Hindsight Bias in Antitrust Law

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> *It's tough to make predictions, especially about the future.*[1]
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> —Yogi Berra

INTRODUCTION

While Yogi Berra was undoubtedly correct about the difficulty of predicting future events, predicting past events has its own complications. Indeed, sometimes predicting the past is more difficult because doing so requires ignoring the present. Seldom in everyday life do people need to predict past events, but the law often requires judges and juries to assess what the ex ante probabilities were at some point in the past for events about which the actual outcomes are already known. For example, police officers often conduct searches without a warrant. After such a search, a judge must sometimes decide whether the police officers had probable cause to conduct the search *before* the search began. But the judge knows that the search did, in fact, uncover evidence of a crime. The fact that the search was successful, however, should not affect the judge's determination of whether the officers had probable cause before the search. In such instances, the judge must determine an ex ante probability in an ex post world.

Predicting what the probable future looked like in the past from the vantage point of the known future is fraught with peril. In theory, factfinders can place themselves back in the relevant time period and don a veil of ignorance. Behind this veil, the event in question has neither happened nor not; it is a probability. The opacity of the veil is critical. After all, Schrodinger's cat is no longer a paradox if the animal is housed in a see-through glass box. In reality, however, any such veil is tattered and transparent. If the factfinder knows what actually happened, this information will influence the calculation of what the probabilities of an outcome occurring were before it occurred.[2] The task of estimating past probabilities of an outcome occurring when one knows what in fact occurred is so notoriously difficult that it has its own designation: hindsight bias.

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1. Peter C. Carstensen, *The* Philadelphia National Bank *Presumption: Merger Analysis in an Unpredictable World*, 80 ANTITRUST L.J. 219, 242 (2015) (quoting Yogi Berra).

2. Probabilities vary between 0 and 1—or, in common parlance, between 0% and 100%. When the probability of an event is greater than 0.5, it is more likely than not. Judges are trying to determine where on that probability continuum a particular event resides. But this post hoc estimation occurs at a time when the outcome is known to be 0 or 1 because the events being predicted have already occurred.

The modern field of study into hindsight bias was launched by Baruch Fischhoff.[3] Fischhoff provided his research subjects with a primer on the 1810s conflict between British forces and Nepalese Gurkhas near Northern India. He suggested four possible outcomes: British victory, Gurkha victory, a peace settlement, and a military stalemate with no peace settlement. The subjects were then divided into five groups. One group was given no information about the ultimate outcome of the conflict. Subjects in each of the remaining four groups were told that one of the four outcomes had, in fact, occurred. The subjects were then asked to assess the probability of each of the outcomes at the time that the conflict began. On average, the members of each group thought that the outcome that they had been told occurred was the most likely outcome a priori, even though they had been instructed to ignore what they "knew" about the ultimate outcome. Fischhoff referred to this phenomenon as "creeping determinism": the effect that being told "an outcome's occurrence consistently increases its perceived likelihood" before the fact.[4] Subsequent studies confirmed his earlier results.[5] Fischhoff's studies effectively created the field of research on hindsight bias.[6]

Although the historic battlefields of Northern India are a great distance from America's federal courthouses in which antitrust litigation is adjudicated, Fischhoff's scholarship provides insights into how judges and juries decide antitrust cases. Antitrust law provides the rules for competitive markets. For example, the Sherman Act condemns illegal monopolization, attempts to monopolize, and conspiracies to restrain trade because these forms of conduct prevent the efficient supply of goods and services to consumers at competitive prices. A growing body of scholarship in behavioral economics explains how cognitive biases can prevent competitive markets from operating efficiently when consumers or corporations do not behave as predicted

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3. Baruch Fischhoff, *Hindsight ≠ Foresight: The Effect of Outcome Knowledge on Judgment Under Uncertainty,* 1 J. EXPERIMENTAL PSYCHOL. 288 (1975).

4. *Id.* at 292.

5. Baruch Fischhoff & Ruth Beyth, *"I Knew It Would Happen": Remembered Probabilities of Once-Future Things*, 13 ORGANIZATIONAL BEHAV. & HUM. PERFORMANCE 1, 3 (1975) ("[S]ubjects were provided with outcome knowledge regarding various events and asked to respond as they would have 'had they not known what happened.' These subjects responded more like subjects who knew what had happened than those who did not . . . .").

