72
1. Use of “Real World” Evidence That Is Not Explainable by Neoclassical Economic Theory	73
2. A Better Informed Competition Advocate	78
3. Providing Insights into Possible Applications of Section 5 of the FTC Act	82
Conclusion	85

Fielding congressional questioning during the financial crisis, former Federal Reserve Chairman Alan Greenspan expressed his “distress” in discovering a “flaw” in his free-market beliefs: “Those of us who have looked to the self-interest of lending institutions to protect shareholder’s equity (myself especially) are in a state of shocked disbelief.”¹ The financial crisis has also prompted the jurist and famous Chicago School theorist Richard A. Posner to reconsider some of his earlier beliefs.²

Some say that the Chicago School’s economic theories with their strong presumption of rational self-interested profit-maximizers with perfect willpower lost their luster within academic circles over twenty years ago with the rise of post-Chicago School game theories. The post-Chicago School used rational actor models to challenge traditional Chicago

¹ Kara Scannell & Sudeep Reddy, *Greenspan Admits Errors to Hostile House Panel*, WALL ST. J., Oct. 24, 2008, <http://online.wsj.com/article/SB122476545437862295.html>.

² See, e.g., John Cassidy, *Interview with Judge Posner*, THE NEW YORKER, Jan. 13, 2010 (interview with Posner) (“The more informal economics of Keynes has made a big comeback because people realize that even though it is kind of loose . . . it seems to have more of a grasp of what is going on in the economy.”), available at <http://www.newyorker.com/online/blogs/johncassidy/2010/01/interview-with-richard-posner.html#ixzz0hJIhHeop>; Marcus Baram, *Judge Richard Posner Questions His Free-Market Faith In “A Failure Of Capitalism,”* HUFFINGTON POST, Apr. 20, 2009 (interview with Posner), http://www.huffingtonpost.com/2009/04/20/judge-richard-posner-disc_n_188950.html; RICHARD A. POSNER, A FAILURE OF CAPITALISM: THE CRISIS OF '08 AND THE DESCENT INTO DEPRESSION (2009).

predictions. Nonetheless, antitrust's economic theories, whether based on the Chicago,³ post-Chicago,⁴ or Harvard Schools,⁵ continue to assume rational self-interested market participants with perfect willpower.

This rationality assumption is under attack from several interdisciplinary economic fields, most notably behavioral economics. Behavioral economics, the management consulting firm McKinsey and Company recently observed, "is now mainstream."⁶ Even before the financial crisis, behavioral economics was a hot topic. It is a staple in graduate economics programs, business schools, and increasingly in law schools.⁷ Recent best-sellers have featured behavioral economics, such as *THE MYTH OF THE RATIONAL MARKET*,⁸ *ANIMAL SPIRITS*,⁹ *PREDICTABLY IRRATIONAL*,¹⁰ and *NUDGE*.¹¹ Behavioral economics has also led to subspecialties in the areas of

- subjective well-being and happiness;¹²

³ See, e.g., RICHARD A. POSNER, *ANTITRUST LAW* (2d ed. 2001); ROBERT H. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* (1978).

⁴ See, e.g., 1 PHILLIP E. AREEDA & HERBERT J. HOVENKAMP, *ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION* ¶ 113, at 134 (2d ed. 2000) ("Business firms are (or must be assumed to be) profit maximizers"); Herbert Hovenkamp, *Post-Chicago Antitrust: A Review & Critique*, 2 *COLUM. BUS. L. REV.* 259 (2001); *Symposium: Post-Chicago Economics*, 63 *ANTITRUST L.J.* 445-695 (1995).

⁵ William E. Kovacic, *The Intellectual DNA of Modern U.S. Competition Law for Dominant Firm Conduct: The Chicago/Harvard Double Helix*, 2007 *COLUM. BUS. L. REV.* 101 (2007) (summarizing contributions of Harvard School to modern antitrust analysis).

⁶ Dan Lovallo & Olivier Sibony, *The Case for Behavioral Strategy*, *McKinsey Quarterly* 2 (March 2010).

⁷ Law schools, such as University of Tennessee, Yale, Harvard, and Georgetown offer behavioral law and economics seminars.

⁸ JUSTIN FOX, *THE MYTH OF THE RATIONAL MARKET: A HISTORY OF RISK, REWARD, AND DELUSION ON WALL STREET* (2009).

⁹ GEORGE A. AKERLOF & ROBERT J. SHILLER, *ANIMAL SPIRITS: HOW HUMAN PSYCHOLOGY DRIVES THE ECONOMY, AND WHY IT MATTERS FOR GLOBAL CAPITALISM* (2009).

¹⁰ DAN ARIELY, *PREDICTABLY IRRATIONAL: THE HIDDEN FORCES THAT SHAPE OUR DECISIONS* (2008).

¹¹ RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* (2008).

¹² RICHARD LAYARD, *HAPPINESS: LESSONS FROM A NEW SCIENCE* 29-30 (2005);

- the media (including demand-driven media bias);¹³
- marketing (including the paradox of choice);¹⁴
- behavioral finance;¹⁵
- criminal justice;¹⁶
- sports;¹⁷

Maurice E. Stucke, *Money, Is That What I Want? Competition Policy & the Role of Behavioral Economics*, 50 SANTA CLARA L. REV. 893, 928-40 (2010); George Loewenstein & Peter A. Ubel, *Hedonic Adaptation & the Role of Decision & Experience Utility in Public Policy*, 92 J. PUBLIC ECON. 1795-1810 (2008); Daniel Kahneman & Alan B. Krueger, *Developments in the Measurement of Subjective Well-Being*, 20 J. ECON. PERSP. 3-24 (2006); Rafael Di Tella & Robert MacCulloch, *Some Uses of Happiness Data in Economics*, 20 J. ECON. PERSP. 25, 26 (2006); Daniel Kahneman et al., *Would You Be Happier If You Were Richer? A Focusing Illusion*, SCIENCE, June 30, 2006, at 1908-1910; Richard Layard, *Happiness & Public Policy: A Challenge to the Profession*, 116 ECON. J. C24-C33 (2006); Daniel Kahneman & Robert Sugden, *Experienced Utility as a Standard of Policy Evaluation*, 32 ENVTL. & RESOURCE ECON. 161-181 (2005); Bruno S. Frey & Alois Stutzer, *What Can Economists Learn from Happiness Research?*, 40 J. ECON. LITERATURE 402-435 (2002).

¹³ See, e.g., Matthew Gentzkow & Jesse M. Shapiro, *Competition & Truth in the Market for News*, 22 J. ECON. PERSP. 133-154 (2008); Matthew A. Baum & Tim Groeling, *New Media & the Polarization of American Political Discourse*, 25 POL. COMM. 345-365 (2008); Matthew Gentzkow & Jesse M. Shapiro, *What Drives Media Slant? Evidence from U.S. Daily Newspapers*, NBER Working Paper 12707 (2007), available at <http://faculty.chicagosb.edu/matthew.gentzkow/biasmeas052507.pdf>; Stefano DellaVigna & Ethan Kaplan, *The Political Impact of Media Bias*, in FACT FINDER, FACT FILTER: HOW MEDIA REPORTING AFFECTS PUBLIC POLICY (2007), available at <http://elsa.berkeley.edu/~sdellavi/wp/mediabiaswb07-06-25.pdf>; Charles S. Taber & Milton Lodge, *Motivated Skepticism in the Evaluation of Political Beliefs*, 50 AM. J. POL. SCI. 755-769 (2006); Matthew Gentzkow & Jesse M. Shapiro, *Media, Education & Anti-Americanism in the Muslim World*, 18 J. ECON. PERSP. 117-133 (2004).

¹⁴ BARRY SCHWARTZ, THE PARADOX OF CHOICE: WHY MORE IS LESS (2004); Simona Botti & Sheena S. Iyengar, *The Dark Side of Choice: When Choice Impairs Social Welfare*, 25 J. PUB. POL'Y & MARKETING 24 (2006). As for the implications of the paradox of choice on the poor, see Marianne Bertrand et al., *Behavioral Economics & Marketing in Aid of Decision Making Among the Poor*, 25 J. PUB. POL'Y & MARKETING 8, 12 (2006).

¹⁵ 2 ADVANCES IN BEHAVIORAL FINANCE (Richard H. Thaler ed., 2005); ROBERT J. SHILLER, IRRATIONAL EXUBERANCE (2001).

¹⁶ Richard H. McAdams and Thomas S. Ulen, *Behavioral Criminal Law and Economics* (November 11, 2008), U. CHI. L. & ECON., Olin Working Paper No. 440, 2008), available at <http://ssrn.com/abstract=1299963>; Birte Englich et al., *Playing Dice With Criminal Sentences: The Influence of Irrelevant Anchors on Experts' Judicial Decision Making*, 32 PERSONALITY & SOC. PSYCHOL. BULL. 188-200 (2006).

¹⁷ See, e.g., Devin G. Pope and Maurice E. Schweitzer, *Is Tiger Woods Loss Averse? Persistent Bias in the Face of Experience, Competition, and High Stakes* (June 13, 2009), <http://ssrn.com/abstract=1419027>.

- health care;¹⁸
- behavioral political economy;¹⁹
- behavioral institutional design;²⁰
- behavioral labor economics;²¹ and
- behavioral industrial organization.²²

The financial crisis raised important issues of market failure, weak regulation, our lack of understanding about how many markets actually operate, and moral hazard. The crisis has also prompted U.S. policymakers to reexamine the assumptions underlying the prevailing neoclassical economic theories.²³ Competition authorities in the European Commission,²⁴ U.K.'s Office of Fair Trading,²⁵ and United States²⁶ are

¹⁸ See, e.g., Thomas L. Greaney, *Economic Regulation of Physicians: A Behavioral Economics Perspective*, 53 SAINT LOUIS U. L. J. 1189 (2009).

¹⁹ Stefano DellaVigna, *Psychology and Economics: Evidence from the Field*, 47 J. ECON. LIT. 315, 364 (2009).

²⁰ *Id.* at 364-65.

²¹ *Id.* at 362-63.

²² *Id.* at 361-62.

²³ John Authers, *Wanted: New Model for Markets*, FIN. TIMES, Sept. 29, 2009, at 9.

²⁴ Eliana Garcés, *The Impact of Behavioral Economics on Consumer and Competition Policies*, 6 COMPETITION POL'Y INT'L 145 (2010); "Why Consumers behave the way they do: Commissioner Kuneva hosts high level conference on Behavioural Economics," Reference No. IP/08/1836 (Nov. 28, 2008), available at <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/08/1836&format=HTML&aged=0&language=EN&guiLanguage=en>.

²⁵ See, e.g., Office of Fair Trading, *The Impact of Price Frames on Consumer Decision Making* (May 2010), http://www.offt.gov.uk/shared_offt/economic_research/OFT1226.pdf; Matthew Bennett et al., *What Does Behavioral Economics Mean for Competition Policy?*, 6 COMPETITION POL'Y INT'L 111, 118 (Spring 2010); Amelia Fletcher, "What do consumer policymakers need from behavioural economists?" available at http://ec.europa.eu/consumers/dyna/conference/video_fletcher_en.htm.

²⁶ FTC Commissioner Rosch, for example, has been interested in the implications of behavioral economics for competition policy. See J. Thomas Rosch, Comm'r, Fed. Trade Comm'n., *Behavioral Economics: Observations Regarding Issues that Lie Ahead* (June 9, 2010), <http://www.ftc.gov/speeches/rosch/100609viennaremarks.pdf>; J. Thomas Rosch, Comm'r, Federal Trade Comm'n., *Managing Irrationality: Some Observations on Behavioral Economics and the Creation of the Consumer Financial Protection Agency* (Jan. 6, 2010), <http://www.ftc.gov/speeches/rosch/100106financial-products.pdf>. Likewise, Carl Shapiro, Deputy Assistant Attorney General in the DOJ's Antitrust Division and Joe Farrell, Director of the FTC's Bureau of Economics, recently acknowledged that

interested in behavioral economics. The American Antitrust Institute²⁷ and antitrust scholars²⁸ are turning to behavioral economics. Soon enterprising antitrust lawyers may raise behavioral economics findings in white papers to the agencies or in federal court pleadings. In fact, the behavioral economics literature was recently raised before the U.S. Supreme Court,²⁹ in a case where two Chicago School theorists (Judges Posner and Easterbrook) disagreed on the mutual fund industry's efficiency.³⁰

The immediate question is to what extent the irrational conduct that behavioral economics identifies should have implications for evaluating whether conduct is anticompetitive. The Chicago School's neoclassical economic theories teach that irrationality is irrelevant to antitrust doctrine:

behavioral economics may offer insights relevant to antitrust and consumer protection analysis. *Roundtable Interview with Joseph Farrell and Carl Shapiro*, ANTITRUST SOURCE (February 2010).

²⁷ At its 2008 annual meeting, the American Antitrust Institute's (AAI) keynote speaker and panelists discussed the applicability of behavioral economics to competition policy. AAI, Audio Recordings from AAI's Annual National Conference, <http://www.antitrustinstitute.org/Archives/2008conferenceaudio.ashx> (last visited Jan. 10, 2010); see also AMERICAN ANTITRUST INSTITUTE, THE NEXT ANTITRUST AGENDA: THE AMERICAN ANTITRUST INSTITUTE'S TRANSITION REPORT ON COMPETITION POLICY TO THE 44TH PRESIDENT 26, 172, 185, 200–01, 272–75 (2008) (recommending more empirical analysis to further antitrust policies involving cartels, mergers, and media industries); British Institute of International and Comparative Law, *available at* <http://www.biicl.org/clf/clfmeetings2009/> (hosting a Competition Law Forum on behavioral economics in July 2009).

²⁸ At the *Next Generation of Antitrust Scholarship Conference* held at NYU law school in January 2010, several papers applied behavioral economics to antitrust policy. See Max Huffman, *Behavioral Exploitation and Antitrust*; Avishalom Tor & William J. Rinner, *Behavioral Antitrust: A New Approach to the Rule of Reason after Leegin*, University of Haifa Faculty of Law Legal Studies Research Paper Series (Dec. 1, 2009), <http://ssrn.com/abstract=1522948>; Maurice E. Stucke, *Am I a Price-Fixer? A Behavioral Economics Analysis of Cartels*, in CRIMINALISING CARTELS: A CRITICAL INTERDISCIPLINARY STUDY OF AN INTERNATIONAL REGULATORY MOVEMENT (Caron Beaton-Wells & Ariel Ezrachi eds. Hart Publishing Oxford forthcoming 2011), *available at* <http://ssrn.com/abstract=1535720>.

²⁹ Brief of Robert Litan, et al. as Amici Curiae Supporting Petitioners, *Jones v. Harris Assoc.*, No. 08-586 (U.S. June 17, 2009).

³⁰ *Jones v. Harris Assocs.*, 537 F.3d 728 (7th Cir. 2008), *reh'g en banc den.* 527 F.3d 627. The Court ultimately eschewed the issue, 130 S. Ct. 1418, 1431 (2010), holding that the debate between Judges Easterbrook and Posner was "a matter for Congress, not the courts."

rational firms eliminate irrationality from the marketplace. After the financial crisis, however, one cannot assume that markets operate as efficiently as the Chicago School predicts. Antitrust policymakers must inquire what role behavioral economics can play in the agencies' enforcement of the federal antitrust laws.³¹

With increasing interest in behavioral economics' implications for competition policy, Part I of this Article provides an overview of behavioral economics. Part II discusses how the assumption of rational, self-interested profit-maximizers became so embedded in antitrust policy. Part III discusses to what extent the behavioral economics literature can inform antitrust policies and cause lawmakers to question their neoclassically-based assumptions. Part IV offers several recommendations related to the practical application of behavioral economics to antitrust law going forward.

I. OVERVIEW OF BEHAVIORAL ECONOMICS

A. *What Is Behavioral Economics?*

Neoclassical economic theory assumes that humans are rational, self-interested beings with perfect willpower. In making determinations under their Horizontal Merger Guidelines, the Federal Trade Commission and Department of Justice's Antitrust Division, for example, assume that actual behavior comports with rational, self-interested (i.e., profit-maximizing) behavior.³² In conduct cases, the U.S. federal courts dismiss complaints or grant summary judgment if antitrust plaintiffs' theories do not make "economic sense," such as alleging economically irrational behavior.³³

³¹ For purposes of this article, the relevant laws are Section 1 and 2 of the Sherman Act, 15 U.S.C. §§ 1-2, and Section 7 of the Clayton Act, 15 U.S.C. § 18.

³² U.S. Dep't of Justice & Federal Trade Comm'n, Horizontal Merger Guidelines § 1.0 (2010), [hereinafter "Horizontal Merger Guidelines"] ("In evaluating how a merger will likely change a firm's behavior, the Agencies focus primarily on how the merger affects conduct that would be most profitable for the firm.").

³³ Christopher R. Leslie, *Rationality Analysis in Antitrust*, 158 U. PA. L. REV. 261 (2010); *Bell Atl. Corp. v. Twombly*, 550 U.S. 544 (2007) (requiring a plaintiff plead

Behavioral economics uses methods from neuroscience and social sciences such as psychology and sociology to understand the limits of this assumption.³⁴ Testing this rationality assumption through experiments,³⁵ behavioral economists find that people systematically and predictably do not behave in certain scenarios as neoclassical economic theory predicts.³⁶ Instead, behavioral economics characterizes human behavior as defined by three traits: bounded rationality, bounded willpower, and bounded self-interest.

1. Bounded Rationality

Rational agents in theory seek out the optimal amount of information and readily and continually update their prior factual beliefs with relevant and reliable empirical data. It is similar to a treasure hunt: as we receive new factual clues along the way, we revise our beliefs and modify our behavior. In contrast, bounded rationality acknowledges the distinction between reasoning versus intuition.³⁷ Consumers are not perfectly objective and rational Bayesians (in that they readily update prior factual beliefs whenever appraised of reliable information). Instead, while we may maintain an illusion of objectivity, our goals (much like those of a prosecutor seeking to convince the court of the defendant's guilt) can bias our beliefs about everything from our perception of ourselves, other people, and events, to the value of goods or services, to our evaluation of scientific

“enough facts to state a claim to relief that is plausible on its face”).

³⁴ For interesting surveys of the behavioral economics research, see MORAL SENTIMENTS AND MATERIAL INTERESTS: THE FOUNDATIONS OF COOPERATION IN ECONOMIC LIFE (Herbert Gintis et al. eds., 2005); ADVANCES IN BEHAVIORAL ECONOMICS (Colin F. Camerer et al. eds., 2004); DellaVigna, *supra* note 19; Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1487 (1998).

³⁵ DellaVigna, *supra* note 19; Colin F. Camerer & George Loewenstein, *Behavioral Economics: Past, Present, Future*, in ADVANCES IN BEHAVIORAL ECONOMICS, *supra* note 34, at 7.

³⁶ Avishalom Tor, *The Methodology of the Behavioral Analysis of Law*, 4 HAIFA L. REV. 237, 242-43 (2008).

³⁷ Daniel Kahneman, *Maps of Bounded Rationality: Psychology for Behavioral Economics*, 93 AM. ECON. REV. 1449, 1451 (2003).

evidence.³⁸ As a result, we access only a subset of our relevant knowledge and give undue weight to evidence that supports our beliefs while discounting evidence that undercuts our beliefs.

In one experiment, the subjects received the same twenty-seven pages of evidentiary materials from an actual Texas lawsuit filed by an injured motorcyclist against the driver of the automobile that collided with him.³⁹ Subjects were randomly assigned the role of plaintiff or defendant. After reading the case materials, they predicted what the judge had awarded and what a “fair” settlement would be. Participants playing the plaintiff predicted a significantly larger award by the judge (on average \$14,527 higher than defendants’ prediction). The plaintiffs and defendants each recalled more arguments favoring their side, and weighed the arguments favoring their side more heavily. In a later experiment, the subjects first read the case materials and offered their estimates of the judge’s award and a fair settlement. Only then were they told of their role as plaintiff or defendant. Those who learned their roles after they offered estimates had closer estimates of the likely award, and were significantly more likely to settle.

Another key insight of bounded rationality is that humans rely on rules of thumb (heuristics) in making decisions, and engage in a couple of steps of iterated reasoning. For example, framing effects (the way the choice is framed, such as a sure gain or avoiding a loss) can alter the way we decide.⁴⁰ In one experiment individuals were offered either a fifty percent

³⁸ Ziva Kunda, *The Case for Motivated Reasoning*, 108 PSYCHOL. BULL. 480, 482-95 (1990).

³⁹ Linda Babcock & George Loewenstein, *Explaining Bargaining Impasse: The Role of Self-Serving Biases*, in ADVANCES IN BEHAVIORAL ECONOMICS, *supra* note 34, at 328.

⁴⁰ Under the Asian Disease hypothetical, 600 people are expected to die. The majority choose Program A (saving a sum certain of lives (200 people)) versus Program B (one-third probability that 600 people will be saved (two-thirds probability that no one will be saved)). Yet a substantial majority did not choose Program A when it presented a sum

chance of \$110 or \$50. Rational profit-maximizers should opt for the greater discounted value – the 50 percent chance (\$55); yet most people were risk adverse and opted for \$50. But when they stood to lose either \$50 versus a fifty percent chance of losing \$110, many became risk seeking and opted for the latter. Moreover, losses closer to a reference point hurt more than the joy from comparable gains.⁴¹ Bounded rationality encompasses other anomalies in human decision-making, including:

- the endowment effect (when we demand much more to give up and sell an object than what we would be willing to pay to acquire that object);⁴²
- status quo bias (when the choice of default option impacts the outcome);⁴³
- anchoring effects (how a randomly chosen standard may subsequently influence a judgment on the same task);⁴⁴
- availability heuristic (when we assess the probability of an event by asking whether relevant examples come readily to mind);⁴⁵

certain of deaths (400) versus Program B (one-third probability that 600 people will be saved (no deaths) and two-thirds probability that 600 people will die). Kahneman, *supra* note 37, at 1458.

⁴¹ Kahneman, *supra* note 37, at 1456.

⁴² RICHARD H. THALER, *THE WINNER'S CURSE: PARADOXES AND ANOMALIES OF ECONOMIC LIFE* 63 (1992); Jolls et al., *supra* note 34, at 1482, 1484, 1498; Daniel Kahneman, et al., *Experimental Tests of the Endowment Effect and the Coase Theorem*, 98 J. POL. ECON. 1325, 1327 tbl.1 (1990) (summarizing studies).

⁴³ THALER, *supra* note 42, at 68-70.

⁴⁴ One series of experiments is to establish an arbitrary initial price (such as the last two digits of one's social security number) in the test subjects' minds. While that initial price is arbitrary, once it is established in their minds, it shapes what the subjects are willing to pay for that item and related items. Ariely, *supra* note 1010, at 25-28; Englich et al., *supra* note 16 (describing how sentencing anchor can influence judges and prosecutors).

⁴⁵ Kahneman, *supra* note 37, at 1467 (people estimating more words on page that end with “-ing” than have the second from last letter ending with “n” or estimating twice the number of murders in Detroit versus the state of Michigan).

- representative heuristic (when we ignore the “base rates and overestimate the correlation between what something appears to be and what something actually is”);⁴⁶
- overconfidence bias (where, for example, executives in several behavioral studies were overconfident in their ability to manage a company, systematically underestimated their competitors’ strength, and were prone to self-serving interpretations of reality (such as taking credit for positive outcomes, and blaming the environment for negative outcomes));⁴⁷
- optimistic bias (when we believe that good things are more likely (and bad things less likely) than average to happen to us);⁴⁸ and
- hindsight bias (our tendency to overestimate the ex ante prediction that we had concerning the likelihood of an event’s occurrence after learning that it actually did occur).⁴⁹

⁴⁶ Kahneman, *supra* note 37, at 1462; Russell B. Korobkin & Thomas S. Ulen, *Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics*, 88 CAL. L. REV. 1051, 1086 (2000) (citing Tversky and Kahneman’s bank teller problem).

⁴⁷ C. Engel, *The Behaviour of Corporate Actors: A Survey of the Empirical Literature* (May 2008) Max Planck Institute for Research on Collective Goods Preprint No. 2008/23 7-8, <http://ssrn.com/abstract=1135184>; DellaVigna, *supra* note 19.

⁴⁸ Neil D. Weinstein & William M. Klein, *Resistance of Personal Risk Perceptions to Debiasing Interventions*, in *HEURISTICS AND BIASES: THE PSYCHOLOGY OF INTUITIVE JUDGMENT* 313 (Thomas Gilovich eds. 2002).

⁴⁹ Korobkin & Ulen, *supra* note 46, at 1095-1100.

2. Bounded Willpower

Willpower refers to the notion of self-control: when we know something is bad for us, we avoid it. Bounded willpower, in contrast, refers to when we knowingly engage in actions known to be detrimental and therefore act contrary to our long-term interests.⁵⁰ As anyone who has ever overeaten, overspent, or otherwise succumbed to temptation (despite having the best intentions not to do so) can confirm, many people are not very good at predicting their willpower.

Recent neurological research has examined to what extent the discrepancy between short-run and long-run human preferences reflects the activation of different parts of the brain's neural system.⁵¹ This research suggests that choices that involve an immediate reward can disproportionately activate the impulsive part of the brain (the Limbic system) rather than the more deliberative part of the brain that engages in long-term cost-benefit analyses (the Lateral Prefrontal Cortex).⁵² At a practical level, these insights suggest that, in situations that involve a short-term gain even at a long-term cost, we may not engage in the cost-benefit analysis expected under rational choice theory.

Thus, recognizing our bounded willpower, we at times seek commitment devices. We opt for automatic payroll deductions into 401(k) retirement plans, certificates of deposit, or other plans with liquidity restrictions to constrain our immediate consumption.⁵³ We may place the

⁵⁰ Jolls et al., *supra* note 34, at 1480.

⁵¹ Samuel M. McClure et al., *Separate Neural Systems Value Immediate & Delayed Monetary Rewards*, SCIENCE, Oct. 13, 2004, at 503-507.

⁵² *Id.* (showing that choices involving an immediate outcome disproportionately activated the Limbic system and that, in contrast, when participants chose a long-run option, the Lateral Prefrontal Cortex was significantly more active than the Limbic system).

⁵³ For the effectiveness of changing the default option to automatic enrollment in retirement accounts, see Richard H. Thaler & Shlomo Benartzi, *Save More Tomorrow™: Using Behavioral Economics to Increase Employee Saving*, 112 J. POL. ECON. S164-87 (2004); John Beshears, et al., *The Importance of Default Options for Retirement Savings*,

alarm clock further away, not shop when we are hungry, or set our watch slightly ahead of time. These commitment devices – while a rational response to our bounded willpower – can lead us to “overcorrect” for our bounded willpower.⁵⁴ We may pay more for less of what we like too much (such as buying cigarettes individually or by the pack rather than by the carton). And, more generally, we may behave in ways contrary to the tenets of wealth maximization (such as giving the U.S. government an interest-free loan by withholding too much taxes from our paycheck to ensure a return at tax time).

3. Bounded Self-Interest

Self-interest means people seek to maximize their wealth and other material goals, and generally do not care about other social goals, to the extent they conflict with personal wealth maximization. Bounded self-interest, the behavioral experiments confirm, means that human motivation is more nuanced and complex than this simplistic assumption of self-interest.⁵⁵

Psychological and experimental economic evidence show that people care about treating others, and being treated, fairly.⁵⁶ Recent experiments in bargaining settings, for example, systematically show “that substantial fractions of most populations adhere to moral rules, willingly give to others, and punish those who offend standards of appropriate behavior, even at a cost to themselves and with no expectation of material reward.”⁵⁷ This

NBER Working Paper 12009 (Jan. 2006); Bridgette C. Madrian & Dennis Shea, *The Power of Suggestion: Inertia in 401(K) Participation & Savings Behavior*, 116 Q. J. ECON. 1149-1187 (2001).

⁵⁴ Ted O'Donoghue & Matthew Rabin, *Doing it Now or Later*, 89 AMERICAN ECON. REV. 103, 111-12 (1999) (discussing how sophisticated individuals recognize their bounded willpower and preproperate (i.e., doing a chore earlier than they need to)).

⁵⁵ Stucke, *Money*, *supra* note 12.

⁵⁶ Jolls et al., *supra* note 34, at 1479.

⁵⁷ Samuel Bowles, *Policies Designed for Self-interested Citizens May Undermine “The Moral Sentiments”*: Evidence from Economic Experiments, SCIENCE, June 20, 2008, at 1606.

“strong reciprocity” in human behavior, however, also entails “a predisposition . . . to punish [at personal cost] those who violate the norms of cooperation, even when it is implausible to expect that these costs will be repaid”⁵⁸ Similarly, behavioral experiments suggest that many people do not free ride at all (or to the extent that rational choice theory predicts). In these public goods experiments, “people have a tendency to cooperate until experience shows that those with whom they’re interacting are taking advantage of them.”⁵⁹ Consequently individuals at times act benevolently even when it is not in their financial interest (such as tipping waiters and waitresses in cities they are unlikely to revisit) and will sacrifice monetary gains to punish those they feel are acting unfairly, such as by deviating from an established reference point of “fairness.”

One frequently cited experiment of negatively reciprocal behavior and bounded self-interest is the “Ultimatum Game,” where a subject is given some money and must offer a second subject some portion thereof. If the second subject accepts the offer, both can keep the money. If the second subject rejects the offer, neither keeps the money. Neoclassical economic theory predicts people will offer the smallest amount—one penny. If everyone pursues their self-interest, the first subject would selfishly want as much money as possible; the second subject recognizes that a penny is better than nothing.

But actual experiments of this Ultimatum Game in over twenty countries show the contrary. In expanding the Ultimatum Game experiment

⁵⁸ Herbert Gintis et al., *Explaining Altruistic Behavior in Humans*, 24 *EVOLUTION & HUM. BEHAV.* 153, 154 (2003) (arguing that “the evolutionary success of our species and the moral sentiments that have led people to value freedom, equality, and representative government are predicated upon strong reciprocity and related motivations that go beyond inclusive fitness and reciprocal altruism”).

⁵⁹ THALER, *supra* note 42, at 14.

to fifteen small-scale economies from twelve countries on four continents,⁶⁰ participants reciprocated and did not offer the nominal amount. Nor did high financial stakes eliminate this bounded self-interest.⁶¹ Most offered significantly more than the nominal amount (ordinarily forty to fifty percent of the total amount available) and recipients about half the time rejected nominal amounts (less than twenty percent of the total amount available). Consequently, most receivers in this game forgo wealth to punish unfair offers, and offerors generally offer more than the nominal profit-maximizing amount.⁶² Wealth may be still relevant to offerors, but unlike the self-interested profit-maximizer, they recognize the need for a sense of fairness and equity to maximize their return.

Similarly, one recent study found that informal religious norms can play an important role in supporting a competitive market economy.⁶³ The study measured the individuals' propensities for fairness and willingness to punish unfairness. The study involved fifteen populations that vary in their degree of market integration and their participation in a world religion (such as Islam or Christianity). The financial stakes in the behavioral experiments were set at one day's local wages. The results reflected a stark contrast between nomadic, non-integrated, fully-subsistence societies with local religions (such as the Hadza population from Tanzania) and fully market-incorporated societies with world-wide religions (such as the residents of Missouri, United States and Accra City, Ghana). As market integration increases (as measured by the percentage of purchased calories in diet), so too people become generous (sharing more of the day's wages with the

⁶⁰ Gintis et al., *supra* note 58, at 154.

⁶¹ Kahneman, *supra* note 37, at 1468–69.

⁶² Maurice E. Stucke, *Behavioral Economists at the Gate: Antitrust in the Twenty-First Century*, 38 LOY. U. CHI. L. J. 513, 529-30 (2007).

⁶³ Joseph Henrich et al., *Markets, Religion, Community Size, and the Evolution of Fairness and Punishment*, SCIENCE, March 19, 2010, at 1480.

other player in the Dictator Game). Likewise, as the society's participation in Islam or Christianity increases, so too does the sharing in these behavioral experiments increase by about 6 to 10 percent.

Aside from reciprocity, individuals at times may act from an intrinsic motivation, independent of any financial reward. Indeed, financial rewards at times decrease (rather than increase) motivation or the likelihood of the desired results.⁶⁴ Likewise, financial disincentives may not be as effective as social or ethical norms in curbing unwanted behavior.⁶⁵

B. Some Criticisms and Shortcomings of Behavioral Economics, and Responses to Those Criticisms

While amused by the behavioral economics literature, some question its applicability to individual (or firm) behavior in the marketplace.

1. Representativeness

One criticism is that behavioral economics focuses on certain persons not representative of the total population (namely university students) in an artificial setting (namely lab experiments).⁶⁶ So naturally students' decisions in experimental games with small financial stakes could differ from real market behavior with often greater financial stakes.⁶⁷

⁶⁴ For example, in one study, high school students collected donations for a public purpose in Israel's annually publicized "donation days." One group of students received a pep talk about the importance of these donations. A second group, in addition to the pep talk, was promised one percent of the amount collected (to be paid from an independent source). A third group was promised ten percent of the amount collected. Under rational choice theory, the third group, motivated by the greater financial incentive, should collect the most donations. Instead, the groups promised the one percent and ten percent shares collected a lower average amount (\$153.67 and \$219.33, respectively) than the group given only the pep talk (\$238.60). Uri Gneezy & Aldo Rustichini, *Incentives, Punishment, and Behavior*, in *ADVANCES IN BEHAVIORAL ECONOMICS*, *supra* note 34, at 573-80.

⁶⁵ Gneezy & Rustichini, *supra* note 64, at 581-86.

⁶⁶ See, e.g., Richard A. Posner, *Rational Choice, Behavioral Economics, and the Law*, 50 *STAN. L. REV.* 1551, 1556 (1998).

⁶⁷ At times, the behavior of university students is closer to rational choice theory. For example, university students are more likely than non-students to give nothing in dictator games. Christoph Engel, Dictator Games: A Meta Study, MPI Collective Goods Preprint No. 2010/07, at 13 (March 2010), <http://ssrn.com/abstract=1568732>.

First behavioral lab experiments enable researchers to isolate variables and examine how behavior correlates with each variable (although one criticism from non-economists is that these experiments are an elaborate and costly way of telling us what we already know). Moreover, today's behavioral economics literature includes field experiments and data from actual market transactions.⁶⁸ Not surprisingly, marketing companies are devoting resources on behavioral experiments and neuroscience to learn more about consumers' behavior decisions.⁶⁹

2. Firm v. Individual Behavior

A second criticism is that the insights from behavioral economics about individual behavior are not helpful in predicting firm behavior in competitive markets. Market participants typically are repeat players who learn from and correct their mistakes. Firms and their employees have greater incentives to rationally profit-maximize, as they often are subject to competitive pressures.⁷⁰ Many firms benefit from the division of labor, and accordingly train or hire experts to capture the benefits from specialized knowledge. Irrational participants eventually exit the market. Thus, as Posner opines, "unusually 'fair'" people will avoid or be forced out of "roughhouse activities—including highly competitive businesses, trial lawyering, and the academic rat race."⁷¹ For several reasons, these criticisms are misplaced.

First, neoclassical economists often use the stock market as the example that most closely approximates perfect competition.⁷² But how

⁶⁸ For one recent survey of the literature, see DellaVigna, *supra* note 19, at 320–65.

⁶⁹ Stuart Elliott, *A Quest to Learn What Drives Consumer Decisions*, N.Y. TIMES, June 30, 2010, at B3, available at <http://www.nytimes.com/2010/06/30/business/media/30adco.html>.

⁷⁰ See, e.g., Edward L. Glaeser, *Paternalism & Psychology*, 73 U. CHI. L. REV. 133, 140–41, 144–46 (2006) (arguing that consumers outside the lab have stronger incentives to reduce error, which they can through experience).

⁷¹ Posner, *supra* note 66, at 1570.

⁷² Posner, *Antitrust Law*, *supra* note 3, at 164.

many people after the financial crisis still have faith in the Efficient Market Hypothesis, which posits that stock prices reflect their fundamental value (the discounted sum of expected future cash flow)? The behavioral finance literature questions the degree of efficiency in the stock market and addresses the limits of arbitrage.⁷³ Consequently, if irrationality is not driven out of supposedly perfectly competitive markets, why should we assume that irrationality is driven out in less efficient markets? Accordingly, the assumption that bounded rational consumers magically transform themselves individually or collectively into rational, far-sighted, strategic maximizers with perfect willpower upon entering the workplace is empirically suspect.

Indeed there is evidence that firms as institutions may depart from rationality, although at times in different ways and degrees than individuals do. People can behave differently depending on situational factors, such as when alone or in groups.⁷⁴ Groups, at times, can minimize individual biases, but at other times (such as cults, mobs, and “groupthink”⁷⁵) displace independent thinking. Firm behavior itself can vary, as firms vary by purpose (non-profit versus profit), structure (partnership, family concern, conglomerate), national identity and cultural norms (local firm, multinational), regulatory environment (utility versus unregulated concern), and size (large versus small).

Take, for example, the United States’ antitrust challenge of MIT and

⁷³ ANDREI SHLEIFER, *INEFFICIENT MARKETS: AN INTRODUCTION TO BEHAVIORAL FINANCE* (2000); *ADVANCES IN BEHAVIORAL FINANCE* (Richard H. Thaler ed., 1993); see also Diana B. Henriques, *Odd Crop Prices Defy Economics*, N.Y. TIMES, March 28, 2008 (noting how on dozens of occasions since early 2006 the futures contracts for corn, wheat and soybeans have expired at a price much higher than the day’s cash price for those grains).

⁷⁴ PHILIP ZIMBARDO, *THE LUCIFER EFFECT* (2008).

⁷⁵ Robert S. Baron, *So Right It's Wrong: Groupthink and the Ubiquitous Nature of Polarized Group Decision Making*, in Vol. 37 *ADVANCES IN EXPERIMENTAL SOCIAL PSYCHOLOGY* 219 (Mark. P. Zanna, ed. 2005).

eight Ivy League universities.⁷⁶ For years the universities collectively determined the amount of financial aid for prospective students admitted to two or more of their universities. MIT on appeal raised an interesting argument. In a perfectly competitive market, price equals marginal cost, and no rational profit-maximizing firm (outside of a predatory pricing scheme) would price below marginal cost. MIT priced its discounted tuition to needy students at substantially below its marginal cost of providing education for one year. Because profit-maximizing companies would not engage in such “economically abnormal” behavior, MIT argued, its activity must be noncommercial.⁷⁷ The Third Circuit rejected MIT’s argument.⁷⁸ But it implicitly accepted that firms do not always behave as rational profit-maximizers.

One explanation as to why firms behave irrationally is that firms cannot always monitor and deter bounded rational employees from acting contrary to the firms’ long-term interests. As discussed *infra*, “CEOs may be overly optimistic about the profitability of mergers or other actions they undertake” and “managers might face incentives which induce them to care about relative rather than absolute profits.”⁷⁹ Similarly, when executives conspire to fix prices, they are not always acting with their firms’ knowledge or at their behest.

Second, bounded rationality, willpower, and self-interest can affect competition through the individual behavior of the millions of atomistic self-employed workers who supply their services or products into the

⁷⁶ *United States v. Brown Univ.*, 5 F.3d 658 (3d Cir. 1993).

⁷⁷ *Id.* at 666.

⁷⁸ The court noted that MIT’s full tuition figure was also significantly below its marginal cost. So “whether the price charged for educational services is below marginal cost is not probative of the commercial or noncommercial nature of the methodology utilized to determine financial aid packages.” *Id.*

⁷⁹ Mark Armstrong & Steffen Huck, *Behavioral Economics as Applied to Firms: A Primer*, 6 COMPETITION POL’Y INT’L 2 (Spring 2010); Engel, *Behaviour of Corporate Actors*, *supra* note 47.

supply chain.⁸⁰ This group includes self-employed farmers, ranchers, fishermen, free-lance writers, doctors, lawyers, and architects. These individuals can behave contrary to rational choice theory.⁸¹

Third, bounded rationality, willpower, and self-interest can affect competition through the individual behavior of the hundreds of millions of consumers. Individuals in the U.S. spend annually trillions of dollars on goods and services (\$3.201 trillion in purchases on credit, debit, and prepaid cards in 2009),⁸² so their bounded rational behavior can affect competition in many markets. Even if firms were relatively more rational than consumers, behavioral economics is relevant in understanding consumer decision-making and how firms compete to help or exploit these bounded rational consumers.

One staple of antitrust policy is predicting how consumers would respond to firms' raising the price of their goods or services by a small but significant non-transitory amount. Price frames, under rational choice theory, should not affect the consumers' decision. But the U.K.'s Office of Fair Trading ("OFT") recently studied how firms can use price frames to exploit bounded rational consumers.⁸³ The OFT's behavioral experiment

⁸⁰ U.S. Bureau of Labor Statistics, Household Data Household Data Annual Averages Annual Averages -- Table 12: Employed persons by sex, occupation, class of worker, full- or part-time status, and race (reporting 8.995 million self-employed non-agricultural workers and 836,000 self-employed agricultural workers in the U.S. in 2009), available at <http://www.bls.gov/cps/cpsaat12.pdf>.

⁸¹ Jane Goodman-Delahunty et al., *Insightful or Wishful: Lawyers' Ability to Predict Case Outcomes*, 16 PSYCHOL. PUB. POL'Y, & L. 133 (2010); Colin F. Camerer, *Prospect Theory in the Wild: Evidence from the Field*, in ADVANCES IN BEHAVIORAL ECONOMICS, *supra* note 34, at 148, 149; Linda Babcock & George Loewenstein, *Explaining Bargaining Impasse: The Role of Self-Serving Bias*, in ADVANCES IN BEHAVIORAL ECONOMICS, *supra* note 34, at 326, 333 (public school teachers); Colin F. Camerer et al., *Labor Supply of New York City Cab Drivers: One Day at a Time*, in ADVANCES IN BEHAVIORAL ECONOMICS, *supra* note 34, at 533 (questioning intertemporal substitution hypothesis that taxi drivers will work longer hours on high wage days).

⁸² The Nilson Report (May 2010), available at <http://www.nilsonreport.com/pdf/1freeissue.pdf>.

⁸³ OFT, Price Frames, *supra* note 25.

found that consumers deviated from rational choice theory in the following five price frames: (i) “drip pricing,” where a lower price is initially disclosed to the consumer and additional charges are added as the sale progresses; (ii) “sales,” where the “sales” price is referenced off an inflated regular price (was \$2, now \$1); (iii) “complex pricing,” such as three-for-two offers, where the unit price requires some computation; (iv) “baiting,” where sellers promote a special deal, but offer only a limited number of goods at that price; and (v) “time limited offers”, where the special price is available for a short period. Consumers made more mistakes and were especially worse off under drip pricing and time-limited offers. Thus one application of behavioral economics to antitrust is to model consumer behavior and consider the effect of this behavior on competition.

As these observations suggest, the empirical question is not whether firms and consumers are equally irrational, but the degree and type of biases and heuristics that different firms display. Not surprisingly, there is already a wide body of research on this topic in the business literature. That literature discusses the substantial variation in the ways corporations learn (such as the routines and forms of organizational structure they use).⁸⁴ The empirical and theoretical work on organizational learning rests on bounded rationality and offers several insights about how firms engage in different forms of intra-firm conduct to overcome their bounded rationality and to compete more effectively with other firms.⁸⁵ Among the literature’s

⁸⁴ Lovallo & Sibony, *supra* note 6, at 3 (noting recent survey of 2,207 executives where only 28 percent said the quality of their companies’ strategic decisions was generally good, 60 percent thought that bad decisions were about as frequent as good ones, and 12 percent thought good decisions were altogether infrequent).