6. Doron Teichman, *The Hindsight Bias and the Law in Hindsight*, *in* THE OXFORD HANDBOOK OF BEHAVIORAL ECONOMICS AND THE LAW 354, 355 (Eyal Zamir & Doron Teichman eds., 2014) (discussing Fischhoff's British-Gurkha study); Scott A. Hawkins & Reid Hastie, *Hindsight: Biased Judgments of Past Events after the Outcomes Are Known*, 107 PSYCHOL. BULL. 311, 312 (1990) (same).

by simple microeconomic models.[7] The emerging field of literature in which behavioral economics is applied to antitrust law—sometimes called behavioral antitrust—has not yet considered the significance of hindsight bias to antitrust jurisprudence. This Article explains why hindsight bias is important to behavioral antitrust.

Part One of this Article explains how hindsight bias affects a person's ability to accurately assess ex ante probabilities when the ultimate outcomes are known. Such hindsight bias has been documented across many different subject areas and is exhibited by educated professionals.[8] The risk of hindsight bias is important because many areas of law require the factfinder to predict, after the actual outcome is known, how probable a particular outcome was before it happened.

Part Two explores how hindsight bias can affect decisions in antitrust cases. Antitrust law often requires judges to place themselves in the position of one of the litigating parties at an earlier time and to make predictions, as of that point in time, about future outcomes. This Part discusses three areas of antitrust law in which hindsight bias occurs. First, in attempted monopolization jurisprudence the factfinder must determine whether, at the time a defendant's anticompetitive conduct occurred, it was likely to create monopoly power. Engaging in anticompetitive conduct alone does not constitute an illegal attempt to monopolize. The defendant who engages in such conduct is only liable if the defendant possessed a "dangerous probability" of succeeding in its effort to monopolize the relevant market.[9] In many cases, however, judges use information about what eventually happened when calculating the probability of monopolization at the time that the anticompetitive conduct began.[10] Judges therefore often find no dangerous probability of monopolization *because* the defendant did not in fact succeed in monopolizing the market.[11] This is classic hindsight bias.

Second, predatory pricing cases often present a specialized case of hindsight bias. Predatory pricing is a business strategy in which a

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7. *See generally* Amanda P. Reeves & Maurice E. Stucke, *Behavioral Antitrust*, 86 IND. L.J. 1527, 1531 (2011) (addressing the "implications of the increasing interest in behavioral economics for competition policy"); Avishalom Tor, *Understanding Behavioral Antitrust*, 92 TEX. L. REV. 573, 573 (2014) (explaining how "antitrust law can and should account for systematic and predictable boundedly rational behavior that is neither constant nor uniform").

8. *See infra* notes 33–37 and accompanying text.

9. Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447, 456 (1993).

10. *See infra* Section II.A (discussing cases).

11. *See infra* Section II.A.

firm first charges a price below its costs in order to drive its competitors from the market and then charges a monopoly price—that is, a price above competitive levels.[12] Predatory pricing claims require a probability analysis because the plaintiff must show that when the defendant was charging a price below cost, it possessed a dangerous probability of later recouping that investment in below-cost pricing by charging a monopoly price.[13] Yet some courts have held that a defendant's actual failure to ultimately succeed in recouping its losses must mean that there was never a dangerous probability that the defendant could recoup its losses in the first place.[14]

Third, courts sometimes exhibit hindsight bias in antitrust conspiracy cases. Section One of the Sherman Act condemns agreements that unreasonably restrain trade.[15] Some types of agreements between competitors, such as price-fixing conspiracies, are per se illegal. This means that the agreement is presumed to be anticompetitive as a matter of law. Such price-fixing agreements violate Section One even if they do not actually succeed in raising prices. Yet in some cases, courts have reasoned that if the (alleged) conspiracy has failed, then it must not have existed in the first place.[16] Part Two explains how this is a peculiar example of hindsight bias. Part Two concludes by explaining how hindsight bias in antitrust jurisprudence seems to consistently favor the defendants.

Part Three discusses how hindsight bias effectively amends antitrust doctrine. For example, if plaintiffs bringing attempted monopolization claims must prove that the attempt succeeded in order to convince a court that the defendant had a dangerous probability of doing so, then the cause of action for attempted monopolization effectively does not exist; only actual monopolization would be illegal. Similarly, if predatory pricing plaintiffs must prove actual recoupment, that fundamentally weakens the antitrust rule against using below-cost pricing to drive efficient competitors from the market. Finally, hindsight bias creates the risk of courts effectively rewriting Section One of the Sherman Act because if a price-fixing agreement's lack of success is evidence that no such agreement ever existed, then the plaintiffs bringing per se claims must prove anticompetitive effects. The

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12. *See infra* note 152 and accompanying text.

13. *See infra* note 155 and accompanying text.

14. *See infra* Section II.B (discussing cases).

15. *See* 15 U.S.C. § 1 (2012) ("Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is hereby declared to be illegal.").

16. *See infra* Section II.C (discussing cases).

per se rule's presumption of anticompetitive effects would cease to exist. Part Three shows how these changes in antitrust doctrine would undermine the ability of antitrust law to protect consumers and efficient competitors from antitrust injury.

Part Four evaluates how courts may try to reduce the risk of hindsight bias distorting results in antitrust litigation. One approach would be to use limiting instructions that charge jurors not to use actual outcome information to assess ex ante probabilities. Research shows that taking this approach will fail precisely because of hindsight bias.[17] Another approach would be to rely more heavily on judges rather than juries, based on the assumption that judges can resist hindsight bias. This assumption is, unfortunately, flawed. Indeed, the cases in Part Two all involved federal judges falling victim to hindsight bias in antitrust cases.[18] Part Four concludes that the best way to reduce the risk of hindsight bias is to have antitrust cases decided by juries who remain uninformed about the success or failure of the defendants' attempted monopolization, predatory pricing scheme, or alleged conspiracy. Although post-conduct information may have some evidentiary value, its probative value is substantially outweighed by its prejudicial effect due to hindsight bias. Ultimately, judges can only prevent hindsight bias by limiting the information that the jury sees.

I. HINDSIGHT BIAS AND THE LAW

The potential for hindsight bias exists when a person is tasked with determining the ex ante probability of an event after the fact. If people learn that the event did not, in fact, occur, they are more likely to believe that the *before-the-fact* probability of the event occurring was relatively low. Conversely, if people learn that the event did later occur, they are more likely to say that the event was highly probable—perhaps inevitable—all along. This phenomenon is hindsight bias: the "using [of] known outcomes to assess the predictability at some earlier time of something that has already happened."[19] Because of hindsight bias,

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17. *See infra* Section IV.A.

18. *See infra* Sections II.A–II.C.

19. Chris Guthrie, Jeffrey J. Rachlinski & Andrew J. Wistrich, *Inside the Judicial Mind*, 86 CORNELL L. REV. 777, 803 (2001). Hindsight bias can also take the form of people misremembering their prior predictions and, after the fact, claiming that they were more accurate than they actually were. Baruch Fischhoff, *For Those Condemned to Study the Past: Heuristics and Biases in Hindsight*, *in* JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 335, 341 (Daniel Kahneman, Paul Slovic & Amos Tversky eds., 1982) ("[People] even misremember their own predictions so as to exaggerate in hindsight what they knew in foresight."); Barbara Mellers & A. Peter McGraw, *Self-serving Beliefs and the Pleasure of Outcomes*, *in* 2 THE PSYCHOLOGY OF

"[p]eople overstate their own ability to have predicted the past and believe that others should have been able to predict events better than was possible."[20]

Once people learn the actual outcome of an event or a plan, they cannot replicate the uncertainty that existed before they knew the outcome.[21] Because "people consistently exaggerate what could have been anticipated in foresight," hindsight bias makes outcomes seem inevitable in retrospect.[22] After people see an outcome as inevitable, they treat that outcome as necessarily predictable.[23] After all, how could any other outcome have happened if this outcome was inevitable?[24] Not only do people believe they would have predicted the actual result that occurred, they also assume that all others should have been able to anticipate this "inevitable" result before it happened.[25] Hindsight bias ultimately reflects a combination of perceived inevitability and predictability.[26] People then project this inevitability and predictability onto others and believe that reasonable people should have naturally anticipated the result that eventually occurred.[27]