⁸⁵ See Linda Argote & Henrich R. Greve, *A Behavioral Theory of the Firm – 40 Years and Counting: Introduction and Impact*, 18 *ORG. SCI.* 337 (2007) (surveying impact of *Behavioral Theory of the Firm’s* impact on organizational science research, including institutional theory and population ecology); Giovanni Dosi & Luigi Marengo, *On the Evolutionary and Behavioral Theories of Organizations: A Tentative Roadmap*, 18 *ORG. SCI.* 491 (2007).

insights:

- firms that better implement and update their learning (such as through routines) can better collect and exploit their knowledge, yield greater productive efficiencies, and enjoy a competitive advantage;⁸⁶
- firms may improve feedback mechanisms, whereby employees can learn from their mistakes and improve their reasoning and willpower;⁸⁷
- firms can promote different social, ethical and moral values that affect firm behavior⁸⁸ and therefore reduce their monitoring costs and increase their competitiveness by inculcating a unique identity.⁸⁹

Neoclassical economic theory, with its assumption of rational agents, offers few insights on such intra-firm behavior. Logically, if firms behaved as rational profit-maximizers, one would not expect this form of competition. Rational firms could not enjoy a competitive advantage in how they search and incorporate knowledge, since they all automatically search for and act upon the optimal amount of information. One would

⁸⁶ See Argote & Greve, *supra* note 85, at 343.

⁸⁷ John A. List, *Neoclassical Theory Versus Prospect Theory: Evidence from the Marketplace*, 72 *ECONOMETRICA* 615, 615 (2004); John A. List, *Does Market Experience Eliminate Market Anomalies?*, 118 *Q. J. ECON.* 41 (2003). For example, frequent and more experienced sports cards traders display less of an endowment effect for sports cards (such as baseball trading cards) than for other items such as chocolates and mugs.

⁸⁸ Paul C. Nystrom, *Differences in Moral Values between Corporations*, 9 *J. BUS. ETHICS* 971, 974 (1990) (survey of how closely-matched corporations within industrial sectors differed significantly in the perceived importance of the management's moral values).

⁸⁹ GEORGE A. AKERLOF & RACHEL E. KRANTON, *IDENTITY ECONOMICS: HOW OUR IDENTITIES SHAPE OUR WORK, WAGES, AND WELLBEING* 39-59 (2010) (exploring how workers can abide to shared corporate norms, and lose utility when they put in low effort, and how job-holders, if they have only monetary rewards and only economic goals, "will game the system insofar as they can get away with it").

therefore not expect business executives to expend resources on improving their decision processes if they indeed behaved as rational profit-maximizers. Moreover, one would expect rational choice theory to dominate the MBA curricula. Instead the strategic management texts, one survey found, provide “precious little support” for the Chicago School’s theory of the firm.⁹⁰

3. No Unifying Theory

A third criticism is that behavioral economics, while identifying the predictive shortcomings of neoclassical economic theory, does not provide an alternative unifying theory to explain human or firm behavior.⁹¹ But this criticism misconstrues the purpose of behavioral economics. Neoclassical economic theory has supplied an organizing principle, as well as an important level of nuance by importing new microeconomic thinking into competition law. The purpose of behavioral economics is to augment neoclassical economic theory by providing more realistic assumptions of human behavior. By teaching that humans may behave “predictably irrationally,”⁹² behavioral economics provides a mechanism for policymakers to consider whether and to what extent they should refine existing frameworks to account for nuances in human behavior.

Behavioral economics does not necessarily call for less or more antitrust regulation. If anything, it draws into question our reliance on economic theory when the evidence suggest otherwise. It calls into question our preoccupation with the cost of false positives (which has taken

⁹⁰ Norman W. Hawker, *Antitrust Insights from Strategic Management*, 47 N.Y.L. SCH. L. REV. 67, 74 (2003).

⁹¹ Posner, *supra* note 66, at 1559–60; *cf.* Mark Kelman, *Behavioral Economics as Part of a Rhetorical Duet: A Response to Jolls, Sunstein, and Thaler*, 50 STAN. L. REV. 1577, 1586 (1998) (noting how behavioral economics “can better be seen as a series of particular counterstories, formed largely in parasitic reaction to the unduly self-confident predictions of rational choice theorists, than as an alternative general theory of human behavior”).

⁹² ARIELY, *supra* note 10.

prominence over the thirty years) while not attending to the cost of false negatives. And, as discussed *infra*, it raises questions about our ability to predict outcomes and optimize efficiency through antitrust's rule-of-reason standard, suggesting that antitrust's prevailing legal standard be brought closer to rule-of-law principles.

4. Rule-of-Law Concerns

Another criticism is that even if neoclassical economic analysis does not indicate the correct result in every case, it has promoted greater predictability and consistency in antitrust analysis.⁹³ Thus the fear is that behavioral economics will increase the range of outcomes reached in an antitrust case, and thus inject more unpredictability into competition law.

We are sensitive to this concern. Antitrust law must comport as much as feasible with rule-of-law principles. Possible civil or criminal liability should not depend on the latest economic theory. Neoclassical economic theory has provided a basis for evaluating antitrust cases, and in some cases, simply-stated legal norms. Moreover, while economic theory has many dialects, it can provide a common language for competition authorities across the globe.

But neoclassical economic theory has its imperfections. First, as discussed *infra*, neoclassical theory, because of its dependence on a flawed assumption of rationality, provides an incomplete, and at times incorrect, account of competition. Antitrust legal standards that rely on neoclassical theory can lead to high error costs, thereby undercutting the goals of competition law. Through a more persuasive and complex theory of rationality, behavioral economics can provide a superior account of competition, can lead to more empirically-based presumptions in antitrust's legal standards, and can result in more informed antitrust enforcement.

⁹³ Douglas H. Ginsburg & Derek W. Moore, *The Future of Behavioral Economics in Antitrust Jurisprudence*, 6 COMPETITION POL'Y INT'L 89, 92 (Spring 2010).

Second, it is debatable whether neoclassical economic theory's reliance on the rule-of-reason, has provided the desired level of administrability, consistency, objectivity, and transparency to antitrust.⁹⁴ The Supreme Court's current rule-of-reason standard provides little predictability to market participants, and, in combination with class action mechanisms, subjects litigants and trial courts to the purgatory of "sprawling, costly, and hugely time consuming" discovery.⁹⁵ The Court's alternative per se standard is also unsatisfactory for evaluating many ordinary competitive restraints: the risk of false positives counsels against expanding rules of per se illegality, while the risk of false negatives counsels against expanding predictability through rules of per se legality.

As Justice Breyer observed in *Leegin*, "antitrust law cannot, and should not precisely replicate economists' (sometimes conflicting) views."⁹⁶ Instead, for legal standards in the antitrust context to serve their goals of prohibiting anticompetitive conduct while not sweeping in procompetitive conduct, they must be as precise as possible. The insights from behavioral economics can facilitate that end by providing agencies, courts, and legislatures with an additional lens through which to understand the facts before them. In some contexts, courts will conclude that the rule of reason is the best option. But, it may also mean that in other contexts, lawmakers will take all of the available empirical economic evidence and create legally rebuttable presumptions.⁹⁷ As we discuss *infra*, behavioral economics can play an important role in that endeavor by explaining how actual real-world

⁹⁴ Maurice E. Stucke, *Does the Rule of Reason Violate the Rule of Law?*, 42 U.C. DAVIS L. REV. 1375 (2009).

⁹⁵ *Twombly*, 127 S. Ct. at 1967 n.6.

⁹⁶ *Leegin Creative Leather Products v. PSKS, Inc.*, 551 U.S. 887, 914-15 (2007) (Breyer, J., dissenting).

⁹⁷ Arndt Christiansen & Wolfgang Kerber, *Competition Policy with Optimally Differentiated Rules Instead of "Per se Rules vs. Rule of Reason,"* 2 J. COMPETITION L. & ECON. 215, 219 (2006); Alfred E. Kahn, *Standards for Antitrust Policy*, 67 HARV. L. REV. 28, 41 (1953).

evidence that contradicts (or is unexplainable under) a neoclassical economic theory may nevertheless be insightful in understanding whether conduct is pro- or anti-competitive.

II. THE PERSISTENCE OF RATIONAL CHOICE THEORY IN ANTITRUST LAW

Although behavioral economics, as Part I discusses, has become a growth stock, this Part discusses how the assumption of rational, self-interested profit-maximizers became and remains embedded in antitrust policy.

A. *The Chicago School's Assumption of Rationality*

When Congress enacted the federal antitrust laws, it neither endorsed the assumption of a rational profit-maximizer, nor dictated the application of any particular economic theory.⁹⁸ Congress instead sought to strike a balance between (a) providing the courts with sufficient latitude to shape those laws over time and (b) not giving the courts unfettered discretion to interpret the antitrust laws so as to advance a particular judge's ideology.⁹⁹

For several decades, the Supreme Court utilized a variety of economic organizing principles in its antitrust jurisprudence.¹⁰⁰ Broadly speaking,

⁹⁸ George J. Stigler, *The Economists and the Problem of Monopoly*, 72 AM. ECON. REV. 1, 3 (1982) (noting that a "careful student of the history of economics would have searched long and on hard . . . the day the Sherman Act was signed . . . for any economist who had ever recommended the policy of actively combating collusion or monopolization in the economy at large"); Herbert Hovenkamp, *Antitrust Policy After Chicago*, 84 MICH. L. REV. 213, 249-50 (1985) ("legislative histories of the various antitrust laws fail to exhibit anything resembling a dominant concern for economic efficiency").

⁹⁹ See *State Oil v. Khan*, 522 U.S. 3, 20-21 (1997) (noting that Congress "expected the courts to give shape to the statute's broad mandate by drawing on common law tradition") (internal citations omitted); *Bus. Elecs. Corp. v. Sharp Elecs. Co.*, 485 U.S. 717, 732 (1988) ("The Sherman Act . . . invokes the common law itself and not merely the static content that the common law assigned that term in 1890."); *Nat'l Soc'y of Prof'l Eng'rs v. United States*, 435 U.S. 679, 688 (1978) ("The legislative history makes it perfectly clear that it expected the courts to give shape to the statute's broad mandate by drawing on common-law tradition."); *Apex Hosiery Co. v. Leader*, 310 U.S. 469, 489 (1940) (noting that the "vagueness of [the Sherman Act's] language" left it to the courts to give "content to the statute").

¹⁰⁰ HERBERT HOVENKAMP, *ENTERPRISE AND AMERICAN LAW: 1836-1937* 268 (1990) ("One of the great myths about American antitrust policy is that courts began to adopt an

however, in the 30-year period that preceded the Chicago School's inception, the Court sought four aims.¹⁰¹

First, the Court generally (but not always) sought a rule that was administrable for generalist judges.¹⁰² With some notable exceptions, the Court turned to the Sherman Act's legislative history or common law precedent as a basis for its rules.¹⁰³

Second, the Court sought legal rules to enhance predictability. For example, in devising the thirty percent presumption for mergers, the Court sought to foster business autonomy: unless business executives "can assess the legal consequences of a merger with some confidence, sound business planning is retarded."¹⁰⁴ The Court's role was to provide clearer rules on what was civilly (and criminally) illegal under the Sherman Act.

Third, the Court sought to prevent the lower courts from being bogged down in difficult economic problems, such as trade-offs between inter- and intra-brand competition.¹⁰⁵ Neither the courts nor litigants could weigh the reduction of competition in one area (such as intra-brand competition for Topco private-label products among Topco member supermarkets) versus greater competition in another area (such as inter-brand competition between Topco members' private-label products and the major supermarkets' private-label goods).¹⁰⁶

'economic approach to antitrust problems only in the 1970's. At most, this 'evolution' in antitrust policy represented a change in economic models. Antitrust policy has been forged by economic ideology since its inception."); see also William E. Kovacic & Carl Shapiro, *Antitrust Policy: A Century of Economic and Legal Thinking*, 14 J. ECON. PERSP. 43 (2000) (surveying the role of economics in antitrust since the Sherman Act's inception).

¹⁰¹ Stucke, *Rule of Reason*, *supra* note 94, at 1401-06.

¹⁰² *Phila. Nat'l Bank*, 374 U.S. at 362 ("in any case in which it is possible, without doing violence to the congressional objective embodied in . . . [the statute], to simplify the test of illegality, the courts ought to do so in the interest of sound and practical judicial administration").

¹⁰³ Stucke, *Rule of Reason*, *supra* note 94, at 1402-03.

¹⁰⁴ *Phila. Nat'l Bank*, 374 U.S. at 362.

¹⁰⁵ Stucke, *Rule of Reason*, *supra* note 94, at 1404-05.

¹⁰⁶ *United States v. Topco Assoc., Inc.*, 405 U.S. 596 (1972).

Fourth, not only was this weighing beyond its competence, the Court recognized that the legislature, while subject to rent-seeking, was more politically accountable than the judiciary; so Congress must make these normative trade-offs.¹⁰⁷

The Court's implementation of these principles resulted in a period of unprecedented victories for antitrust enforcement. In the collusion context, the Court used per se tests to condemn a broad range of conduct including tying arrangements that conditioned the sale of one product upon the buyer's agreement to purchase a second product,¹⁰⁸ non-price vertical restraints through which a manufacturer limited its resalers to specific geographic areas,¹⁰⁹ and the adoption of exclusive sales territories by marketing joint ventures.¹¹⁰ In the merger context, in its 1963 decision in *Philadelphia National Bank*, the Court aimed for a presumption consistent with the Congressional concerns in the 1950 Clayton Act amendments to deal with the rising tide of economic concentration in the American economy. The Court sought a presumptively anticompetitive post-merger market share that was based on figures in its earlier Clayton Act contract-integration cases that was also consistent with prevailing scholarly opinion.¹¹¹ The Court also, however, placed horizontal mergers creating market shares below 10 percent in question.¹¹²

As scholars have noted, “[t]here was considerable consistency between judicial decisions and economic thinking during the 1940s, 1950s, and

¹⁰⁷ Stucke, *Rule of Reason*, *supra* note 94, at 1405-6.

¹⁰⁸ *N. Pac. Ry. Co. v. United States*, 356 U.S. 1 (1958).

¹⁰⁹ *United States v. Arnold, Schwinn & Co.*, 388 U.S. 365 (1967).

¹¹⁰ *Topco*, 405 U.S. 596.

¹¹¹ *Id.* at 365-66.

¹¹² *United States v. Von's Grocery Co.*, 384 U.S. 270 (1966) (enjoining a merger between two Los Angeles grocery chains with no more than 7.5 percent of retail sales); *United States v. Pabst Brewing Co.*, 384 U.S. 546, 552 (1966) (blocking a merger between two brewing firms that together accounted for 24 percent of beer sales in Wisconsin, 11 percent of sales in a three-state area of the upper Midwest, and less than 5 percent of sales nationally, holding that the Clayton Act was violated “in each and all of these three areas”).

1960s.”¹¹³ But that consistency did not, in the eyes of the Court’s critics, provide the doctrinal certitude that antitrust law required. Beginning in the mid-1970s, the Chicago School’s neoclassical economic theories began to serve that role.¹¹⁴

Although the “basic features of the Chicago [S]chool of antitrust analysis are attributable to the work of Aaron Director in the 1950s,”¹¹⁵ Robert Bork’s *Antitrust Paradox*¹¹⁶ is widely considered to have laid the foundation for the Chicago School’s incorporation into federal antitrust law. Judge Bork argued that contrary to early thinking, the Sherman Act’s legislative history “displays the clear and exclusive policy intention of promoting consumer welfare,” a term which Bork gave a different meaning than others.¹¹⁷ As the Chicago School recognized, defining the goal of antitrust is paramount. This is because “[e]verything else follows from the answer we give.”¹¹⁸ So to make the rule of reason “more manageable,” the Chicago School adopted the position “that the essential spirit of the Rule is to condemn only those practices that are, on balance, inefficient in the economic sense.”¹¹⁹

The Chicago School next elevated the importance of the rationality assumption. Although Posner once said that the “basic tenet of the Chicago

¹¹³ See Kovacic & Shapiro, *supra* note **Error! Bookmark not defined.**, at 52.

¹¹⁴ For a detailed discussion of the rise of the Chicago School, see Kovacic & Shapiro, *supra* note **Error! Bookmark not defined.**, at 52-55; Stucke, *Behavioral*, *supra* note 62, at 537-44.

¹¹⁵ Richard A. Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925 (1979); see generally Aaron Director & Edward H. Levi, *Law and the Future: Trade Regulation*, 51 NW. U. L. REV. 281 (1956).

¹¹⁶ BORK, *supra* note 3.

¹¹⁷ *Id.* at 61 (arguing that the overriding policy goal behind Sherman Act is consumer welfare and that Congress intended to accomplish that end by protecting economic efficiency). Bork’s interpretation was so roundly discredited that some have called for a halt of its bashing. See Daniel R. Ernst, *The New Antitrust History*, 35 N.Y.L. SCH. L. REV. 879, 882 (1990).

¹¹⁸ BORK, *supra* note 3, at 50.

¹¹⁹ Richard A. Posner, *The Rule of Reason and the Economic Approach: Reflections on the Sylvania Decision*, 45 U. CHI. L. REV. 1, 16 (1977).

school” is that “problems of competition and monopoly should be analyzed using the tools of general economic theory,”¹²⁰ economists disagree on what those tools are. So the Chicago School differentiated itself by starting “from the strong assumption that market participants are rational profit maximizers.”¹²¹ Adopting this presumption allowed Chicago School theorists to more easily predict how rational profit-maximizers should act.

A key component in the Chicago School’s thinking is not that rational decision-making leads to perfect decision-making, but that markets are self-correcting and will counteract faulty decision-making. Except for the rare cases of price-fixing, mergers to monopoly, or other sustained market failures,¹²² government intervention is often seen as unnecessary and harmful. The Chicago School’s theories do not treat *firm* behavior any differently from *individuals’ collective* behavior.

As Posner, Federal Trade Commissioner William Kovacic, and others have noted, it is inaccurate to say that the emphasis modern federal antitrust law has placed on neoclassical economics is solely attributable to the Chicago School.¹²³ Nevertheless, whether characterized as Chicago, post-Chicago,¹²⁴ or Harvard¹²⁵ School theory, antitrust’s economic theories for

¹²⁰ *Id.* at 933-34.

¹²¹ Posner, *supra* note 115, at 933-34 (explaining that neoclassical theories rely on the “basic tenet” that “problems of competition and monopoly should be analyzed using the tools of general economic theory,” including, chiefly, the core theoretical assumption that individuals are perfectly rational, profit-maximizing decision makers); *see also* AREEDA & HOVENKAMP, *supra* note 4, at 137 (“Business firms are (or must be assumed to be) profit maximizers”).

¹²² Posner, *supra* note 115, at 933.

¹²³ Kovacic, *supra* note 5, at 109; Posner, *supra* note 115, at 931 (concluding that, because of the convergence between the Harvard and Chicago Schools’ thinking, “it is no longer worth talking about different schools of academic antitrust analysis”); *see also* Daniel A. Crane, *Chicago, Post-Chicago, and Neo-Chicago*, 76 U. CHI. L. REV. 1911, 1918-20 (2009) (discussing overlap among Chicago, post-Chicago, and Harvard Schools).

¹²⁴ The post-Chicago approach, which uses game theory to examine ways in which established firms behave strategically in comparison to actual and potential rivals, has supplied a well-developed body of literature that highlights a broader view of predatory pricing and predatory and exclusionary behavior more generally. Under the post-Chicago

the past thirty years have largely assumed rational profit-maximizing market participants with willpower.

B. How the Rationality, Profit Maximization, and Efficiency Assumptions Permeate Modern Federal Antitrust Law

As a result of the Chicago School's "powerful simplifications," such as "rationality, profit maximization, the downward sloping demand curve"¹²⁶ neoclassical economic principles now underlie much of modern federal antitrust law and pervade the doctrinal analysis that governs Section 1 and 2 of the Sherman Act as well as merger review.

In the Section 1 context, which involves unreasonable restraints of trade, the Chicago School's rational choice theories played a central role in the Supreme Court's shift from its *per se* to its rule-of-reason standard.¹²⁷ In *Continental T.V., Inc. v. GTE Sylvania*,¹²⁸ the Court overturned *United States v. Arnold, Schwinn & Co.*,¹²⁹ and held that non-price vertical restraints were subject to the rule of reason. Then in *State Oil Co. v. Khan*,¹³⁰ the Court discarded its *per se* ban on maximum resale price maintenance agreements. Citing Posner's Seventh Circuit decision, Bork's

School work, firms with substantial market power can engage in exclusionary conduct by raising their rivals' cost. *See, e.g.*, Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price*, 96 YALE L. J. 209 (1986).

¹²⁵ Kovacic, *supra* note 123, at 170 (noting that Harvard School, through the contributions of Donald Turner, Phillip Areeda, and Justice Stephen Breyer, "had as much to do as Chicago with creating many of the widely-observed presumptions and precautions that disfavor intervention by U.S. courts and enforcement agencies"); *see also* Einer Elhauge, *Harvard Not Chicago: Which Antitrust School Drives Recent Supreme Court Decisions?*, 3 COMP. POL'Y INT'L 2, Autumn (2007).

¹²⁶ Posner, *supra* note 115, at 931.

¹²⁷ Joshua D. Wright, *Overshot the Mark? A Simple Explanation of the Chicago School's Influence on Antitrust*, GCP (Global Competition Policy) MAG. 7, Apr. 15, 2009 ("Perhaps the Chicago School's most important and visible victory has been the assault on the *per se* rule of illegality, which, at least for now, exists only in naked price-fixing cases and, in a weakened form, in tying cases.").

¹²⁸ 433 U.S. 36 (1977).

¹²⁹ 388 U.S. 365 (1967).

¹³⁰ 522 U.S. 3 (1997).

Antitrust Paradox, and Areeda and Hovenkamp's treatise,¹³¹ the Court reasoned that a per se rule was inappropriate where "a considerable body of scholarship" suggested maximum resale price maintenance agreements were procompetitive and provided "insufficient economic justification for per se invalidation" of those agreements.¹³² More recently, in *Leegin Creative Leather Products v. PSKS, Inc.*,¹³³ the Court overruled its nearly century-old per se rule against vertical minimum price-fixing.¹³⁴ The Court again turned to the thinking of the Harvard and Chicago Schools and cited as authority an amicus brief by several economists to support the proposition that "authorities in the economics literature suggest the per se rule is inappropriate, and there is now widespread agreement that resale price maintenance can have procompetitive effects."¹³⁵

The departure from per se rules has its roots in the Chicago School's belief that the false negatives (and administrative costs) that result from the Court's rule-of-reason standard are far less significant than the false positives that follow from its per se rules. False negatives are not a concern if one strongly believes in self-correcting markets arising from self-interested rational market participants. Instead the greater concern is that government restraints (in the form of per se rules or legal presumptions of illegality) represent a greater threat to market efficiency.