ECONOMIC DECISIONS 31, 31 (Isabelle Brocas & Juan D. Carrillo eds., 2004) ("The hindsight bias is the tendency to believe that one's predictions of events as more accurate than they actually were." (citing Fischhoff, *supra* note 3, at 288–99; and Fischhoff & Beyth, *supra* note 5, at 1–16)).

20. Guthrie et al., *supra* note 19, at 799; *see also* Teichman, *supra* note 6, at 355 ("The hindsight bias—or, the 'Monday-morning quarterback' bias, or the 'I knew it all' bias—refers to the tendency of people to overestimate the probability of an event once they are aware of the fact that the event has occurred.").

21. Jennifer D. Campbell & Abraham Tesser, *Motivational Interpretations of Hindsight Bias: An Individual Difference Analysis*, 41 J. PERSONALITY 605, 605 (1983) ("[W]hen individuals learn the correct answer to a question or the outcome of an event, they are either unable or unwilling to retrieve that state of uncertainty that characterizes preoutcome judgments.").

22. Fischhoff, *supra* note 19, at 341.

23. *Id.* at 347 ("The hindsight research described earlier suggests that we are not only quick to find order but also poised to feel that we knew it all along in some way or would have been able to predict the result had we been asked in time.").

24. *Id.* at 341 ("They not only tend to view what has happened as having been inevitable but also to view it as having appeared 'relatively inevitable' before it happened.").

25. *Id.* ("People believe that others should have been able to anticipate events much better than was actually the case.").

26. John C. Anderson, D. Jordan Lowe & Philip M.J. Reekers, *Evaluation of Auditor Decisions: Hindsight Bias Effects and the Expectation Gap*, 14 J. ECON. PSYCHOL. 711, 711 (1993) ("Hindsight bias relates to individuals' overestimation of the extent to which a realized outcome could have been anticipated. That is, individuals systematically overstate the relative inevitability of an outcome and believe that the 'now realized event' was largely apparent in foresight.").

27. Jeffrey J. Rachlinski, *A Positive Psychological Theory of Judging in Hindsight*, 65 U. CHI. L. REV. 571, 571–72 (1998) (offering a thorough analysis of potential causes of the bias):

> Fischhoff described the bias as follows: "In hindsight, people consistently exaggerate what could have been anticipated in foresight. They not only tend to view what has happened as having been inevitable but also to view it as having appeared 'relatively

Researchers have advanced different theories to explain why hindsight bias distorts people's abilities to estimate probabilities in an ex ante world. Motivational theories suggest that hindsight bias is driven by some people's desire to live in a world where events are predictable or by their need to be correct and to have others view them as intelligent.[28] This is an essentially ego-driven explanation. In contrast, cognitive theory suggests that people subconsciously incorporate new information to adjust their probability estimates.[29] While using new information to reevaluate probabilities is logical when estimating the likelihood of future events, "the hindsight bias consists of using known outcomes to assess the predictability at some earlier time of something that has already happened."[30] While scholars debate the underlying causes of hindsight bias,[31] no definitive theory or consensus yet exists.

Although the source of hindsight bias is unsettled, the fact of hindsight bias is not. Hindsight bias has been well documented.[32] Researchers have detected hindsight bias in everything from predicting election results[33] to bankruptcies.[34] In total, hindsight bias has been replicated in well over one hundred studies.[35] Hindsight bias exists in

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> inevitable' before it happened. People believe that others should have been able to anticipate events much better than was actually the case."

(quoting Fischhoff, *supra* note 19, at 341).

28. *Id.* at 582; *see also* Baruch Fischhoff, *Debiasing*, *in* JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 422, 429 (Daniel Kahneman, Paul Slovic & Amos Tversky eds., 1982) ("One possible attraction of hindsight bias is that it may be quite flattering to represent oneself as having known all along what was going to happen.").

29. *See, e.g.*, Guthrie et al., *supra* note 19, at 799 (Hindsight bias "occurs because learning an outcome causes people to update their beliefs about the world. People then rely on these new beliefs to generate estimates of what was predictable, but they ignore the change in their beliefs that learning the outcome inspired."); Rachlinski, *supra* note 27, at 582 ("Finally, the cognitive theory proposes that learning an outcome alters what people believe about the world in ways that make the known outcome seem inevitable.").

30. Guthrie et al., *supra* note 19, at 803.

31. *See, e.g.*, Rachlinski, *supra* note 27, at 584 ("Motivational explanations thus being inadequate, the hindsight bias must be the product of the thought process that people use to make judgments in hindsight.").

32. *Id.* at 571 ("Beginning with the work of Baruch Fischhoff, psychologists have demonstrated repeatedly that people overstate the predictability of past events—a phenomenon that psychologists have termed the 'hindsight bias.' ").

33. *See, e.g.*, J. L. Powell, *A Test of the Knew-It-All-Along Effect in the 1984 Presidential Statewide Elections*, 18 J. APPLIED SOC. PSYCHOL. 760–73 (1988); *see also* M. R. Leary, *Hindsight Distortion and the 1980 Presidential Election,* 8 PERSONALITY & SOC. PSYCHOL. BULL. 257–63 (1982).

34. *See, e.g.*, Thomas A. Buchman, *An Effect of Hindsight on Predicting Bankruptcy with Accounting Information,* 10 ACCT. ORG. & SOC. 267 (1985).

35. Jay J.J. Christensen-Szalanski & Cynthia Fabian Willham, *The Hindsight Bias: A Meta-analysis,* 48 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 147, 147–48 (1991) (noting the

educated populations and professions, including among judges, surgeons, physicians, nurses, psychologists, auditors, and military leaders.[36] Ultimately, "hindsight bias has produced enough research to allow some tentative general statements: It appears to be quite robust and widespread."[37]

Perhaps most importantly for the purposes of this Article, studies have demonstrated that hindsight bias distorts decisionmaking in actual court cases.[38] Hindsight bias can affect legal analysis because many legal questions require factfinders to estimate probabilities from the perspective of an earlier time. By the time a case reaches trial, the event has either occurred or not. But if factfinders use the ultimate outcome to determine the ex ante probabilities of its occurrence, they are not putting themselves in the position of the relevant party who was making important decisions at the earlier time without knowledge of the outcome. Yet this is the vantage point from which the factfinder is supposed to be operating. Taking current knowledge and projecting it retroactively onto litigants results in legal decisions tainted by hindsight bias. Most infamously, in one historical case, a 1931 New Jersey court penalized an estate's executors for not immediately selling the testator's stocks because, the court asserted, "It was common knowledge, not only amongst bankers and trust companies, but the general public as well, that the stock market condition at the time of testator's death was an unhealthy one, that values were very much

existence of 128 studies documenting hindsight bias); Teichman, *supra* note 6, at 355 ("The basic result of Fischhoff (1975) has been replicated in dozens of studies."); *see also* Rachlinski, *supra* note 27, at 580 ("Virtually every study on judging in hindsight has concluded that events seem more predictable than they actually are.").

36. Fischhoff, *supra* note 28, at 430 (noting studies finding hindsight bias in surgeons, physicians, and nurses); *see also* Hal R. Arkes, David Faust, Thomas J. Guilmette & Kathleen Hart, *Eliminating the Hindsight Bias*, 73 J. APPLIED PSYCHOL. 305, 306 (1988) (psychologists); Hal R. Arkes, Robert L. Wortmann, Paul D. Saville, & Allan R. Harkness, *Hindsight Bias Among Physicians Weighing the Likelihood of Diagnoses*, 66 J. APPLIED PSYCHOL. 252, 253 (1981) (physicians); Raanon Lipshitz & Dalya Barak, *Hindsight Wisdom: Outcome Knowledge and the Evaluation of Decisions*, 88 ACTA PSYCHOLOGICA 105, 121–23 (1995) (officers in the Israeli defense forces). Regarding military leaders and historians, see Fischhoff, *supra* note 28, at 430 (noting study that characterized "the congressional investigatory committee following Pearl Harbor as 39 volumes of hindsight bias").