Nevertheless, while embracing its rule-of-reason standard, the Court

¹³¹ P. AREEDA, *ANTITRUST LAW* (1989) & P. AREEDA & H. HOVENKAMP, *ANTITRUST LAW* (1988 Supp.).

¹³² 522 U.S. at 15, 18.

¹³³ *Leegin*, 551 U.S. 887.

¹³⁴ *Dr. Miles Medical Co. v. John D. Park & Sons Co.*, 220 U.S. 373 (1911).

¹³⁵ *Leegin*, 551 U.S. at 900 (citing Brief of Economists as Amici Curiae in Support of Petitioner, *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 127 S. Ct. 2705 (2007)). See also Elhauge, *supra* note 125 (arguing that, while the Chicago School would have advocated for a rule of per se legality in the context of vertical restraints, the Court's adoption of the rule of reason demonstrates that the Court followed the teachings of the Harvard School).

has, more recently, complained of antitrust's "interminable litigation,"¹³⁶ "inevitably costly and protracted discovery phase,"¹³⁷ the risk of "frivolous" suits,¹³⁸ and the "unusually" high risk of inconsistent results by antitrust courts.¹³⁹ So the current Court, like the earlier Warren and Burger Courts, lacks confidence in the judiciary's ability to examine difficult economic problems. But rather than provide more guidance for courts reviewing antitrust violations under Section 1, the Court now requires the lower courts to undertake a complex economic rule-of-reason analysis with relatively little concrete guidance.

Put differently, the importation of the neoclassical ideas in construing Section 1 has left the Court in an awkward position. On the one hand, the Court has relied on the Chicago School's organizing principles to introduce increased complexity in the law: if neoclassical economic theory suggests bright-line rules are prohibiting procompetitive conduct, the Court's response has been to expand the rule of reason. On the other hand, the Court has resorted to the Chicago School's principles as a justification for simplifying antitrust law by placing the upmost weight on administrability and predictability when creating bright-line rules that essentially immunize conduct deemed economically irrational.

The Court's construction of monopolization claims under Section 2 likewise has shifted as a result of the Chicago School's influence, particularly in the predatory pricing context where the Court has crafted liability rules that are premised on the assumption that firms behave rationally. Under neoclassical thinking, predation claims specifically and

¹³⁶ *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 414 (2004).

¹³⁷ *Twombly*, 127 S. Ct. at 1966, 1967 n.6 (quoting *Asahi Glass Co. v. Pentech Pharm., Inc.*, 289 F. Supp. 2d 986, 995 (N.D. Ill. 2003)).

¹³⁸ *Leegin*, 551 U.S. at 895.

¹³⁹ *Credit Suisse Sec. (USA) LLC v. Billing*, 127 S. Ct. 2383, 2395 (2007).

attempted monopolization claims generally are highly unusual in the presence of low entry barriers and rational market participants. For any attempted monopolization claim, plaintiffs must demonstrate that entry barriers in the relevant market are “significant” and “substantial” enough to confer monopoly power.¹⁴⁰ Notwithstanding the firm’s intent to monopolize a market and its anticompetitive conduct, the court could find that rational profit-maximizing entrants will materialize and rescue the consumer. Similarly no rational firm would engage in predation given the difficulty of recouping its losses.¹⁴¹ This reasoning led Frank Easterbrook in 1981 to opine that “there is no sufficient reason for antitrust law or the courts to take predation seriously.”¹⁴² This view has largely carried the day at the Supreme Court.¹⁴³

In *Matsushita Electric Indus. Co. v. Zenith Radio Corp.*,¹⁴⁴ for example, the Court observed a “consensus among” Chicago School “commentators that predatory pricing schemes are rarely tried, and even more rarely successful.” The Court adopted Bork’s view in *The Antitrust Paradox* that “[a]ny agreement to price below the competitive level requires the conspirators to forgo profits that free competition would offer them,” and, as such, “[f]or the investment to be rational, the conspirators must have a reasonable expectation of recovering, in the form of later monopoly profits, more than the losses suffered.”¹⁴⁵

¹⁴⁰ *United States v. Microsoft Corp.*, 253 F.3d 34, 81, 82 (D.C. Cir. 2001).

¹⁴¹ *See, e.g.*, BORK, *supra* note 3, at 145 (“Any realistic theory of predation recognizes that the predator as well as his victims will incur losses during the fighting, but such a theory supposes it may be a rational calculation for the predator to view the losses as an investment in future monopoly profits (where rivals are to be killed) or in future undisturbed profits (where rivals are to be disciplined).”); *see also* Frank H. Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 263, 268 (1981).

¹⁴² *Id.* at 264.

¹⁴³ Leslie, *supra* note 33, at 289-91.

¹⁴⁴ 475 U.S. 574 (1986).

¹⁴⁵ *Matsushita*, 475 U.S. at 588-89 (citing R. BORK, *THE ANTITRUST PARADOX* 145 (1978)).

Likewise, in *Brooke Group Ltd. v. Brown & Williamson Tobacco Corporation*¹⁴⁶ (which Bork successfully argued), the Court relied on *Matsushita* and the writings of various prominent Harvard and Chicago School scholars to declare that conduct will not amount to predatory pricing unless (1) the alleged scheme involved pricing below some measure of cost and (2) the predator had a rational prospect of recouping its losses from such below-cost predation.¹⁴⁷ Consistent with the wealth-maximizing assumptions that underlie both schools of thought, the Court observed that “[r]ecoupment is the ultimate object of an unlawful predatory pricing scheme.”¹⁴⁸ Most recently in *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co., Inc.*,¹⁴⁹ the Court applied its *Brooke Group* test to claims of predatory bidding. “Without such a reasonable expectation” of recoupment, the Court wrote, “a rational firm would not willingly suffer definite, short-run losses.”¹⁵⁰ Given the risks in recoupment, a “rational business will rarely make this sacrifice.”¹⁵¹

But the Court’s reliance on rational choice theory in *Brooke Group* and *Weyerhaeuser* is inconsistent with its recoupment requirement. The Court’s premise is that firms are rational and self-interested. If true, firms ordinarily would price their products at or above their marginal cost. Rational firms, Bork believed, would rarely if ever incur the substantial losses in pricing below marginal cost, unless they believed that the future supra-competitive profits, appropriately discounted, would exceed the immediate losses.¹⁵² So if rational profit-maximizing firms were pricing below marginal cost, this reveals their reasonable expectation of

¹⁴⁶ 509 U.S. 209 (1993).

¹⁴⁷ *Brooke Group*, 509 U.S. at 224.

¹⁴⁸ *Id.*

¹⁴⁹ 549 U.S. 312 (2007).

¹⁵⁰ *Weyerhaeuser*, 549 U.S. at 319.

¹⁵¹ *Id.* at 323.

¹⁵² BORK, *supra* note 3, at 145.

recoupment. Under rational choice theory, the antitrust plaintiff should recover simply by proving that defendant's prices were below marginal cost.¹⁵³ But the Court requires antitrust plaintiffs to separately prove a reasonable expectation of recoupment. This second element provides antitrust defendants another opportunity to avoid liability. Even if pricing below marginal cost, defendant could argue that entry barriers are sufficiently low, so that rational profit-maximizers would defeat any attempted exercise of market power. If true, defendant, under rational choice theory, should not have priced below marginal cost in the first place. Although the Court has not adopted the Chicago School's view of per se legality for predatory pricing,¹⁵⁴ its rule essentially immunizes conduct deemed economically irrational.¹⁵⁵

Apart from the Sherman Act, the neoclassical economic theories' rationality assumption has influenced U.S. merger law. Some described the 1982 Merger Guidelines as "a product of the new economic orientation in

¹⁵³ One could argue that imposing the second element of recoupment serves to minimize the costs of false positives from the first element, namely the court's attempt in determining the product's "appropriate measure of cost." But if this were driving the Court's concern, then it would have specified what constitutes the appropriate measure of cost (such as average variable cost) which raises its own issues. See Russell Pittman, *Who Are You Calling Irrational? Marginal Costs, Variable Costs, and the Pricing Practices of Firms*, Economic Analysis Group Discussion Paper 09-3 (July 2009), available at <http://www.justice.gov/atr/public/eag/248394a.htm>.

¹⁵⁴ See Herbert Hovenkamp, *The Harvard and Chicago Schools and the Dominant Firm in HOW THE CHICAGO SCHOOL OVERSHOT THE MARK* 109, 110 (Robert Pitofsky ed. 2009) (characterizing *Brooke Group* as a victory for the Harvard School because the Court adopted the view that predatory pricing could be illegal provided there was an opportunity for recoupment).

¹⁵⁵ The Tenth Circuit noted in the government's most recent predatory pricing case, "[r]ecent scholarship has challenged the notion that predatory pricing schemes are implausible and irrational." *United States v. AMR Corp.*, 335 F.3d 1109, 1114–15 (10th Cir. 2003) (citing Patrick Bolton et al., *Predatory Pricing: Strategic Theory and Legal Policy*, 88 *GEO L.J.* 2239, 2241 (2000) ("[M]odern economic analysis has developed coherent theories of predation that contravene earlier economic writing claiming that predatory pricing conduct is irrational.")). The Tenth Circuit, while approaching the DOJ's predatory pricing claims "with caution," did "not do so with the incredulity that once prevailed." *AMR Corp.*, 335 F.3d at 1115. The DOJ still lost, however. *Id.* at 1120–21.

antitrust law, if not an outright product of Chicago School economic theories.”¹⁵⁶ These principles can be seen in two respects.

First, in response to critiques by Bork and others from the Chicago and Harvard Schools that the Structure-Conduct-Performance paradigm prohibited mergers among small firms that could generate efficiencies, the agencies allowed for a more fulsome consideration of efficiencies in the 1982 Guidelines.¹⁵⁷

Second, consistent with the Court’s decision in *General Dynamics*¹⁵⁸ the 1982 Guidelines embraced the neoclassical idea that, concentration ratios notwithstanding, a firm’s market share may not accurately reflect the firm’s long-term competitive viability. Thus, the Herfindahl-Hirschman Index (HHI) serves to reduce the risk of false positives by creating what are generally viewed as “safe harbors.” If a merger’s HHI (a measure of the industry concentration that will result from the merger)¹⁵⁹ falls within those safe harbors, the merger is typically not challenged. On the other hand, high market shares post-merger in highly concentrated industries are insufficient. The antitrust agencies must still prove a compelling

¹⁵⁶ Herbert Hovenkamp, *Merger Actions for Damages*, 35 HASTINGS L.J. 937, 947 n.43 (1984); see also Eleanor M. Fox, *Introduction: The 1982 Merger Guidelines: When Economists are Kings?* 71 CAL. L. REV. 281 (1983) (stating that the 1982 Merger Guidelines represent “a new positivism; a reduction of legal principles to a simple, unitary, quasi-scientific, outcome-oriented economic model that, in a generalized sense, has been offered as the model for solving all antitrust problems. By embodying only one substantive goal – allocative efficiency – the model offers the appearance of clarity, predictability, and reduced government intervention”).

¹⁵⁷ See BORK, *supra* note 3, at 217. During his tenure as Assistant Attorney General, Donald Turner of the Harvard School asked Oliver Williamson to study the issue which resulted in a paper showing the economic irrationality of merger policy that did not take efficiencies into account. Oliver E. Williamson, *Economies as an Antitrust Defense: The Welfare Tradeoffs*, 58 AM. ECON. REV. 18 (1969). Williamson’s paper, in turn, led to the inclusion of a narrow efficiencies defense in the first Merger Guidelines which the 1982 Merger Guidelines revisions more fully embraced and expanded on.

¹⁵⁸ *United States v. General Dynamics Corp.*, 415 U.S. 486 (1974).

¹⁵⁹ HHIs are derived by summing the squares of each competitor’s market share. The first important variable is the industry’s HHI post-merger. The second important variable is the change in HHI, namely the number of points, by which the merger increases the market’s HHI. Horizontal Merger Guidelines, *supra* note 32, at §6.3.

competitive effects story (namely how this merger significantly increases the risk of coordinated or unilateral anticompetitive effects), and why the exercise of market power won't be squelched by the entry (or expansion) of rational profit-maximizing firms.

In short, since the Chicago School's ascendance in the mid 1970s, antitrust law has embraced neoclassical principles at every turn. While these principles may have been motivated by the desire to increase predictability (and, in turn, fewer false positives), it is not altogether clear that the neoclassical antitrust theories led to those results. In some cases, the desire to subject conduct to a rule-of-reason framework so as not to prohibit procompetitive conduct decreased predictability. As discussed below, the behavioral economics literature provides insights into ways to further sharpen antitrust rules to result in fewer false positives *and* false negatives over the long run.

III. HOW CAN BEHAVIORAL ECONOMICS INFORM ANTITRUST POLICIES?

As the survey in Part II suggests, neoclassical economic theory now covers the landscape in federal antitrust law. When the antitrust agencies and federal courts analyze anticompetitive conduct or evaluate a proposed or consummated merger, they generally apply certain assumptions about firm and individual behavior, including: (i) markets characterized with low entry barriers do not pose antitrust concerns; these markets are not susceptible to the prolonged exercise of market power because rational profit-maximizers will enter; (ii) many mergers generate significant efficiencies; (iii) rational big buyers often thwart the exercise of market power; and (iv) general deterrence of cartels is achievable under optimal deterrence theory.

These assumptions – which are based on the tenets of neoclassical economic theory of plausible behavior – can and do have outcome-determinative effects. Federal courts regularly grant defendants' summary

judgment motions if plaintiffs' antitrust claims do not make "economic sense," such as alleging economically irrational (non-profit-maximizing) behavior.¹⁶⁰ Now *Twombly* has opened the door for defendants at the pleading stage to argue that plaintiffs' antitrust claims are economically implausible.¹⁶¹ Similarly, "[c]urrent U.S. merger enforcement policy," reported the Antitrust Modernization Commission, "is premised on assumptions about how concentration and other market characteristics (such as ease of entry) affect competition and market power."¹⁶² The problem the AMC identified is that the "[e]mpirical evidence gives only limited support for these assumptions."¹⁶³ As one former antitrust official observed, the agencies' "merger review process is applied sparingly" as the "vast majority of transactions" (approximately 97 percent) "are cleared within the initial waiting period."¹⁶⁴

This is all to say that assumptions play a critical role in winnowing the types of conduct that go to discovery and/or trial as well as the number of mergers that the antitrust agencies actually review as potentially anti-competitive. If the assumptions are infirm, then conceivably some of the conduct that is exonerated and the mergers that are not reviewed may be anticompetitive.

¹⁶⁰ Leslie, *supra* note 33, at 272 (noting plaintiff's two-step rationality burden); *see also* Eastman Kodak Co. v. Image Tech. Servs., Inc., 504 U.S. 451, 467 (1992) (summary judgment is appropriate where antitrust claim "simply makes no economic sense") (citing Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 587, 594 n.19, 596-97 (1986)); *In re Brand Name Prescription Drugs Antitrust Litig.*, 123 F.3d 599, 614 (7th Cir. 1997) (Posner, J.) (arguing that summary judgment for defendants is proper even if there is some evidence of an antitrust violation, if plaintiff's theory makes no economic sense).

¹⁶¹ Bell Atl. Corp. v. Twombly, 550 U.S. 544 (2007).

¹⁶² ANTITRUST MODERNIZATION COMMISSION, REPORT AND RECOMMENDATIONS 61-62 (April 2007), *available at* http://govinfo.library.unt.edu/amc/report_recommendation/amc_final_report.pdf

¹⁶³ *Id.* at 62.

¹⁶⁴ Thomas O. Barnett, Assistant Attorney General, Antitrust Division, U.S. Department of Justice, Merger Review: A Quest for Efficiency (Jan. 25, 2007), <http://www.justice.gov/atr/public/speeches/221173.htm>.

A. *Assumption that Rational Profit-maximizers Will Defeat the Exercise of Market Power in Markets Characterized with Low Entry Barriers*

Neoclassical antitrust analysis treats the potential for entry as significant – if not sometimes dispositive – in determining whether the existing market participants will exercise market power. The analysis assumes that markets characterized with low entry barriers are not susceptible to the prolonged exercise of market power because (1) supra-competitive prices will attract rational profit-maximizing firms, (2) these new entrants will replenish the lost output, and (3) as a result of entry, prices will return closer to marginal cost.

With the exception of criminal prosecutions of cartels,¹⁶⁵ this assumption pervades the Sherman Act case law. In the Section 1 context, courts have observed that the absence of entry barriers means a predatory pricing conspiracy is implausible. In *Matsushita*, plaintiffs argued that they had adduced facts to show a plausible conspiracy to engage in predatory pricing. The Supreme Court, however, observed that the antitrust plaintiffs “offer no reason to suppose that entry into the relevant market is especially difficult, yet without barriers to entry it would presumably be impossible to maintain supracompetitive prices for an extended time.”¹⁶⁶

Likewise, in the Section 2 context, for Bork and others, monopolies (other than those protected by the government) are short-term phenomena: the innovator’s supra-competitive profits serve as bait for imitators, who “first reduce and then annihilate [the monopolist’s] profit,” which reverts to the competitive mean.¹⁶⁷ Innovation attracts imitation, which leads to commoditization. Courts therefore will frequently analyze whether a firm

¹⁶⁵ One success by DOJ prosecutors is in preserving the Court’s per se rule on horizontal price-fixing, bid-rigging, market or customer allocations, or output reductions. If executives conspire to fix prices, they are liable even though entry barriers are low or such behavior is economically irrational.

¹⁶⁶ 475 U.S. at 591 n.15.

¹⁶⁷ JOSEPH A. SCHUMPETER, *THE THEORY OF ECONOMIC DEVELOPMENT* 89 (1934); BORK, *supra* note 3, at 195-97.

can attempt to monopolize, or monopolize, a market by examining the likelihood of entry.¹⁶⁸

Entry barriers are also a key factor under the Merger Guidelines. The federal antitrust agencies lost a series of merger challenges when courts found that easy entry would deter any anticompetitive effects.¹⁶⁹ The agencies thereafter adopted a more extensive entry provision in their Guidelines, which set forth what the agencies believe is required for entry to be “timely, likely, and sufficient to deter or counteract anticompetitive effects.”¹⁷⁰ Merger analysis for the agencies “generally entails a hypothetical analysis of entry.”¹⁷¹ In markets where entry theoretically would be timely (i.e., occurring in less than two years), likely, and sufficient in magnitude, character and scope to deter the exercise of market power, then the “merger is not likely to enhance market power.” For mergers subject to a Second Request between the years 1996 and 2003, the FTC stated that it took no enforcement action where its staff concluded that entry would be timely, likely, and sufficient under the Merger Guidelines criteria.¹⁷²

When the antitrust agencies believe that entry barriers are sufficiently

¹⁶⁸ See, e.g., *AD/SAT v. AP*, 181 F.3d 216, 229 (2d Cir. 1999) (affirming summary judgment for defendant on attempted monopolization claim and noting that the presence of “low barriers to market entry” suggested that the defendant would “face significant competition from new entrants”); *Bailey v. Allgas, Inc.*, 284 F.3d 1237 (11th Cir. 2002) (affirming summary judgment for defendant in Robinson Patman Act case where plaintiff failed to show the presence of entry barriers and noting that “the ease or difficulty of entry” is “[t]he most significant structural factor bearing on the ability to recoup predatory losses through inflated prices” because “[w]here a market has low barriers to entry, sellers charging supracompetitive prices will soon attract new competitors, sellers charging supracompetitive prices will soon attract new competitors”).

¹⁶⁹ AMC Report, *supra* note 162, at 71 n. 40.

¹⁷⁰ Horizontal Merger Guidelines, *supra* note 32, at § 9.0

¹⁷¹ Fed. Trade Comm’n, *Transparency at the Federal Trade Commission: The Horizontal Merger Review Process* 14 (2005), available at <http://www.ftc.gov/os/2005/02/0502economicissues.pdf>.

¹⁷² *Id.* at 78 (noting that of the 19 cases identified, 16 were in highly concentrated industries).

low to defeat the exercise of market power post-merger, there is typically no mechanism to minimize the risk of false negatives. Private parties and the state attorneys general infrequently challenge mergers.¹⁷³ On the other hand, if the agencies believe that entry barriers are sufficiently high to enable the exercise of market power, mechanisms exist to reduce the risk of false positives. The merging parties can seek to persuade a generalist court (which is less familiar about these antitrust issues than the agencies) that a hypothetical rational entrant would defeat the exercise of market power. The Section 7 case law is consistent with this approach: the merging parties can use evidence of low entry barriers to successfully rebut any presumption of anticompetitive harm. “In the absence of significant barriers,” the courts assume, “a company probably cannot maintain supracompetitive pricing for any length of time.”¹⁷⁴

The problem is that our understanding regarding the impact of ease of entry on competition is, as the AMC found, “limited.”¹⁷⁵ The behavioral literature identifies two market-entry error types: (1) excess entry (i.e., entry that fails because it is economically irrational), and (2) sparse entry (i.e., entry that should but does not occur because a firm exhibits

¹⁷³ Lawrence M. Frankel, *The Flawed Institutional Design of U.S. Merger Review: Stacking the Deck Against Enforcement*, 2008 UTAH L. REV. 159, 171-72.

¹⁷⁴ *Baker Hughes Inc.*, 908 F.2d at 987 (D.C. Cir. 1990) (“The existence and significance of barriers to entry are frequently, of course, crucial considerations in a rebuttal analysis.”); *Cargill, Inc. v. Monfort of Colo., Inc.*, 479 U.S. 104, 119-20 n.15 (1986) (recognizing that “without barriers to entry into the market it would presumably be impossible to maintain supracompetitive prices for an extended time”); *United States v. Waste Mgmt., Inc.*, 743 F.2d 976, 983 (2d Cir. 1984) (easy entry would eliminate any anticompetitive impact of merger in highly concentrated industry); *United States v. Syufy Enter.*, 903 F.2d 659, 664 (9th Cir. 1990) (“If there are no significant barriers to entry ... any attempt to raise prices above the competitive level will lure into the market new competitors able and willing to offer their commercial goods or personal services for less.”); *FTC v. Cardinal Health, Inc.*, 12 F. Supp. 2d 34, 54-55 (D.D.C. 1998) (finding that ease of entry can be sufficient to offset the government’s prima facie case of anticompetitiveness).