37. Fischhoff, *supra* note 28, at 431; *see* Campbell & Tesser, *supra* note 21, at 606 ("This research has also demonstrated that the [hindsight bias] effect is robust over a variety of subject populations, experimental paradigms, and response instructions."); *see also* Guthrie et al., *supra* note 19, at 801 ("[H]indsight bias is one of the most robust cognitive illusions.").

38. Teichman, *supra* note 6, at 357 ("Cheney and his colleagues (1989) examined 1,004 court cases alleging anesthesia-related negligence and found that in over 40% of the cases in which liability was found the physician acted appropriately.").

inflated, and that a crash was almost sure to occur."[39] This is a textbook example of hindsight bias with legal implications.[40]

More recently, scholars have reported hindsight bias in many areas of law. For example, patent law provides that to be patentable, a discovery must not have been obvious to a person having ordinary skill in the art.[41] By the time of an infringement trial in which patent validity is contested, however, an invention that was non-obvious at the time of discovery and patenting may seem obvious in hindsight. Scholars have documented many instances in patent litigation when hindsight bias seems to have distorted results in evaluating a patent's validity.[42]

Similarly, hindsight bias can affect judicial determinations of probable cause. Traditionally, judges determine probable cause before a search warrant is issued—a scenario that presents no risk of hindsight bias.[43] But when exigent circumstances compel police to conduct a search before obtaining a warrant, the judge must determine whether probable cause existed prior to the search taking place.[44] The judge, however, is making this probable cause determination with full knowledge of whether the search uncovered contraband or other evidence of illegal activity.[45] Knowing that the person seeking to suppress evidence from the search did, in fact, possess contraband may put subconscious pressure on judges to find probable cause in

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39. *In re* Chamberlain's Estate, 156 A. 42, 43 (N.J. Prerog. Ct. 1931).

40. Guthrie et al., *supra* note 19, at 804 (treating the opinion as infected by hindsight bias because "the court's ex post assessment of the ex ante likelihood of the crash was influenced by being aware of the crash.").

41. *See* 35 U.S.C. § 103 (2012).

42. *See generally* Scott R. Conley, *Irrational Behavior, Hindsight, and Patentability: Balancing the "Obvious to Try" Test with Unexpected Results*, 51 IDEA 271 (2011); Jun Wu, Note, *Rewinding Time: Advances in Mitigating Hindsight Bias in Patent Obviousness Analysis*, 97 KY. L.J. 565 (2008–2009).

43. Andrew E. Taslitz, *Foreword: The Death of Probable Cause*, 73 L. & CONTEMP. PROBS. i, viii (2010) ("[W]arrants require judges to gauge probable cause before knowing what, if anything, will be found. Warrants thus avoid the problem of 'hindsight bias.' ").

44. *See* Jeffrey J. Rachlinski, Chris Guthrie & Andrew J. Wistrich, *Probable Cause, Probability, and Hindsight*, 8 J. EMPIRICAL LEGAL STUD. 72, 73 (2011) (explaining judges' ex post review of searches conducted under the various exigency exceptions to the general warrant requirement).

45. *Id.* at 73 ("When searches conducted without a warrant produce incriminating evidence to be used against a criminal defendant, the judge must assess probable cause in full knowledge that the search uncovered incriminating evidence.").

hindsight.[46] The Supreme Court has recognized this risk.[47] Much evidence suggests that hindsight bias can affect probable-cause determinations.[48] This could lead to judges approving searches in retrospect that they would not have approved in foresight,[49] which creates a strong incentive for police to search first and seek permission later. Similarly, hindsight bias can affect jury decisions in civil cases challenging a police officer's allegedly illegal search, with respect to both liability and damages. For example, if the party subject to the challenged search did in fact possess contraband, a jury may be less likely to find the search to have been illegal or may reduce the private plaintiff's damages.[50]

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46. *See* Teichman, *supra* note 6, at 358:

> The hindsight bias suggests that judges will exhibit a greater tendency to rule in the latter category of cases that the search was based on a probable cause since their judgment of the search will be influenced by the fact that in retrospect it turned out to be justified.;

see also Rachlinski et al., *supra* note 44, at 73 ("Judging the reasonableness of a police search in hindsight obviously places great pressure on a judge to side with the police. A judge who refuses to issue a warrant in foresight impedes police investigation somewhat. But concluding that a search was unreasonable in hindsight, however, is apt to lead to the suppression of important evidence against a defendant who likely committed a crime.").