¹⁷⁵ AMC Report, *supra* note 162, at 62.

irrationality in failing to pursue entry).¹⁷⁶ Both categories of market-entry error can cast light on ways in which antitrust law's assumptions about entry are imperfect.

Excess Entry. Entry occurs in some industries when it is economically irrational. Indeed, some industries “see perennially high rates of entry, increase[d] competition, and high rates of failure.”¹⁷⁷ The behavioral economics and behavioral finance literature offers at least three possible explanations for this tendency.

One explanation is the “optimism bias” or “positivity illusion.”¹⁷⁸ The notion is that when individuals judge their likelihood of experiencing a good outcome in an event that they have some control over – obtaining a favorable job, financial security, or marriage – they overestimate their likelihood of success.¹⁷⁹ In contrast, when individuals estimate the probability that something negative will happen to them – a car accident from reckless driving, a loss in the stock market, or divorce – they underestimate its likelihood.

Economists Camerer and Lovallo have shown that this optimism bias carries over to entry decision-making.¹⁸⁰ Their work found that, while participants in a given market may correctly realize that the average entrant's profit would be negative, the individual participants will incorrectly expect that their own profits will be positive. Moreover, their work found that optimism bias is most pronounced in situations they

¹⁷⁶ Don A. Moore et al., *What Competition? Myopic Self-focus in Market-entry Decisions*, 18 *ORG. SCI.* 440, 441 (2007).

¹⁷⁷ Moore et al., *supra* note 176, at 440.

¹⁷⁸ See Avishalom Tor, *The Fable of Bounded Rationality, Market Discipline, and Legal Policy*, 101 *MICH. L. REV.* 482, 505-08 (2002) (discussing the principle of overconfidence in the context of entry decision-making).

¹⁷⁹ Moore et al., *supra* note 176, at 440-41.

¹⁸⁰ Colin Camerer & Dan Lovallo, *Overconfidence and Excess Entry: An Experimental Approach*, 89 *AM. ECON. REV.* 306 (1999).

describe as “reference group neglect,”¹⁸¹ where the potential entrant believes it has a particular expertise or skill in the given market – even where the entrant knows that its competitors believe that they have a special skill. There “is more entry when people are betting on their own relative skill rather than on a random device” and “[t]he more surprising finding is that overconfidence is even stronger when subjects self-select into the experimental sessions, knowing their success will depend partly on their skill (and that others have self-selected too).”¹⁸²

A second and related explanation is that entrants may be driven by the desirability bias. Desirability bias (or “wishful thinking”) is the tendency of individuals to predict favorable outcomes in external events that they have no control over, but whose outcomes nevertheless implicate their self-perception.¹⁸³ Such errant predictions may occur if entrants (i) overestimate the likelihood that a market participant (or participants) will fail or (ii) underestimate the likelihood of events in the economy that will negatively affect their prospects of success. In terms of antitrust, a party entering a market with low entry barriers could overestimate the likelihood that it would obtain the financing to succeed over the long run or underestimate the likelihood that new entrants against whom it will compete for market share will succeed. As Professor Avishalom Tor, who has extensively written in the area of behavioral antitrust, has observed “entrants who overestimate their prospects are more likely to fail than entrants who make accurate average estimates, but their presence also decreases other entrants’ probability of success and changes the composition of the final cohort of

¹⁸¹ *Id.* at 315.

¹⁸² *Id.* at 310-16.

¹⁸³ See Robert A. Olsen, *Desirability Bias Among Professional Investment Managers: Some Evidence from Experts*, 10 J. BEHAV. DECISIONMAKING 65, 65 (1997) (defining desirability bias as “the tendency to overpredict desirable outcomes and underpredict unwanted outcomes”); see also Tor, *supra* note 178, at 508-510, 515-516 (discussing the application of desirability bias to entry in the antitrust context).

successful entrants.”¹⁸⁴

A third and related bias is when entrants’ focus on themselves rather than understanding competition. One qualitative field study of entrepreneurs found that those who started their own businesses thought about their personal abilities, but “rarely mentioned external factors such as the capacity of the market they were entering or the strength of their competitors.”¹⁸⁵ Thus entrants over-enter markets they perceive as easy for them (such as restaurants), and do not research the external environment or competition.¹⁸⁶

Sparse Entry. At other times, entry does not occur when it is economically rational. Thus companies can maintain supracompetitive pricing in markets with low entry barriers. Between 1988 and 1996, the DOJ prosecuted criminally cartels in dozens of industries that, on the surface, appear to have moderate or low entry barriers, including turtles, chain link fences, and bicycle retailers.¹⁸⁷ Other recent cartels involved college textbooks,¹⁸⁸ packaged ice,¹⁸⁹ scrap metal,¹⁹⁰ bid rigging at public real estate foreclosure auctions,¹⁹¹ and retail gasoline and diesel fuel.¹⁹² The

¹⁸⁴ Tor, *supra* note 178, at 532.

¹⁸⁵ Moore et al., *supra* note 176, at 441.

¹⁸⁶ *Id.* at 444.

¹⁸⁷ See, e.g., Stucke, *supra* note 62, at 565-66 (collecting cases revealing price-fixing in markets that superficially, at least, appear to have moderate or low entry barriers).

¹⁸⁸ United States v. Dennis L. Saner and Harold E. Vogel, No. IP 03181-CR (S.D. Ind. filed Nov. 13, 2003), *available at* <http://www.justice.gov/atr/cases/f201500/201507.pdf>.

¹⁸⁹ United States v. Home City Ice Co., Criminal No. CR-1-07-140 (S.D. Oh. filed Nov. 5, 2007), *available at* <http://www.justice.gov/atr/cases/f234200/234205.htm>.

¹⁹⁰ U.S. Dep’t of Justice Press Release, Cleveland Scrap Metal Dealer and Owner Indicted in Antitrust Conspiracy (Feb. 6, 2008), http://www.justice.gov/atr/public/press_releases/2008/229926.htm (conspiracy involved industrial scrap metal dealers who generally place collection boxes at manufacturers’ sites to collect scrap metal, then pick it up, process it, and resell it to customers).

¹⁹¹ U.S. Dep’t of Justice Press Release, California Real Estate Executive Pleads Guilty to Bid Rigging (Apr. 16, 2010), http://www.justice.gov/atr/public/press_releases/2010/257801.htm.

¹⁹² U.S. Dep’t of Justice Press Release, Convenience Store Company and Individual Charged with Retail Gasoline Price Fixing in Oklahoma (Sept. 19, 2008),

behavioral economics literature offers two possible explanations for the absence of entry in these markets.

One explanation is that, while information is available, individuals do not react to risk or uncertainty as a rational profit-maximizer would. The Efficient Market Hypothesis, like rational choice theory generally, assumes that so long as information is publically available, rational profit-maximizing traders will enter financial markets if there are irrational price moves to maintain market efficiency.¹⁹³ Thus, under the Efficient Market Hypothesis, stocks are consistently priced at a “rational” level: stock prices of actively traded companies quickly adjust to reflect the rational expectations generated by information as it becomes available.¹⁹⁴ As recent events have proven (and as the behavioral finance literature shows), rational arbitrageurs do not, however, always exploit obvious fiscal opportunities to restore prices to their fundamental value.¹⁹⁵ The behavioral finance literature also suggests that sparse entry may result from the fact that the information needed to make a rational decision about entry can be costly to acquire, process, and verify.¹⁹⁶

http://www.justice.gov/atr/public/press_releases/2008/237430.htm.

¹⁹³ NICHOLAS BARBERIS & RICHARD THALER, A SURVEY OF BEHAVIORAL FINANCE, IN ADVANCES IN BEHAVIORAL FINANCE 15 (Richard H. Thaler ed., 2005); *see also* Stucke, *supra* note 62, at 569-70.

¹⁹⁴ Jeffrey N. Gordon & Lewis A. Kornhauser, *Efficient Markets, Costly Information, and Securities Research*, 60 N.Y.U. L. REV. 761, 770-72 (1985) (explaining the efficient market hypothesis); Lynn A. Stout, *Are Stock Markets Costly Casinos? Disagreement, Market Failure, and Securities Regulation*, 81 VA. L. REV. 611, 646-48 (1995) (describing concept of the efficient market hypothesis in modern financial theory); *see also* Ronald J. Gilson & Reinier H. Kraakman, *The Mechanisms of Market Efficiency*, 70 VA. L. REV. 549, 554-65 (1984) (detailing principles of market efficiency).

¹⁹⁵ For an account of the rise and fall of the efficient market hypothesis, *see* FOX, *supra* note 8.

¹⁹⁶ Lynn A. Stout, *The Mechanism of Market Inefficiency*, 28 J. CORP. L. 635, 637-55 (2003) (noting that because information is costly to obtain, process, and verify, “it is impossible for every participant in securities markets to actually acquire, understand, and validate all the available information that might be relevant in valuing securities”); *see also* Frederick Dunbar & Dana Heller, *Fraud on the Market Meets Behavioral Finance*, 31 DEL. J. CORP. L. 455 (2006) (discussing examples where arbitrage should occur in financial

A second explanation for sparse entry is the flipside of the overconfidence bias: while people are overconfident with respect to easy tasks, they rate themselves well below average on difficult tasks. So rates of entry, in one behavioral experiment, differed dramatically for difficult and simple tasks. In the experiment, participants over-entered when the quiz was simple (69% of the time), but less often on rounds when the quiz was difficult (39% of the time), even though they stood to profit in entering the difficult rounds.¹⁹⁷ There was no evidence that the university students learned to avoid these mistakes over 12 rounds.¹⁹⁸ In basing entry largely on their myopic judgment, the participants failed to see profitable opportunities where less competition existed.

These insights from the behavioral literature suggest that hypothetical entry barriers are only part of understanding entry. At times, some proclaim to the antitrust agencies that they would enter in response to a small but significant nontransitory increase in price (SSNIP). Accurately predicting an entrant's success, however, requires a more complete understanding of the biases that skew the entrant's wealth maximization calculus. At other times, even if entry barriers are low, entry will not occur despite the profit opportunity. A more fulsome entry analysis should therefore consider factors apart from entry barriers, such as: (i) why entry does not occur in markets when antitrust's economic theory predicts it would, (ii) why do others enter markets when economically irrational, and (iii) assessing a prospective entrant's likelihood of success with the recognition that its optimism may bias its outlook.

B. Assumption that Companies Merge to Generate Significant Efficiencies
Antitrust policy assumes that companies often merge to obtain

markets, but did not).

¹⁹⁷ Moore et al., *supra* note 176, at 449.

¹⁹⁸ *Id.* at 450.

efficiencies. “All of us know,” one Bush antitrust official remarked, “that the rationale for most mergers is procompetitive and that most mergers have no adverse effects on competition.”¹⁹⁹ Some noted that the change from the 1960s is “more than anything else . . . the perception that many, if not most, mergers are efficiency-enhancing, a fact that has come to the forefront with the need to permit American firms to be competitive in international markets.”²⁰⁰ The antitrust agencies believe that “[t]he vast majority of mergers pose no harm to consumers, and many produce efficiencies that benefit consumers in the form of lower prices, higher quality goods or services, or investments in innovation.”²⁰¹ The belief is that profit-maximizing firms merge to generate efficiencies and/or to achieve market power. If the merger generates neither, it is economically irrational.

The Merger Guidelines likewise state that the “a primary benefit of mergers to the economy is their potential to generate significant efficiencies and thus enhance the merged firm’s ability and incentive to compete, which may result in lower prices, improved quality, enhanced service, or new products”²⁰² Although the Merger Guidelines treat efficiencies as a defense, the merging parties can use efficiencies to explain why the merger will unlikely lead to coordinated effects, i.e., the efficiencies will reduce the merged firm’s marginal costs resulting in a “new maverick firm” that has

¹⁹⁹ William J. Kolasky, Deputy Assistant Attorney General, Antitrust Div., U.S. Department of Justice, *What Is Competition?* (Oct. 2, 2002), available at <http://www.justice.gov/atr/public/speeches/200440.htm>.

²⁰⁰ Thomas E. Kauper, *Merger Control in the United States and the European Union: Some Observations*, 74 ST. JOHN’S L. REV. 305, 328 (2000).

²⁰¹ Fed. Trade Comm’n & U.S. Dep’t of Justice, Commentary on the Horizontal Merger Guidelines (March 2006), available at <http://www.usdoj.gov/atr/public/guidelines/215247.htm> [hereinafter Guidelines Commentary].

²⁰² Horizontal Merger Guidelines, *supra* note 32, at §10; *see also* 1984 Merger Guidelines (DOJ “seeks to avoid unnecessary interference with that larger universe of mergers that are either competitively beneficial or neutral”). For a detailed account of the evolution of the efficiencies defense, *see* William J. Kolasky & Andrew R. Dick, *The Merger Guidelines and the Integration of Efficiencies into Antitrust Review of Horizontal Mergers*, 71 ANTITRUST L.J. 207 (2003).

less incentive to engage in tacit or express collusion.²⁰³ Consequently, “[t]he Agencies will not challenge a merger if cognizable efficiencies are of a character and magnitude such that the merger is not likely to be anticompetitive in any relevant market.”²⁰⁴

At times, the antitrust agencies reject the merging parties’ efficiencies defense, and no federal court to date has relied on efficiencies in rejecting the antitrust agencies’ challenge to an otherwise anticompetitive merger. But efficiencies continue to play a significant role in the agencies’ merger review. In recent closing statements, for example, the DOJ highlighted the likely efficiencies from mergers in the highly concentrated telephone,²⁰⁵ satellite radio,²⁰⁶ airline,²⁰⁷ and home appliance²⁰⁸ industries. The DOJ noted that “one of the key parts” of its investigation of a proposed beer joint venture was having “verified that the joint venture” between Miller and Molson Coors was “likely to produce substantial and credible savings that will significantly reduce the companies’ costs of producing and distributing beer.”²⁰⁹

²⁰³ Horizontal Merger Guidelines, *supra* note 32, at §10.

²⁰⁴ *Id.* at §10.

²⁰⁵ U.S. Dep’t of Justice, Press Release, Statement by Assistant Attorney General Thomas O. Barnett Regarding the Closing of the Investigation of AT&T’s Acquisition of Bellsouth: Investigation Concludes That Combination Would Not Reduce Competition (Oct. 11, 2006), http://www.justice.gov/atr/public/press_releases/2006/218904.pdf.

²⁰⁶ U.S. Dep’t of Justice, Press Release, Statement of the Department of Justice Antitrust Division on its Decision to Close its Investigation of XM Satellite Radio Holdings Inc.’s Merger with Sirius Satellite Radio Inc.: Evidence Does Not Establish that Combination of Satellite Radio Providers Would Substantially Reduce Competition (March 24, 2008), http://www.justice.gov/atr/public/press_releases/2008/231467.pdf.

²⁰⁷ U.S. Dep’t of Justice, Press Release, Statement of the Department of Justice’s Antitrust Division on its Decision to Close its Investigation of the Merger of Delta Air Lines Inc. and Northwest Airlines Corporation (Oct. 29, 2008), http://www.justice.gov/atr/public/press_releases/2008/238849.htm.

²⁰⁸ U.S. Dep’t of Justice, Press Release, Department of Justice Antitrust Division Statement on the Closing of its Investigation of Whirlpool’s Acquisition of Maytag (March 29, 2006), http://www.justice.gov/atr/public/press_releases/2006/215326.htm.

²⁰⁹ U.S. Dep’t of Justice, Press Release, Statement of the Department of Justice’s Antitrust Division on its Decision to Close its Investigation of the Joint Venture between SABMiller Plc and Molson Coors Brewing Company (June 5, 2008),

Recent changes to the Merger Guidelines in 2007 and 2010 emphasize that “[e]fficiencies are difficult to verify and quantify . . . because much of the information relating to efficiencies is uniquely in the possession of the merging firms” and that, “[m]oreover, efficiencies projected reasonably and in good faith by the merging firms may not be realized.”²¹⁰ Indeed, in several notable cases – AOL/Time Warner and Sony/Columbia Pictures to name a few – the parties fared poorly at predicting poorly the mergers’ likely efficiencies.²¹¹ And if the events in the financial sector in the fall of 2008 are any indication, in many of the bank mergers that preceded the financial crisis, the banks failed to sustain their anticipated growths in profit.²¹² As economist F.M. Scherer observed, “making mergers is a risky proposition” and “perhaps the majority, fail to live up to expectations and may indeed make matters worse rather than better.”²¹³ For Scherer, “[m]aking mergers is a form of gambling; skill matters, but there is an important chance component.”²¹⁴

The unrealized efficiencies in these cases may have resulted from incomplete information or unanticipated events (such as an economic downturn). However, these phantom efficiencies may also be the result of the biases discussed in the behavioral economics literature.

One explanation is that in competitive settings – such as auctions and bidding wars – passion may trump reason. Rational choice theory assumes

http://www.justice.gov/atr/public/press_releases/2008/233845.htm.

²¹⁰ Horizontal Merger Guidelines, *supra* note 32, at §10.

²¹¹ See ROBERT F. BRUNER, DEALS FROM HELL: M&A LESSONS THAT RISE ABOVE THE ASHES (2005) (summarizing major failed mergers); Tim Arango, *How the AOL-Time Warner Merger Went So Wrong*, N.Y. TIMES, Jan. 11, 2010.

²¹² See Peter Thal Larsen, *Global, universal, unmanageable? Why many are wary of bank mega mergers*, FIN. TIMES, Mar. 29, 2007 (arguing that the efficiencies from bank mergers remain unproven) (“Despite a decade of banking mergers, there is no evidence that big banks are any more efficient or profitable than their smaller rivals.”).

²¹³ F.M. Scherer, *Some Principles for Post-Chicago Antitrust Analysis*, 52 CASE W. RES. L. REV. 5, 18 (2001).

²¹⁴ *Id.*

that in an auction, each profit-maximizing bidder assumes that the other bidders are also rational. In bidding wars (whether for antique furniture or a multi-million-dollar firm), passion and optimism may prevail, leading participants to overvalue the purchased assets.

In a recent experiment, neuroscientists and economists combined brain imaging techniques and behavioral economics research to better understand why individuals overbid.²¹⁵ Specifically, they examined whether the fear of losing the social competition inherent in an auction game causes people to overpay. Members in the “loss-frame” group were given fifteen dollars at the *beginning* of each auction round. If they won the auction for that round, they would get to keep the fifteen dollars and the payoff from the auction. If they lost, they would have to return the fifteen dollars. Members in the “bonus-frame” group, on the other hand, were told that if they won that auction round they would get a fifteen-dollar bonus at the end of the round. Whether one gets fifteen dollars at the beginning or end of the auction round should not affect a rational player: the winner of each round gets fifteen extra dollars, the loser gets nothing. Nonetheless the loss-treatment group members outbid the bonus-treatment group members, which outbid the baseline group.

A second possible explanation is that corporate executives suffer from “self-attribution bias,” meaning that (fueled by their successes with prior mergers) they are overconfident in their management skills and believe that the next merger would yield similar or greater efficiencies. A study of a sample of public acquisitions that occurred between 1985 and 2002 found that CEOs who previously engaged in a successful acquisition appear to

²¹⁵ Mauricio R. Delgado et al., *Understanding Overbidding Using the Neural Circuitry of Reward to Design Economic Auctions*, *SCIENCE*, Sept. 26, 2008, at 1849; see also THALER, *WINNER’S CURSE*, *supra* note 42, at 50-62 (discussing experimental and field evidence).

overly attribute their role in successful deals, leading to more deals even though these subsequent deals are value destructive.²¹⁶ Moreover, the study found that CEOs tend to engage in stock purchases that reflect this bias (engaging in more aggressive stock acquisitions prior to each successive deal).²¹⁷

In short, antitrust enforcers do not regularly revisit mergers, so it is unclear whether the claimed efficiencies actually materialize. Thus one cannot assume that most mergers are procompetitive. More empirical research is needed to determine to what extent close-call mergers generate significant efficiencies.²¹⁸ Such research may help identify factors of when, and under what circumstances, the claimed efficiencies will likely occur.

C. Assumption that Rational Big Buyers Will Thwart the Exercise of Market Power

Neoclassical economics assumes that cartels are more unstable with big or “power buyers.” Big buyers use their purchasing power to negotiate a lower price by playing one cartel member off the other. If the cartel members stand firm, the big buyer can take its business to fringe firms outside of the cartel, sponsor a new entrant by offering non-price perks such as favorable product placement or more shelf space, or vertically integrate. Knowing this, rational cartel members likely will defect before the big buyer fulfills its threat. As Posner said,

²¹⁶ See, e.g., Matthew T. Billett & Yiming Qian, *Are Overconfident CEOs Born or Made? Evidence of Self Attribution Bias from Frequent Acquirers*, 54 MGMT. SCI. 1037 (2008).

²¹⁷ *Id.*

²¹⁸ For the benefits of verifying, after the merger the parties’ ex ante efficiency claims. See Stucke, *supra* note 62, at 582; Robert Pitofsky, *Proposals for Revised United States Merger Enforcement in a Global Economy*, 81 GEO. L.J. 195, 222-27 (1992) (proposing enforcement agencies’ conditional clearance of certain mergers subject to post-merger verification of efficiencies); Dennis A. Yao & Thomas N. Dahdouh, *Information Problems in Merger Decision Making and Their Impact on Development of an Efficiencies Defense*, 62 ANTITRUST L.J. 23, 26-27 (1993) (stating that post-merger review of efficiencies equivalent to performance bonding by merging parties verify their assertion that merger will realize efficiencies).

The concentration of the buying side of a market does inhibit collusion. The bigger a buyer is, the more easily and lucratively a member of the cartel can cheat on his fellows; for with a single transaction, less likely to be detected than a series of transactions, he may be able to increase his sales and hence profits dramatically. But with all the members thus vying for the large orders of big buyers, the cartel will erode.²¹⁹

Again this assumption is important in weighing the costs of false positives and negatives. It is hard to test the degree to which large, sophisticated buyers reliably defeat the formation and maintenance of tacit or express collusion. Detecting cartels is difficult by itself. Determining whether a cartel would have formed *but for* the presence of a big buyer is even more difficult. One could study the extent to which cartels carved out markets with big buyers. But that would not explain how cartels thrived despite the existence of big buyers.

Support for the power buyer argument has waned in the federal antitrust agencies.²²⁰ But the issue of power buyers still arises in the agencies' merger review. In deciding not to challenge Whirlpool Corporation's acquisition of Maytag Corporation, for example, the DOJ noted that "the large retailers through which the majority of these appliances are sold—Sears, Lowe's, The Home Depot and Best Buy—have alternatives available to help them resist an attempt by the merged entity to raise prices."²²¹

Even when the antitrust agencies believe that power buyers could not

²¹⁹ *Hosp. Corp. of America v. FTC*, 807 F.2d 1381, 1391 (7th Cir. 1987) (Posner, J.) (internal citations omitted). The court, however, noted that the role of the third-party payor is not quite that of a large buyer since as a practical matter "Blue Cross could not tell its subscribers in Chattanooga that it will not reimburse them for any hospital services there because prices are too high." *Id.*

²²⁰ See Horizontal Merger Guidelines, *supra* note 32, at § 8 ("The Agencies consider the possibility that powerful buyers may constrain the ability of the merging parties to raise prices. . . . However, the Agencies do not presume that the presence of powerful buyers alone forestalls adverse competitive effects flowing from the merger.").

²²¹ U.S. Dep't of Justice, Press Release, Department of Justice Antitrust Division Statement on the Closing of its Investigation of Whirlpool's Acquisition of Maytag (March 29, 2006), http://www.justice.gov/atr/public/press_releases/2006/215326.htm.

defeat the exercise of market power, a generalist court may disagree. Although some courts have noted that evidence of power buyers is insufficient to independently rebut a *prima facie* case,²²² the presence of power buyers remains an important factor courts consider in evaluating whether a merger violates Section 7.²²³

The citric acid cartel is one example. In 1991, a federal district court judge denied the DOJ's challenge to Archer-Daniels-Midland's ("ADM") long-term lease agreement with a competitor. The court believed that ADM's customers were sufficiently powerful to counteract any non-cost-based price hike.²²⁴ The court observed that ongoing "consolidation of buying power [was] an effective means of counteracting any potential market power that might be exercised by sellers" – an observation that was "borne out by both economic theory and the facts."²²⁵ The power buyers had "successfully used a variety of tactics to obtain low prices from [High

²²² Chi. Bridge & Iron Co. v. FTC, 534 F.3d 410 (5th Cir. 2008) (noting that "courts have not considered the 'sophisticated customer' defense as itself independently adequate to rebut a *prima facie* case" and that "the economic argument for even partially rebutting a presumptive case, because a market is dominated by large buyers, is weak"); *Cardinal Health*, 12 F. Supp.2d at 58 ("Although the courts have not yet found that power buyers alone enable a defendant to overcome the government's presumption of anti-competitiveness, courts have found that the existence of power buyers can be considered in their evaluation of an anti-trust case, along with such other factors as the ease of entry and likely efficiencies.").

²²³ See, e.g., *FTC v. Tenet Health Care Corp.*, 186 F.3d 1045, 1054 (8th Cir. 1999) (questioning district court's reliance on the testimony of managed care payers, since testimony is contrary to their economic interests "and thus is suspect"); *Baker Hughes*, 908 F.2d at 986 (citing customers' ability to "closely examine available options and typically insist on receiving multiple, confidential bids for each order" as evidence that they could combat any price increase resulting from the mergers); *Syufy Enters.*, 903 F.2d at 670 ("Distributors like Orion have substantial leverage over Syufy and they know it"); *United States v. Country Lake Foods, Inc.*, 754 F. Supp. 669 (D. Minn. 1990) (refusing to enjoin a merger where three large customers accounted for 90 percent of all purchases in the relevant product market and crediting the customers' ability to monitor prices closely and aggressively challenge potential price increases by seeking alternative sources of supply outside the relevant geographic market).

²²⁴ *United States v. Archer-Daniels Midland Co.*, 781 F. Supp. 1400, 1416, 1422 (S.D. Iowa 1991).

²²⁵ *Id.*

Fructose Corn Syrup (“HFCS”)] suppliers, including playing off suppliers against one another, swinging volume back and forth among suppliers, disciplining sellers by cutting them off entirely, successfully insisting on year long or multi-year tolling agreements, and holding out the threat of inducing a new entrant into HFCS production.”²²⁶ Consequently, “the size and sophistication of buyers” in the industry was “a powerful ‘other factor’ that strongly mitigates against the possibility of any attempt by . . . suppliers to raise prices anticompetitively.”²²⁷

The DOJ later prosecuted ADM and others for engaging in a cartel relating to citric acid. “What is particularly ironic is that the perpetrators and victims [Coca-Cola and Procter & Gamble] of the citric acid cartel included some of the very same firms that the district court found were unlikely to engage in or be vulnerable to cartel activity in refusing to enjoin an acquisition by ADM of one of its leading rivals in the high fructose corn syrup market back in 1991.”²²⁸ In the ensuing private litigation, Judge Posner writing for the Seventh Circuit rejected the defendants’ argument that the presence of large buyers that included Coca-Cola and Pepsi-Cola as a matter of economic theory defeated the possibility of price-fixing: although these “very large buyers” drove hard bargains and obtained large discounts from the list price of HFCS, “it does not follow that the defendants could not and did not fix the price of HFCS 55.”²²⁹

Indeed, going down the DOJ’s list of Sherman Act violations yielding a corporate fine of \$10 million or more,²³⁰ one finds other recent international

²²⁶ *Id.*

²²⁷ *Id.*

²²⁸ William J. Kolasky, Deputy Assistant Attorney General, Antitrust Division, Dep’t of Justice, Coordinated Effects in Merger Review: from Dead Frenchmen to Beautiful Minds and Mavericks 19 (April 24, 2002), <http://www.justice.gov/atr/public/speeches/11050.htm>.

²²⁹ *In re High Fructose Corn Syrup Antitrust Litig.*, 295 F.3d 651 (7th Cir. 2002).

²³⁰ U.S. Dep’t of Justice, Antitrust Division, Sherman Act Violations Yielding a

price-fixing cartels with big buyers as victims. The lysine cartel – featured in the film *The Informant!* (based on a book of the same name)²³¹ – is one example. There the world’s major lysine manufacturers orchestrated an international cartel that caused a 70 percent price increase in its first nine months. The cartel victims included Tysons Foods (the largest purchaser of lysine in the United States) and ConAgra (whose consumer brands are found in 97 percent of U.S. households²³²). The liquid crystal display panels cartel²³³ harmed “some of the largest computer, television and cellular telephone manufacturers in the world, including Apple, Dell and Motorola.”²³⁴ The air transportation cartel (among the “largest and most far-reaching antitrust conspiracies ever detected by the Division”)²³⁵ affected “thousands of businesses—from the corner store to the biggest corporation.”²³⁶ The Dynamic Random Access Memory cartel harmed some of the world’s largest manufacturers of personal computers and servers, including Dell Inc., Compaq Computer Corporation, Hewlett-Packard Company, Apple Computer, Inc., International Business Machines

Corporate Fine of \$10 Million or More (as of 2/16/2010), <http://www.justice.gov/atr/public/criminal/sherman10.html>.

²³¹ KURT EICHENWALD, *THE INFORMANT* (2000).

²³² Company Profile, <http://investor.conagrafoods.com/phoenix.zhtml?c=202310&p=aboutus>.

²³³ Criminal Information, United States v. LG Display Co., Ltd. & LG Display America, Inc., Criminal No. CR 08-0803 VRW (N.D. Ca. Nov. 12, 2008), *available at* <http://www.justice.gov/atr/cases/f239300/239375.htm>.

²³⁴ Press Release, U.S. Dep’t of Justice, LG, Sharp, Chunghwa Agree to Plead Guilty, Pay Total Of \$585 Million in Fines for Participating in LCD Price-Fixing Conspiracies (Nov. 12, 2008), http://www.justice.gov/atr/public/press_releases/2008/239349.pdf.

²³⁵ Scott D. Hammond, Deputy Assistant Attorney General, U.S. Dep’t of Justice, Antitrust Div., “Recent Developments, Trends, and Milestones in the Antitrust Division’s Criminal Enforcement Program” (March 26, 2008), <http://www.justice.gov/atr/public/speeches/232716.htm>.

²³⁶ Press Release, U.S. Dep’t of Justice, Major International Airlines Agree to Plead Guilty and Pay Criminal Fines Totaling More Than \$500 Million for Fixing Prices on Air Cargo Rates (June 26, 2008), http://www.justice.gov/atr/public/press_releases/2008/234435.htm.

Corporation, and Gateway, Inc.²³⁷ The graphite electrodes conspiracy affected sales to steel mills in the United States and abroad.²³⁸

So how should a generalist court respond to the defense that large sophisticated buyers could readily defeat the exercise of market power? Sceptically. First, in the context of merger challenges, customer testimony is not always credible. Indeed, in contrast to the findings in *ADM*,²³⁹ some courts have that found customer testimony as not probative of the merger's likely competitive effects, considering it lacking in foundation²⁴⁰ or biased.²⁴¹

Second, the behavioral economics literature suggests that big buyers (like CEOs with respect to efficiencies and entry) may be overconfident of their negotiating prowess to defeat any non-cost-based price hike. As a result, when the antitrust agencies interview big buyers, those buyers may not accurately project their skill and power over sellers with market or monopoly power. Additionally, these buyers' responses might be contingent on how the issue is framed. For example, big buyers may be genuinely less concerned about protecting their customers (and thereby resist any non-cost-based wholesale price increase by the merging parties)

²³⁷ Criminal Information, *United States v. Samsung Electronics Company, Limited and Samsung Semiconductor, Inc.*, CR-05-643 (PJH) (N.D. Ca. Oct. 13, 2005), *available at* <http://www.justice.gov/atr/cases/f212000/212010.htm>.

²³⁸ Government's Rule 11 Memorandum, *United States v. SGL Carbon Aktiengesellschaft and Robert J. Koehler*, Criminal No. 99-244 (E.D. Pa. filed May 4, 1999), *available at* <http://www.justice.gov/atr/cases/f3800/3824.htm>.

²³⁹ *ADM*, 781 F. Supp. at 1416, 1422.

²⁴⁰ *United States v. Oracle*, 331 F. Supp. 2d 1098, 1131 (N.D. Cal. 2004) (noting that customer witness speculation about "what they could do in the event of an anticompetitive price increase . . . was not backed up by serious analysis that they had themselves performed or evidence they presented" and that there "was little, if any, testimony by these witnesses about what they would or could do or not do to avoid a price increase").

²⁴¹ *FTC v. Arch Coal, Inc.*, 329 F. Supp. 2d 109, 145-146 (D.D.C. 2004) ("[W]hile the court does not doubt the sincerity of the anxiety expressed by SPRB customers, the substance of the concern articulated by the customers is little more than a truism of economics: a decrease in the number of suppliers may lead to a decrease in the level of competition in the market."); *see also* *FTC v. Freeman Hosp.*, 69 F.3d 260, 272 (8th Cir. 1995) (same).

than taking sales away from their rivals (and thus willing to accept a supra-competitive wholesale price, if that price was lower relative to the wholesale prices offered to their competitor retailers).

Once again, more empirical research is needed to determine under what circumstances large, sophisticated purchasers have been successful or unsuccessful in preventing the exercise of market power. In the short run, however, the revisions to the Merger Guidelines suggest that the agencies are willing to look beyond the mere fact that a large buyer exists to determine whether that large buyer is actually in a position to constrain anticompetitive conduct.²⁴²

D. Reliance on Optimal Deterrence Theory to Deter Cartels

The DOJ's criminal antitrust prosecutions are driven more by the facts than economic theory. But neoclassical economic theory still influences antitrust policies on optimal penalties. The generally accepted approach under neoclassical optimal deterrence theory is that "rational" profit-maximizers will weigh the magnitude of a likely penalty and the probability of being detected against the gain from a violation before engaging in anticompetitive conduct.²⁴³ To achieve optimal deterrence, the total penalty levied against a cartel (which includes civil damages and criminal penalties) should equal the violation's expected net harm to others (plus enforcement

²⁴² *Supra* note 220.

²⁴³ International Competition Network Working Group on Cartels, *Building Blocks for Effective Anti-Cartel Regimes* vol. 1, *Defining Hard Core Cartel Conduct, Effective Institutions, Effective Penalties* 53 (June 2005), available at http://www.internationalcompetitionnetwork.org/media/library/conference_4th_bonn_2005/Effective_Anti-Cartel_Regimes_Building_Blocks.pdf; Scott D. Hammond, Deputy Assistant Attorney General, U.S. Dep't of Justice, Antitrust Div., *The Evolution of Criminal Enforcement Over the Last Two Decades* (Feb. 25, 2010), <http://www.justice.gov/atr/public/speeches/255515.htm> ("If the potential penalties that can be imposed upon cartel participants are not perceived as outweighing the potential rewards of participating in a cartel, then the fine imposed becomes merely part of the cost of doing business.").

costs) divided by the probability of detection and proof of the violation.²⁴⁴ The DOJ, however, unlike some law-and-economics scholars,²⁴⁵ believes that corporate (or individual) fines are inadequate to deter cartels and that incarceration is needed.

Over the last 50 years, Congress has considerably increased the maximum monetary criminal penalties and incarceration periods for antitrust violations. When the Sherman Act was enacted in 1890, violations were misdemeanors with a maximum fine of \$5,000 and up to one year incarceration.²⁴⁶ By 1954, however, the then head of DOJ's Antitrust Division observed that "over the years a precedent has been established: almost never has anyone been committed to jail for a Sherman Act offense."²⁴⁷ Congress responded with stiffer criminal penalties in 1955,²⁴⁸ 1971,²⁴⁹ 1984,²⁵⁰ 1990,²⁵¹ and, most recently, 2004.²⁵²

²⁴⁴ William M. Landes, *Optimal Sanctions for Antitrust Violations*, 50 U. CHI. L. REV. 652, 656, 666-68 (1983).

²⁴⁵ See, e.g., Joseph C. Gallo et al., *Department of Justice Antitrust Enforcement 1955-1997: An Empirical Study*, 17 REV. INDUS. ORG. 75, 101 (2000) (summarizing economic literature that nonmonetary sanctions are costly, should be used only with maximal monetary sanctions and when offenders are poor); Nuno Garoupa & Daniel Klerman, *Corruption and the Optimal Use of Nonmonetary Sanctions*, 24 INTERNAT'L REV. L. & ECON. 219, 220 (2004); Gary S. Becker, *The Economic Way of Looking at Behavior*, 101 J. POL. ECON. 385, 391 (1993).

²⁴⁶ Sherman Act, ch. 647, §§1-2, 26 Stat. 209 (1890).

²⁴⁷ Speech by Assistant Attorney Gen. Stanley N. Barnes, Promoting Competition: Current Antitrust Problems and Policies, delivered before the Metropolitan Economic Association, New York (Oct. 25, 1954).

²⁴⁸ Pub. L. No. 135, 69 Stat. 282, (codified as amended at 15 U.S.C. §1 (1958)) (increasing the maximum fine to \$50,000). The average fine imposed under the Sherman Act between 1946 and 1953 was reportedly \$2600. Victor H. Kramer, *Comment, Criminal Prosecutions for Violations of the Sherman Act: In Search of A Policy*, 48 GEO. L. J. 530, 532 n.9 (1960).

²⁴⁹ Antitrust Procedures and Penalties Act of 1974, Pub. L. No. 93-528, §3, 88 Stat. 1706, 1708 (1974) (increasing the maximum criminal fines to \$1,000,000 for corporations and \$100,000 for individuals and making Sherman Act violations felonies with prison terms of up to three years).

²⁵⁰ Criminal Fine Enforcement Act of 1984, Pub. L. No. 98-596, 98 Stat. 3143, reenacted in Criminal Fine Improvements Act of 1987, Pub. L. No. 100-185, 100 Stat. 1279 (codified as amended at 18 U.S.C. §3571(d) (2000)) (increasing the maximum criminal fine for individuals convicted of an antitrust violation to \$250,000 and authorizing

Notwithstanding these repeated efforts to adjust the calculation for potential cartel members, it is hard to tell how well these stiffer criminal penalties are working.²⁵³ On the one hand, some cartels have carved out the United States from their operations to avoid the risk of criminal sanctions.²⁵⁴ But despite (i) the escalating criminal and civil fines in the U.S. (and abroad), (ii) treble private civil damages, (iii) longer jail sentences, and (iv) a generous leniency program, there is no indication that the United States has reached optimal deterrence.²⁵⁵ Price-fixers continue to make a skewed cost-benefits calculus (if they are, in fact, engaging in any calculus) that leads them to believe that they are better off entering a cartel than not.

The behavioral economics literature suggests that situational and dispositional factors may account for such irrational behavior. Optimal deterrence theory assumes that financial gains should motivate, and financial penalties should deter, self-interested rational agents' behavior. But some executives refrain from price-fixing for ethical concerns, fear of social disapproval from their peers, or other informal norms.²⁵⁶ Thus

the agencies to calculate the maximum fine for corporations or individuals as twice the loss suffered by victims or twice the gain realized by the offender).

²⁵¹ Antitrust Amendments Act of 1990, Pub. L. No. 101-588, §4, 104 Stat. 2879, 2880 (codified as amended at 15 U.S.C. §§1-3 (2004)); *see also* S. Rep. No. 101-287, as reprinted in 1990 U.S.C.C.A.N. 4108 (May 14, 1990) (increasing the maximum criminal fines to \$10 million for corporations and \$350,000 for individuals).

²⁵² Antitrust Criminal Penalty Enhancement and Reform Act of 2004, Pub. L. No. 108-237, §215, 118 Stat. 665, 668 (codified as amended at 15 U.S.C. §§1-3 (2006)) (increasing the maximum fines for corporations to \$100 million, the maximum fine for individuals to \$1 million, and the maximum incarceration period to ten years).

²⁵³ For an argument that the U.S. has not yet achieved optimal deterrence, *see* Stucke, *supra* note 28.

²⁵⁴ OECD, *Hard-Core Cartels: Third Report on the Implementation of the 1998 Recommendation 15* (2005), *available at* <http://www.oecd.org/dataoecd/30/2/36600303.pdf>.

²⁵⁵ Stucke, *supra* note 28; Maurice E. Stucke, *Morality and Antitrust*, 2006 COLUM. BUS. L. REV. 443, 470-74 (2006).

²⁵⁶ Stucke, *supra* note 28; Paul H. Robinson, *Why Does the Criminal Law Care What the Layperson Thinks Is Just? Coercive Versus Normative Crime Control*, 86 VA. L. REV.

informal norms can have a powerful influence on behavior. One cannot assume that by criminalizing conduct policymakers necessarily inculcate these moral and social concerns.²⁵⁷ In developing the informal norms against price-fixing by accentuating the conduct's immoral and unethical content, policymakers may be able to better deter cartels.²⁵⁸

Another factor is the optimism or overconfidence bias discussed above: just as individuals overestimate their likelihood of achieving efficiencies or gaining successful entry, price-fixers may also overvalue their likelihood of escaping prosecution. Yet another factor is the availability heuristic, under which the "perceived probability of detection depend[s] on not only how frequently offenses are detected but also on how salient or vivid the method of detection is."²⁵⁹ If potential cartel participants have little exposure to recent prosecutions, they are apt to undervalue the likelihood of being caught. Some antitrust lawyers therefore find it highly effective to include in antitrust compliance programs a former executive involved in a price-fixing scandal.²⁶⁰

Ultimately the economic model must account for social policies that can influence the executives' decision to engage in price-fixing, including the perceived probability of detection.²⁶¹ Thus, the optimal means to deter

1839, 1861-62 (2000); H.G. Grasmick & D.E. Green, *Legal Punishment, Social Disapproval and Internalization as Inhibitors of Illegal Behavior*, 71 J. CRIM L. & CRIMINOLOGY 325 (1980).

²⁵⁷ C. Beaton-Wells & F. Haines, *Making Cartel Conduct Criminal: A Case Study of Ambiguity in Controlling Business Behavior*, 42 AUSTL. & N.Z. J. CRIMINOLOGY 218 (2009).

²⁵⁸ Stucke, *supra* note 255, at 505-23 (discussing how antitrust agencies can promote moral norms to better deter antitrust crimes).

²⁵⁹ McAdams & Ulen, *supra* note 16.

²⁶⁰ ABA SECTION OF ANTITRUST LAW, ANTITRUST COMPLIANCE: PERSPECTIVES AND RESOURCES FOR CORPORATE COUNSELORS 34 (2005). Besides these dispositional factors, a host of situational factors also may be at work. *See* Stucke, *supra* note 28, at 15-42 (discussing the situational factors and the extent to which they may influence cartel formation).

²⁶¹ ICN Working Group on Cartels, *supra* note 243, at 54 (recognizing that while the

cartels will involve a pluralism of mechanisms, including criminal and civil penalties, structural means (improved merger review), and developing informal norms that highlight price-fixing's ethical and moral implications.

IV. RECOMMENDATIONS RELATED TO THE PRACTICAL APPLICATION OF BEHAVIORAL ECONOMICS GOING FORWARD

The behavioral economics literature, as Part III discusses, can help the antitrust agencies explore which of their assumptions premised on neoclassical theory are sheltering anticompetitive conduct and increasing the costs of false negatives. This Part proposes several actions that the agencies can undertake to advance behavioral antitrust. As a first principle behavioral economics can instill in antitrust policymakers the importance of nuance and not being tethered to particular mainstream modes of thinking when factual reality does not square with economic orthodoxy.

A. To be Applied Well, Behavioral Antitrust Requires More Empirical Work

Some skeptics will continue to question whether irrational conduct has any implications for antitrust analysis. But whatever its label, behavioral economics at its core is empirical. The literature first identifies normative assumptions underlying the prevalent economic theories; second, empirically tests these assumptions and considers alternative explanations; and third, uses the anomalies to create new theories that are further empirically tested.

We believe that behavioral economics identifies enough holes in the simplistic rationality assumption to fortify the argument for more empirical work in antitrust policy. One need not be a behavioral economist to agree. Commissioner Kovacic, among others, has long called for more

calculation method of optimal deterrence theory “is widely considered to be correct, there are some doubts as to its practicability (difficulties of calculation and proof) and some concerns about the companies’ rights being impaired if other criteria are completely disregarded in setting the fines”).

empirically-driven research policies, noting how investments in knowledge “have long-term capital qualities”, and help ensure that the agency stays abreast of important developments in economic theory, empirical study, and legal analysis,” is a crucial element of effective case selection, “increases the agency's ability to attempt more complex and demanding matters, helps the agency ground its cases in the best possible conceptual and empirical foundations, and provides assurance that the agency will not find itself trapped in the wrong analytical model.”²⁶²

Competition policy’s greatest failing has been its incomplete understanding of how competition works in particular markets in particular communities at particular time periods and the interplay among private institutions, government institutions, and informal social, ethical, and moral norms. By undertaking more empirical research, competition authorities will understand better the competitive dynamics of particular markets and how legal and informal norms interact to influence individual behavior and competition generally.

Competition authorities can use many inter-disciplinary avenues to improve their understanding of market dynamics across different industries. This Article addresses two avenues: post-merger and post-conviction review.²⁶³

1. Post-Merger Review

To illustrate the benefits of post-merger review, we will use a merger between two nearby non-profit hospitals in California’s Oakland-Alameda County region.²⁶⁴ The state of California sought to enjoin this hospital

²⁶² William E. Kovacic, *Rating the Competition Agencies: What Constitutes Good Performance?*, 16 GEO. MASON L. REV. 903, 922 (2009).

²⁶³ See Stucke, *supra* note 114 (discussing in greater detail the need for such empirically-driven research, its benefits, and several possible concerns of these proposals); Maurice E. Stucke, *New Antitrust Realism*, GCP (Global Competition Policy) MAG., Jan. 2009 (same).

²⁶⁴ *California v. Sutter Health System*, 130 F. Supp. 2d 1109, 1130 (N.D. Cal. 2001).

merger under the federal antitrust laws. Geographic market definition was crucial.²⁶⁵ The district court was confronted with the issue of where patients could practicably turn for acute hospital inpatient services. If one defined the geographic market broadly, then one would assume that the merged hospitals would face stiff competition from over twenty hospitals in the San Francisco and East Bay areas. With conflicting economic expert testimony, the district court not surprisingly followed the approach by other courts that relied on the Elzinga-Hogarty economic analysis for defining the relevant geographic market. As the district court stated:

the first prong of the Elzinga-Hogarty test requires a determination of the merging hospitals' 'service area,' that area from which they attract their patients. In the second step, two measurements are taken of the flow of patients into and out of the test market. The Little In From Outside ("LIFO") measurement calculates the percentage of patients who reside inside the test market that are admitted to those hospitals located within the test market. A LIFO of 100% would indicate that all hospital admittees who are residents of the test market are admitted to hospitals located within the test market. The Little Out From Inside ("LOFI") measurement calculates the percentage of the test market's hospitals' patients who reside in the test market. A LOFI of 100% would indicate that all hospital patients admitted to hospitals in the test market are residents of the test market. A LIFO and LOFI of 75% is considered a weak indication of the existence of a market and a LIFO and LOFI of 90% is considered a strong indication of a market.²⁶⁶

The plaintiff alleged an Inner East Bay geographic market. Plaintiff's economic expert showed that 85 percent of all patients admitted to hospitals in the proposed Inner East Bay market resided in the Inner East Bay; the remaining 15 percent of patients resided outside the Inner East Bay. Similarly, 85 percent of patients who resided in the Inner East Bay were

²⁶⁵ The parties agreed that the relevant product market was the cluster of services comprising acute inpatient care, including the services provided by Kaiser hospitals. *Sutter Health System*, 130 F. Supp. 2d at 1119.

²⁶⁶ *Sutter Health Sys.*, 130 F. Supp. 2d at 1120-21 (internal quotation and citation omitted).

admitted to hospitals inside this area, with the remaining 15 percent sought hospital treatment outside this area. The state of California argued that the 85% LIFO and LOFI results, along with its other evidence, were sufficient to prove geographic market. The district court disagreed. The state's 85% results failed to meet "the preferred 90% threshold" of LIFO and LOFI calculations that represent "a strong showing that a market exists."²⁶⁷

The district court also believed that big buyers (namely the health plans) when faced with a price increase had numerous mechanisms to discipline the hospitals. The merging parties' hospitals were approximately 2½ miles apart. The State of California argued that many patients, because of traffic and loyalty considerations to their doctors, would be unwilling to travel east through the Caldecott Tunnel and west across the Bay Bridge to these other hospitals. The court disagreed. The health plan providers could keep hospital prices low by "steering" patients to lower cost health care providers. Hospitals had high fixed costs in terms of the physical plant, equipment and maintaining a highly skilled staff, and consequently would be sensitive to such declines in patient volume. So if the hospitals post-merger tried to increase prices for acute inpatient care, then the rational profit-maximizing health plans would steer enough members away from the hospitals to defeat the exercise of market power. Indeed, the president and CEO of the second largest health plan in the East Bay downplayed the possibility of a price increase by the hospitals post-merger, in part due to the health plans' ability to steer patients to lower cost facilities.

The district court also expressed greater concern over the costs of false positives (than false negatives), fearing that its "judicial intervention in a competitive situation can itself upset the balance of market force, bringing about the very ills the antitrust laws were meant to prevent.' This appears to

²⁶⁷ *Sutter Health Sys.*, 130 F. Supp. 2d at 1124.

have even more force in an industry, such as healthcare, experiencing significant and profound changes.”²⁶⁸ (The court also held that defendants successfully established a failing company defense.) Accordingly, the district court permitted the merger to go through.

So what happened post-merger? Did the merged hospital try to raise prices at one or both hospitals? If so, did the powerful health plans, as the defendants argued and as the health plan CEO and district court predicted, steer customers to the other Bay Area hospitals and defeat the exercise of market power? Often, the antitrust agencies don’t know the answer to these questions. The competition agencies devote considerable resources investigating ex ante the merger. The agencies’ lawyers and economists work very hard to predict the merger’s likely competitive effects. But they often examine only half of the picture, namely the state of competition several years before the merger. Indeed, the antitrust agencies could simply abandon hospital mergers where the LIFO and LOFI figures fall below 90 percent or big buyers could steer patients to other hospitals.

After the FTC, DOJ, and California’s Attorney General lost six straight hospital merger challenges in the 1990s, the FTC announced its Hospital Merger Retrospectives Project.²⁶⁹ To better understand hospital competition and the effects of hospital mergers and update its prior assumptions about the consequences of particular transactions and the nature of competitive forces in health care, the FTC reviewed several consummated hospital mergers, including a retrospective study of the merger between the Bay Area hospitals.²⁷⁰ The FTC used detailed claims

²⁶⁸ *Id.* at 1137, quoting *FTC v. Tenet Health Care Corp.*, 186 F.3d 1045, 1055 (8th Cir. 1999).

²⁶⁹ Deborah Haas-Wilson & Christopher Garmon, *Two Hospital Mergers on Chicago’s North Shore: A Retrospective Study*, Working Paper No. 294 (Jan. 2009), <http://www.ftc.gov/be/workpapers/wp294.pdf>.

²⁷⁰ Steven Tenn, *The Price Effects of Hospital Mergers: A Case Study of the Sutter-*

data from three large health insurers to compare the post-merger price change for the merging hospitals to a set of control group hospitals.

So what happened post-merger? Not only did prices increase post merger, but the price increase was among the largest of any comparable hospital in California. The merged entity significantly raised prices for one of the merging hospitals between 23.2% and 50.4% relative to the control group.²⁷¹

But the FTC's findings raise larger unanswered questions: faced with this steep price increase, did the health plan providers try to steer patients to other hospitals? Did patients resist? As for the CEO who confidently predicted his company's ability to defeat any price increase, what went wrong?

Rather than continue to rely on empirically-unsupported assumptions, now is the time for the antitrust agencies to review systematically what actually happens post-merger. The agencies should institute specific mechanisms to test empirically the following key assumptions underlying the Horizontal Merger Guidelines: (i) anticompetitive effects are likely to occur only in highly concentrated (not moderately concentrated to unconcentrated) markets; (ii) even in highly concentrated markets, anticompetitive unilateral or coordinated effects are unlikely, absent certain economic conditions; (iii) anticompetitive effects are unlikely, absent high

Summit Transaction, FTC Bureau of Econ. Working Paper No. 293 (Nov. 2008), <http://www.ftc.gov/be/workpapers/wp293.pdf>; see also Haas-Wilson & Garmon, *supra* note ; Aileen Thompson, *The Effect of Hospital Mergers on Inpatient Prices: A Case Study of the New Hanover-Cape Fear Transaction*, FTC Bureau of Econ. Working Paper No. 295 (Jan. 2009), <http://www.ftc.gov/be/workpapers/wp295.pdf>.

²⁷¹ The price increase at the other hospital was not statistically different from the control group for any of the insurers. Tenn, *supra* note 270, at 20. One explanation Tenn provided for this asymmetry was that as a major provider of hospital services to commercial patients in the Oakland-Berkeley area, Alta Bates was a significant price constraint on Summit. However, Summit may have been less of a constraint on Alta Bates' price since Summit was a relatively minor provider of hospital services to commercial patients. *Id.* at 22.

entry barriers; and (iv) many companies merge to generate significant efficiencies.

First, the federal antitrust agencies should conduct a post-merger analysis of any merger subject to an extended Second Request review in which the agency: (i) took no enforcement action; (ii) permitted the merger in part to be consummated pursuant to a consent decree; or (iii) challenged the merger in court, but lost. The antitrust agency two to five years after the merger was consummated should examine the state of competition in that industry, including pricing levels and non-price components such as innovation, productivity, services, and quality, to the extent observable, and test some of their predictions when the originally reviewed the merger.

When ending a merger investigation, the agencies typically provide reasons in a closing memorandum why the merger was unlikely to substantially lessen competition. The closing memorandum consequently offers testable predictions (such as whether an entrant or big buyer would defeat the exercise of market power or consumers would shift to another product or geographic area).

To mitigate the burden on the agencies and market participants, the agencies can develop a two-stage post-merger review. In the first stage, the agency staff would conduct a quick-look review of competition in that industry. The staff would interview a small but representative sample of industry participants (for example in a merger involving household consumer products, the staff would interview buyers from food, drug, and mass merchandiser retailers) about the status of competition and request from the merged entity a limited quantity of data, including relevant price data. If the quick-look review suggests that competition significantly diminished, the agencies would engage in a more in-depth review and analyze whether they had predicted correctly.

The agency would report whether other variables, besides the merger, might explain the increase in prices or reduction in innovation, productivity, services, and quality. For those companies identified as potential entrants in the original merger review, the reviewing agency would analyze, based on its interviews with these identified entrants, why they chose not to enter, or if they did enter, why they were ineffectual. The reviewing agency would describe which, if any, of the merging parties' efficiencies it could verify post-merger, the magnitude of the efficiencies, and the extent consumers directly benefited from such efficiencies.

The federal antitrust agencies would also summarize their findings for the public, and describe annually what specific actions, if any, they are undertaking with respect to this data, including how they are incorporating the findings from this data in their merger review.

Second, the Obama administration should request, and Congress should provide, the DOJ with subpoena authority for non-public information to conduct such post-merger review for its industries. The DOJ's Antitrust Division appears to be more limited in conducting such general post-merger review. Its subpoena authority in civil investigations comes from the Antitrust Civil Process Act,²⁷² which limits an antitrust investigation to premerger activities or suspected antitrust violations.²⁷³ The FTC, in contrast, has broader statutory authority to gather information on the effects of its enforcement measures.²⁷⁴ This subpoena authority should be sufficiently broad to enable the DOJ to test (and eliminate) other explanations as to why competition (which includes important parameters beyond price) increased or diminished post-merger. The federal antitrust agencies should also coordinate with other federal agencies in sharing such

²⁷² 15 U.S.C. §§ 1311–1314.

²⁷³ 15 U.S.C. § 1311(c).

²⁷⁴ See 15 U.S.C. § 46.

information, subject to the data producer's ability to challenge the dissemination of its commercially sensitive information.

Third, any publicly held company that seeks to rely on an efficiency defense before the antitrust agencies and/or the courts should be required to publicly report its claimed efficiencies in its filings with the U.S. Securities and Exchange Commission. (If such disclosure would divulge a trade secret or other confidential research, development, or commercial information that would be ordinarily protected from public disclosure under Fed. R. Civ. P. 26(c), then the antitrust agencies may excuse the public disclosure of such information.) For each year post-merger (for the period that it claims the efficiencies will be realized), the company should report the actual amount of efficiencies realized versus the projected amount. This should temper the company executives from inflating the claimed efficiencies, and hold them accountable to the shareholders for pursuing a growth-by-acquisition strategy, while informing the agencies on those efficiencies for particular industries that are more likely to be cognizable and substantial.

The FTC's recent hospital merger retrospectives have been very helpful. But there does not exist today a built-in mechanism for routine post-merger review across agencies. Empirically testing and refining the neoclassical economic theories underlying much of Merger Guidelines have several benefits. Such empirical work promotes effective learning by creating feedback about the relation between the situational conditions and the appropriate response. By instituting a regular and systematic review of close-call mergers, the agencies reduce the likelihood of false negatives and positives in merger review, promote more effective antitrust enforcement, increase transparency of the merger review process, and make themselves more accountable for their decisions. An empirically-driven competition

policy may also temper the claims, which have also increased over the past quarter century, of partisanship in antitrust enforcement.

2. Post-Conviction Review

To better understand why executives engage in price-fixing and to advance the empirical research on coordinated effects, the agencies should report two to five years after prosecuting a cartel, the state of competition in that industry, as described above. With criminal cartel prosecutions, the DOJ typically seeks fines and incarceration; whether these measures were sufficient to restore competition and deter recidivism should be assessed.

After securing its criminal convictions, the DOJ by itself or through a pilot program with social scientists should interview the price-fixers and publicly report the following: How were the cartels (including those with many members) formed and enforced? Did they act as many profit-maximizer game theories predict, or were they more trusting and cooperative than these theories' predicted outcome?²⁷⁵ If so, why? As the number of conspirators increased, were there other specific factors that enabled them to collude? Why did certain companies repeatedly violate the antitrust laws? What steps did the company take after its earlier conviction to increase antitrust compliance, and why were they unsuccessful?

The DOJ also should make available a computerized database identifying all civil and criminal antitrust consent decrees, pleas, or litigated actions involving cartel activity under section 1 of the Sherman Act. The database should include certain industry characteristics, such as: (i) the number of conspirators (and best estimate of their market shares); (ii) the length of conspiracy; (iii) the product or services market in which collusion occurred; (iv) the number of competitors (and their market share) who were not formerly alleged to be part of the conspiracy; (v) the number of entrants

²⁷⁵ Christopher R. Leslie, *Trust, Distrust, and Antitrust*, 82 TEX. L. REV. 515 (2004).

(and their market shares) during the period of the conspiracy; and (vi) the nature of the conspiracy.²⁷⁶ This data can help those in academia, private practice and the antitrust agencies to better understand collusion, and further develop screening mechanisms to identify industries more susceptible to collusion.²⁷⁷

One cannot assume that such empirical testing and learning will arise independently within competition policy. The Supreme Court and lower courts cannot undertake such empirical testing as their view is limited to the evidence the parties supply. Nor can academia and the private bar fulfill this mission. Compiling such data can be often costly and non-public. In undertaking this empirical testing and learning, the competition authorities can enrich the marketplace of ideas. The data lowers the search costs for academics and increases transparency.

B. Possibilities for Incorporating Behavioral Economics into Existing Antitrust Doctrine

Besides the empirical evidence needed to improve the predictive capabilities of antitrust's economic theories, is there a role for behavioral economics to play in antitrust analysis? Even with further empirical work, behavioral economics may not ultimately supply a single organizing principle. It is unlikely that behavioral economics will yield a single concentration measure (like the HHI) to predict which mergers may substantially lessen competition. Nor will behavioral economics offer a rule

²⁷⁶ Keeping the data consistent can be difficult. Market definition at times is problematic. Identifying conspirators may depend on the sufficiency of evidence and burden of proof, which differs in the civil and criminal context. Other firms could have been involved in the conspiracy, but the evidence was insufficient to prosecute. The criteria should be whether a criminal or civil complaint was brought against the firm (and whether the matter was criminal or civil). Granted, the data at times may underreport the number of firms involved in the cartel, but having data with such caveats is better than no data.

²⁷⁷ R Abrantes-Metz & P Bajari, *Screens for Conspiracies and Their Multiple Applications*, 24 ANTITRUST 66 (Fall 2009) (describing screening mechanisms to detect cartels).

at a broad level of generality that dictates when unilateral conduct crosses the debated lines from beneficial to benign to anticompetitive.

But this is no reason to ignore the behavioral economics literature. Life is messier than the Chicago School's unifying vision of self-correcting markets filled with rational profit-maximizing agents that pursue their economic self-interest. Relying on market fundamentalism only will lead to future market crises and government bailouts. Along the way to the next financial crisis, there will be cases where the Chicago School's rigid assumptions (which, in turn, supply the models' predictive capabilities) fail to explain or predict the market behavior. Behavioral economics can better explain behavior that the Chicago School ignores or marginalizes.

So even without additional empirical work, behavioral economics may play a role in the agencies' analysis in (i) instructing the courts and agencies to reevaluate hard cases where, on the one hand, neoclassical analysis suggests that the conduct is not or should not be anticompetitive but sufficient evidence suggest the contrary; (ii) informing the competition agencies whether they are indeed fulfilling their mission; and (iii) providing insights into possible applications of Section 5 of the FTC Act.

1. Use of "Real World" Evidence That Is Not Explainable by Neoclassical Economic Theory

At times neoclassical economic theory cannot be easily reconciled with evidence of the parties' behavior, intent, motives, or post-merger plans.²⁷⁸ In some instances, economic theory suggests an oligopoly's ability to tacitly collude (for example to successfully implement a predatory pricing scheme) is impossible despite the evidence of anticompetitive intent and the fact that

²⁷⁸ See Leslie, *supra* note 33, at 318-38 (discussing evidence of antitrust violations, which were implausible under neoclassical economic theory, for predatory pricing, price-fixing, group boycotts of suppliers, and conspiracies to conceal an invalid patent).

the companies for 40 to 50 years were able to raise prices twice annually like clockwork.²⁷⁹

In other instances, the Chicago School economic theories suggest that, absent inter-brand market power, a manufacturer cannot raise the price for its aftermarket parts or services. Rational consumers considering the purchase of the equipment “will inevitably factor into [their] purchasing decision the expected cost of aftermarket support.”²⁸⁰ As the Court’s *Kodak* decision reflects, economic theory may be inconsistent with the economic reality, with evidence of increased prices and excluded competition.²⁸¹ The Chicago School’s beliefs, some skeptics may say, were raised in Justice Scalia’s dissent in *Kodak*. But it is questionable whether the current Court would reach the same outcome in *Kodak*, especially if they, as Professor Hovenkamp and Justice Scalia, “believe that markets generally work well when left alone, [and] intervention is justified only in the relatively few cases where the judiciary can fix the problem more reliably, more cheaply, or more quickly than the market can fix itself.”²⁸²

Chairman Leibowitz’s and Commissioner Rosch’s concurring statements in the *Ovation* case provide another illustration of the extent to

²⁷⁹ *Brooke Group*, 509 U.S. at 257 (Stevens, J. dissenting).

²⁸⁰ *Eastman Kodak Co. v. Image Technical Serv., Inc.*, 504 U.S. 451, 495 (1992) (Scalia, J., dissenting).

²⁸¹ In *Kodak*, there was no actual evidence that higher service prices did (or would likely) lead to a disastrous drop in equipment sales. Kodak’s service prices increased. But there was no evidence of Kodak’s equipment sales decreasing as a result. Contrary to Kodak’s theoretical claim, there was no evidence that Kodak actually priced its equipment at below-market prices and its services at supra-competitive prices for an overall competitive price. Also contrary to defendant’s theoretical claim, the information costs were significant. Customers had to inform themselves of the total cost at the time of purchase. Such accurate lifecycle pricing of complex, durable equipment is difficult, costly, and customer-specific. Contrary to defendant’s theoretical claim, Kodak’s competitors would not necessarily provide this lifecycle information. Such information was costly for competitors to obtain, and even if Kodak’s competitors had the lifecycle information, it may have been more profitable for the competitors to follow Kodak’s lead and reap supra-competitive prices in their own service and parts market. *Id.* at 474 n.21.

²⁸² Herbert Hovenkamp, *THE ANTITRUST ENTERPRISE: PRINCIPLE AND EXECUTION* 124 (Harvard 2005).

which documents reflecting the parties' intentions and incentives can affect merger analysis.²⁸³

Ovation Pharmaceuticals, Inc. acquired two drugs to treat patent ductus arteriosus ("PDA"), a serious congenital heart defect in newborns. First, Ovation acquired from Merck the drug Indocin. Several months later, Ovation acquired from Abbott Laboratories the U.S. rights to the drug NeoProfen.²⁸⁴ After acquiring NeoProfen, Ovation raised the price it charged hospitals for Indocin by nearly 1,300 percent. In December 2008, the FTC challenged under Section 7 of the Clayton Act Ovation's acquisition of NeoProfen as a merger to monopoly in a market for drugs used to treat PDA. Although Commissioner Rosch voted in favor of the Section 7 challenge, he argued in his concurrence that Ovation's earlier acquisition of Indocin was also subject to challenge under Section 7.

Here again the actual evidence is hard to reconcile with the Chicago School's neoclassical economic theories. Specifically Indocin for many years was the only FDA-approved pharmaceutical treatment for PDA. Given Indocin's market position, Merck (its original owner) could have charged a monopoly price for its drug. Indeed under the Court's dicta in *Trinko*, Merck's charging a monopoly price would serve "an important element of the free-market system," in that monopoly pricing serves as an inducement to "attract[] 'business acumen' in the first place" and engage in "risk taking that produces innovation and economic growth."²⁸⁵

²⁸³ Concurring Statement of Comm'r J. Thomas Rosch, *FTC v. Ovation Pharms., Inc.* (Dec. 16, 2008), available at <http://www.ftc.gov/os/caselist/0810156/081216ovationroschstmt.pdf> (hereinafter "Rosch Concurrence"); Concurring Statement of Comm'r Jon Leibowitz, *FTC v. Ovation Pharms., Inc.* (Dec. 16, 2008), available at <http://www.ftc.gov/os/caselist/0810156/081216ovationleibowitzstmt.pdf> ("Leibowitz Concurrence").

²⁸⁴ *FTC v. Ovation Pharms.*, 0:2008cv06379 (D. Minn. filed Dec. 16, 2008), available at <http://www.ftc.gov/os/caselist/0810156/081216ovationcmpt.pdf>.

²⁸⁵ *Trinko*, 540 U.S. at 407.

So one is left with two monopolists, each presumably a rational profit-maximizer, choosing dramatically different pricing policies for a patented drug. Why didn't Merck, a large sophisticated company, sell Indocin at the monopoly price (under \$30 per vial at the time of the acquisition)? Perhaps reputational effects, said Commissioner Rosch. If Merck sold a product used to treat premature babies at a monopoly price, "that could damage its reputation and its sales of those more profitable products."²⁸⁶ It could also be that ethics and conscience had an impact on Merck's pricing decision. But in a world of rational profit-maximizers, consumers would applaud, not condemn, Merck. Charging parents whose babies were born with this potentially life-threatening congenital heart defect the monopoly price would signal others to invest in such innovative drugs. Instead, reality suggests that consumers and the Chicago School economist differ at times in their perception of what is fair.²⁸⁷

But that dynamic changed when Ovation acquired Indocin from Merck. Commissioner Rosch found "reason to believe that the sale of Indocin to Ovation had the effect of eliminating the reputational constraints on Merck that existed prior to the sale."²⁸⁸ Specifically, Ovation lacked Merck's "large product portfolio," so Ovation "arguably was not concerned, as Merck had been, that the sale of Indocin at a monopoly price would damage its reputation and sales of more profitable products."²⁸⁹ Thus, because Merck did not charge a monopoly price for its drug used to treat premature babies, Merck "arguably would not have the incentive to acquire another treatment that might prevent it from pricing Indocin at a monopoly

²⁸⁶ Rosch Concurrence, *supra* note 231, at 1.

²⁸⁷ See, e.g., Daniel Kahneman et al., *Fairness as a Constraint on Profit Seeking: Entitlements in the Market*, in *ADVANCES IN BEHAVIORAL ECONOMICS*, *supra* note 34, at 252, 264.

²⁸⁸ Rosch Concurrence, *supra* note 283, at 1.

²⁸⁹ *Id.*

price.”²⁹⁰ Because there was evidence that the transaction substituted “Ovation, a firm that had an incentive to protect its ability to engage in monopoly pricing, for Merck, which lacked the same incentive” and that “Merck had no incentive to acquire NeoProfen, but Ovation had an incentive to do so in order to maintain its monopoly pricing in the PDA market,” Commissioner Rosch, joined by Chairman Leibowitz, stated that he would have challenged Ovation’s first acquisition as well.²⁹¹

More generally, it may be the case that behavioral economics finds its best fit in merger review, which is perhaps the closest antitrust enforcers come to in engaging in a traditional regulatory process.²⁹² The expert agencies rely on a routine (including the presumptions discussed in Part III) to winnow their review of thousands of merger filings to a small percentage. For these mergers, the agencies engage in highly fact-specific inquiries; their conclusions in the form of closing statements and/or a consent decree are case specific and do not constitute binding precedent; and the review of the proposed merger is done *ex ante* rather than *ex post*.

The merger review process offers the agencies with the benefit of an extensive factual record, including investigational submissions of the

²⁹⁰ *Id.*

²⁹¹ *Id.*; Leibowitz Concurrence, *supra* note 283, at 1 (noting that Merck kept prices low “perhaps because it was worried that a significant price increase would have harmed its reputation” and that “[f]or that reason, I would have supported the approach proposed by Commissioner Rosch”); *see also* Interview with J. Thomas Rosch, Commissioner, Federal Trade Comm’n, 23 Antitrust ABA 32, 40 (Spring 2009), *available at* <http://www.ftc.gov/speeches/rosch/090126abainterview.PDF> (noting that the *Ovation* statement involved “the notion that economic theory should increasingly focus on incentives rather than on market structure”).

²⁹² AMC Report, *supra* note 162, at 51 (noting how merger enforcement “has shifted in emphasis from a litigation-based system focused on judicial review of consummated deals to an administrative regime in which [FTC and DOJ] review mergers above a certain size prior to consummation.”); Spencer Weber Waller, *Prosecution by Regulation: The Changing Nature of Antitrust Enforcement*, 77 OR. L. REV. 1383, 1400 (1998) (discussing antitrust’s shift from a prosecutorial to regulatory model and with regard to HSR merger review how “regulation and administrative law-making have replaced the courts as the source for the creation and enforcement of antitrust law”).

parties, interviews with customers and competitors, and the parties' documents. At times neoclassical theory cannot explain the evidence of the merging parties' behavior, intent, motives, or post-merger plans. In this vein, the recent changes to the Merger Guidelines open the door for greater consideration of "direct evidence" of the type that Chairman Leibowitz and Commissioner Rosch credited in *Ovation*. The revised Merger Guidelines, for example, explain that merger review is a "fact-specific process through which the Agencies . . . apply a range of analytical tools to the reasonably available and reliable evidence to evaluate competitive concerns" and will evaluate "several categories and sources of evidence," including the parties' documents and testimony.²⁹³ And unlike the prior Guidelines, the revised Merger Guidelines enumerate several categories of such direct evidence.

The fact that the Guidelines now explicitly recognize that such evidence is entitled to weight on par with economic modeling may provide both the agencies as well as the parties with a structure for evaluating evidence in light of the insights that behavioral economics offers. As Commissioner Rosch has observed, this, in turn, could allow the agencies to more carefully scrutinize the close cases that neoclassical thinking predicts should be pro-competitive or competitively neutral, but where actual evidence of how the firms do and will behave show otherwise.²⁹⁴ Behavioral economics thus can fill in the analysis and explain the real-world evidence when neoclassical economic theory cannot.

2. A Better Informed Competition Advocate

The federal antitrust agencies are well suited to consider how the behavioral economics literature can inform antitrust analysis.

First, at a macro institutional level, the agencies can draw on the behavioral insights they have gained outside of federal civil antitrust law to

²⁹³ Horizontal Merger Guidelines, *supra* note 32, at §§ 1.0, 2.1.1, 2.2.

²⁹⁴ Rosch, Managing Irrationality, *supra* note 26, at 9.

better inform their competition missions. To this end, the DOJ can use its expertise in prosecuting white-collar crimes generally (and price-fixing conspiracies in particular) to inquire why executives, with so much to lose, fix prices, and why cartels are more durable and its members more trustful than neoclassical economic theory predicts.

Similarly, the FTC can marry insights gained from its Bureau of Consumer Protection about the types of conduct that are likely to deceive consumers with insights from its Bureau of Economics about when such deception harms competition (as opposed to individual harm that does not significantly impair competition). The alleged competitive harm in several recent Commission cases – *N-Data*,²⁹⁵ *Rambus*,²⁹⁶ and *Intel*²⁹⁷ – was premised, in part, on deception. More generally, the FTC can explore ways that it can bring its consumer protection mission in line with a goal of creating and preserving consumer choice (as opposed to narrowly focusing on seller behavior through mandated disclosures or anti-fraud laws).²⁹⁸ A goal of protecting consumer choice requires enacting policies that, from the consumer’s perspective, remove barriers to optimal decision-making; removing those barriers, in turn, depends on analyzing how consumers make decisions in the first place. Moreover, a focus on consumer choice is broad enough to encompass the insights from the FTC’s ongoing studies into behavioral economics, but not so broad as to necessarily displace the neoclassical emphasis on providing consumers with full-decision-making authority.

²⁹⁵ In re Negotiated Data Solutions, LLC, Dkt. No. 051-0094 (2007) (Complaint), <http://www.ftc.gov/os/caselist/0510094/080923ndscomplaint.pdf>.

²⁹⁶ In re Rambus, FTC Dkt. No. 9302 (2006), <http://www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf>, *rev'd* Rambus Inc. v. FTC, 522 F.3d 456, 468 (D.C. Cir. 2008).

²⁹⁷ In re Intel Corp., FTC Dkt. No. 9341 (Dec. 16, 2009) (Complaint), <http://www.ftc.gov/os/adjpro/d9341/091216intelcmpt.pdf>.

²⁹⁸ See, e.g., Neil W. Averitt & Robert H. Lande, *Using the “Consumer Choice” Approach to Antitrust Law*, 74 ANTITRUST L.J. 175 (2007).

Second, the FTC and DOJ have developed substantive areas of expertise in certain complex and important industries, including defense, media, healthcare, petroleum, and pharmaceuticals. At times, the agencies will observe behavior in these industries that often lead to anticompetitive effects--even though rational choice theory may predict otherwise. The agencies can challenge these practices as presumptively illegal under a truncated rule-of-reason/"inherently suspect" analysis.²⁹⁹ The FTC, in particular, has recently signaled an interest in applying the "inherently suspect" test to specific practices.³⁰⁰ This framework would reduce the cost of error under the Court's per se rule, without imposing the high litigation costs and risk of false positives and negatives under the rule of reason.³⁰¹

Third, from a procedural standpoint, the DOJ and FTC also have the benefit of an extensive investigational process that allows them to evaluate on the basis of the parties' documents, investigational hearings, and economic analysis, whether and to what extent harm to competition is occurring. In post-merger reviews, for example, the agencies can investigate whether rational profit-maximizers did indeed enter the markets (and if not why not). Private antitrust plaintiffs typically do not possess

²⁹⁹ See, e.g., *FTC v. Indiana Fed'n of Dentists*, 476 U.S. 447 (1986); *Polygram Holding, Inc. v. FTC*, 416 F.3d 29 (D.C. Cir. 2005); *N. Tex. Spec. Physicians v. FTC*, 528 F.3d 346, 370 (5th Cir. 2008).

³⁰⁰ See, e.g., *In re Realcomp II Ltd.*, No. 9320, 2009 FTC LEXIS 250, at *39 (F.T.C. Oct. 30, 2009) (finding certain practices of multistate listing service were "inherently suspect" and that the plaintiff did not come forward with evidence to carry its burden and explain why those practices should be legal); see generally Geoffrey D. Oliver, *Of Tenors, Real Estate Brokers and Golf Clubs: A Quick Look at Truncated Rule of Reason Analysis, in Antitrust*, Spring 2010, at 40 (providing overview of "inherently suspect" analysis).

³⁰¹ As Professors Tor and Rinner's recent work on behavioral antitrust shows, executives may engage in resale price maintenance when irrational. Tor & Rinner, *supra* note 28. Before *Leegin* and *Sylvania*, manufacturers were unlikely to swim the narrow channel of *Colgate* unless they had a compelling pro-competitive justification for their action. Thus, one benefit of moving RPM's legal standard from rule-of-reason to a quick-look standard is that the presumption of illegality would require executives to evaluate more closely (and justify to their counsel) why they want to institute RPM and be able to substantiate why the pro-competitive benefits actually outweigh the anticompetitive effects.

such extensive information, which at times is non-public and costly to collect. Moreover, when it so chooses, the FTC can pursue administrative litigation and issue a ruling in the first instance that not only has the force of law (subject to federal appellate review), but provides a roadmap for federal appellate courts to consider in their review.

Fourth, from a policy standpoint, the DOJ and FTC can regularly assess whether the agency remedies are indeed effective – a process that the FTC has engaged on both the antitrust³⁰² and consumer protection side.³⁰³ Other agencies at times seek to promulgate rules to protect the consumer that are anti-competitive. At times firms compete to exploit or help bounded rational consumers. Distinguishing between the two can be challenging. So the federal antitrust agencies, by understanding behavioral economics, can better understand when firms are providing consumers commitment devices to deal with their bounded willpower (e.g., Christmas savings club accounts) or competing in better ways to simply exploit them. Antitrust authorities can offer a more nuanced and powerful message that accounts for consumers' interest *and* protects competition than overly simplistic assumptions that “big is bad” or that humans behave as rational self-interested consumers with perfect willpower.

³⁰² See Federal Trade Comm'n, *A Study of the Commission's Divestiture Process* (1999), <http://www.ftc.gov/os/1999/08/divestiture.pdf>.

³⁰³ A good example of such work occurred when the FTC's Bureau of Economics Staff released a study showing that the Department of Housing and Urban Development (HUD)'s proposed broker compensation disclosures confused consumers, leading many of them to choose loans that were more expensive. See Federal Trade Comm'n, Bureau of Economics Staff Report, *The Effect of Mortgage Broker Compensation Disclosures on Consumers and Competition: A Controlled Experiment* (Feb. 2004), <http://www.ftc.gov/os/2004/01/030123mortgagesummary.pdf>. The FTC recommended that HUD should modify the mandated disclosures and encourage customers to engage in educated comparison shopping on loan costs. In so doing, the FTC melded behavioral economics and neoclassical economics by using insights it had gained from studies of consumer behavior to suggest ways HUD could more effectively arm consumers with information that they were likely to credit in ways that were consistent with their self-interest.

3. Providing Insights into Possible Applications of Section 5 of the FTC Act

Behavioral economics can inform the FTC's application of its Section 5 authority, which prohibits "unfair methods of competition" and "unfair or deceptive acts or practices."³⁰⁴ Although the FTC routinely uses its Section 5 authority in the consumer protection context, it has also applied its stand-alone Section 5 authority in the antitrust context³⁰⁵ (although the scope of the FTC's Section 5 authority in that context remains a subject of much debate).

In *FTC v. Sperry & Hutchinson Co.*, the Supreme Court stated that Section 5 empowers the FTC to "define and proscribe an unfair competitive practice, even though the practice does not infringe either the letter or the spirit of the antitrust laws" and to "proscribe practices as unfair or deceptive in their effect on competition,"³⁰⁶ Besides this broad statement, the Court has provided little guidance on Section 5's scope or application. Congress amended the FTC Act in 1994 to incorporate the consumer injury test, which the FTC had earlier adopted.³⁰⁷ Although the codification provided guidance on what is unfair, the Commission, academics, and practitioners are still sorting through what types of conduct Section 5 might cover.³⁰⁸

In the context of those debates, three of the current Federal Trade Commissioners have observed that, because the Supreme Court has contracted the reach of Sections 1 and 2 of the Sherman Act, using Section

³⁰⁴ 15 U.S.C. § 45(a)(1).

³⁰⁵ See, e.g., *In re Negotiated Data Solutions LLC*, Administrative Complaint, FTC File No. 051-0094 (Jan. 23, 2008), <http://www.ftc.gov/os/caselist/0510094/index.shtm> (alleging pure Section 5 violation in standard setting context); *In re Valassis Communications, Inc.*, FTC File No. 051 008 (Complaint) (alleging pure Section 5 violation under an invitation to collude theory).

³⁰⁶ 405 U.S. 233, 239-44 (1972).

³⁰⁷ Federal Trade Commission Act Amendments of 1994, Pub. L. 103-312, 108 Stat. 1691, § 9, enacted Aug. 26, 1994, codified as 12 U.S.C. ' 45(n).

³⁰⁸ 2 DEE PRIDGEN & RICHARD M. ALDERMAN, CONSUMER PROTECTION AND THE LAW § 9:7, at 50-51 (West 2009).

5 of the FTC Act might be justified in those cases where anticompetitive conduct is occurring, but where the current antitrust doctrine does not supply a cause of action.³⁰⁹ The FTC is uniquely positioned to draw on the behavioral economics literature in these circumstances. As Susan Creighton, former FTC Commissioner Tom Leary, and others have suggested, “[p]erhaps the least controversial application of a stand-alone Section 5 claim should be its use in ‘frontier’ settings, where it is as an avenue for redressing anticompetitive acts or practices that have newly emerged and have not yet been fully absorbed into the fabric of the Sherman or Clayton acts.”³¹⁰ In these cases, the behavioral economics literature may better explain than neoclassical theory why harm is occurring. So rather than try to jam a square peg (the evidence of anticompetitive effects and purpose) in the round hole (the current neoclassical economic theory underpinning the Clayton and Sherman Act case law), Section 5 may provide a more logical home for initially bringing such frontier cases.

Behavioral economics, of course, does not arm an antitrust enforcer or court with unfettered discretion. Any governmental action must be

³⁰⁹ See, e.g., Jon Leibowitz, *Tales from the Crypt: Episodes '08 and '09: The Return of Section 5* (Oct. 17, 2008), <http://www.ftc.gov/bc/workshops/section5/docs/jleibowitz.pdf>; William E. Kovacic, *The Application of Section 5 of the Federal Trade Commission Act* (Nov. 12, 2009), slides accompanying talk *available at* <http://www.ftc.gov/speeches/kovacic/091112abaforum.pdf> (discussing the retrenchment of the Sherman Act and Clayton Act by the Supreme Court from 1975 to the present as a possible justification for using Section 5); *In re Intel Corp.*, FTC Docket No. 9341 (Dec. 16, 2009) (concurring statement of Commissioner J. Thomas Rosch), <http://www.ftc.gov/os/adjpro/d9341/091216intelstatement.pdf>.

³¹⁰ Susan A. Creighton & Thomas G. Krattenmaker, *Some Thoughts About the Scope of Section 5*, (Oct. 17, 2008), *available at* <http://www.ftc.gov/bc/workshops/section5/docs/screighton.pdf>; see also Thomas B. Leary, *A Suggestion for the Revival of Section 5*, (Oct. 17, 2008), *available at* <http://www.ftc.gov/bc/workshops/section5/docs/tleary.pdf> (“[R]eliance on Section 5 might be most useful in cases where the Commission does, in fact, have reason to believe that there has been a violation of the Sherman Act or the Clayton Act, but where there is not yet an established body of precedent to support that view.”).

sufficiently predictable, objective, and transparent under rule-of-law principles. When the FTC relies on behavioral economics in the context of Section 5, several safeguards are already in place. First, the FTC lacks authority to impose criminal penalties, seek treble monetary damages or obtain retrospective relief under Section 5. Second, private plaintiffs cannot bring in federal court follow-on treble damage class actions for Section 5 violations.³¹¹ Third, the FTC's decisions are subject to review by the federal appellate court of the respondent's choosing, as well as the Supreme Court. Indeed, when the Commission last used Section 5 in the early 1980s, its findings of liability were struck down in a trio of federal appellate decisions which found, among other things, that the Commission failed to establish predictable rules and legally cognizable anticompetitive effects.³¹² By all indications, the Roberts Court will impose these same requirements.³¹³

But as an added safeguard for novel cases, the FTC should use behavioral economics to explain strong evidence of both anticompetitive purpose and effects. If corporate executives engage in conduct with the purpose and actual effect of harming competition, then it makes little sense

³¹¹ As Commissioner Kovacic has noted, there is still the risk that plaintiffs will sue under state baby FTC Acts. *See* Dissenting Statement of William E. Kovacic, In re Negotiated Data Solutions, FTC File No. 051-0094, *available at* <http://www.ftc.gov/os/caselist/0510094/080122kovacic.pdf>. It remains to be seen, however, to what extent this threat will come to fruition.

³¹² *See, e.g.,* *Official Airline Guides, Inc. v. FTC*, 630 F.2d 920 (2d Cir. 1980); *Boise Cascade Corp. v. FTC*, 637 F.2d 573 (9th Cir. 1980); *E.I. du Pont de Nemours & Co. v. FTC*, 729 F.2d 128 (2d Cir. 1984).

³¹³ *Pac. Bell Tel. Co. v. linkLine Commc'ns, Inc.*, 129 S. Ct. 1109, 1120-21 (2009) (Roberts, C.J.) (noting that the Court has "repeatedly emphasized the importance of clear rules in antitrust law"); *see also* *Town of Concord v. Boston Edison Co.*, 915 F.2d 17, 22 (1st Cir. 1990) (Breyer, J.) (stating that antitrust rules "must be clear enough for lawyers to explain them to clients"); *Barry Wright Corp. v. ITT Grinnell Corp.*, 724 F.2d 227, 234 (1st Cir. 1983) (Breyer, J.) (noting that "[r]ules that seek to embody every economic complexity and qualification may well, through the vagaries of administration, prove counterproductive, undercutting the very economic ends they seek to serve").

to immunize such anticompetitive conduct because it is unexplainable under the Chicago School's neoclassical economic theories.

CONCLUSION

Competition policy is entering a new age. Interest in antitrust law has increased world-wide, and the United States no longer holds a monopoly on competition policy. The question for competition authorities is whether and to what extent does bounded rationality, self-interest and willpower matter.

Courts and agencies will continue to rely on the assumption of rational, self-interested profit-maximizers with perfect willpower, which has become so embedded in antitrust policy, to predict or explain anti-competitive harm. But reliance on these rational-choice theories will recede in the coming years as they fail to explain actual market behavior. Here the behavioral economics literature and other inter-disciplinary economic theories will advance competition policy in understanding such behavior.

Business marketing executives have long understood behavioral economics. Next came the behavioral economists and legal scholars, and now antitrust lawyers and policymakers are starting to study behavioral economics. The Supreme Court's economic thinking, as reflected in *Trinko* and *Leegin*, still lags. But behavioral antitrust is no longer on the horizon.

Behavioral economics is not a celebration of our shortcomings. Putting aside self-interest, which is not accepted as a desirable norm, we will continually strive toward improving our cognitive abilities and willpower. Perhaps one day society may evolve in terms of rationality and willpower to more closely mirror the Chicago School model. In the *Paradiso*, Dante described the light in the form of a river pouring its splendour on the banks. But as Beatrice explained, "The river and the topazes that pass into it and out and the laughter of the flowers are shadowy forecasts of their truth; not that these things are imperfect in themselves, but the defect is in thyself,

that thy vision is not yet so exalted.”³¹⁴ In understanding better how we err, we perhaps can find ways to improve ourselves and the way we interact with others and, in doing do, instill rules of law that more accurately reflect this enhanced understanding.

³¹⁴ DANTE ALIGHIERI, *THE DIVINE COMEDY: PARADISO*, Canto XXX, at 435 (trans. John D. Sinclair Oxford Univ. Press 1961).