47. *See* Beck v. Ohio, 379 U.S. 89, 96 (1964) ("An arrest without a warrant bypasses the safeguards provided by an objective predetermination of probable cause, and substitutes instead the far less reliable procedure of an after-the-event justification for the arrest or search, too likely to be subtly influenced by the familiar shortcomings of hindsight judgment.").

48. *See* Taslitz, *supra* note 43, at viii ("Ample psychological theory and empirical albeit mostly in other contexts, supports the idea that hindsight bias is at work in the probable-cause determination."). *But see id.* at 92 ("These results show that the hindsight bias influenced judges' assessments of probability, but did not influence their rulings."); Rachlinski et al., *supra* note 44, at 73 ("[W]e found when making probable cause determinations, judges do not seem to be influenced by the hindsight bias.").

49. *See* Taslitz, *supra* note 43, at viii:

> Simply put, if a suppression court reviewing the constitutionality of a warrantless search knows that the search uncovered the horribly mutilated body of a torture victim and a kilo of cocaine, it becomes harder for that court to find that there was no probable cause. That evidence *was* found suggests that there was ample reason to believe beforehand that evidence *would* be found.;

Andrew J. Wistrich, Chris Guthrie & Jeffrey J. Rachlinski, *Can Judges Ignore Inadmissible Information? The Difficulty of Deliberately Disregarding*, 153 U. PA. L. REV. 1251, 1313 (2005) ("If the hindsight bias affects judges' assessments of probable cause, then judges in hindsight will admit evidence obtained under circumstances in which police could not have obtained a warrant in foresight.").

50. *See* Merrie Jo Stallard & Debra L. Worthington, *Reducing the Hindsight Bias Utilizing Attorney Closing Arguments*, 22 L. & HUM. BEHAV. 671, 673 (1998) ("In summary, the few empirical studies examining hindsight bias in a legal context have demonstrated that mock jurors are unable to set aside the outcome information when rendering a decision."); *see also* Jonathan D. Casper, Kennette Benedict & Janice R. Kelly, *Cognitions, Attitudes and Decision-Making in Search and Seizure Cases*, 18 J. APPLIED SOC. PSYCHOL. 93, 111 (1988) ("The evidence presented here lends

Hindsight bias has been particularly well studied and documented in many areas of negligence law. Factfinders are supposed to determine whether a defendant's actions were negligent before the accident or misfortune occurred.[51] In negligence cases, a defendant's reasonable level of care may seem unreasonable after an accident has occurred.[52] When juries learn that an accident has occurred, hindsight "bias can cause judges and juries to find liable even those defendants who attempted to avoid negligence by undertaking all reasonable precautions in foresight."[53] This can lead to juries making incorrect determinations of negligence.[54] Hindsight bias can create the illusion of negligence in retrospect in a variety of scenarios, including saving-and-loans failures,[55] medical malpractice,[56] and cases involving decisions of

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support to the concern that outcome knowledge may influence juror decision-making in tort suits against officers.").

51. *See* Rachlinski, *supra* note 27, at 572 ("Reasonableness must be determined from the perspective of the defendant at the time that the precautions were taken, but the hindsight bias ensures that subsequent events will influence that determination. The law relies on a process that assigns liability in a biased manner."); David B. Wexler & Robert F. Schopp, *How and When to Correct for Juror Hindsight Bias in Mental Health Malpractice Litigation: Some Preliminary Observations*, 7 BEHAV. SCI. & L. 485, 499 (1989) ("In a negligence case, juries are supposed to evaluate the risk and reasonableness of the defendant's behavior in light of the danger that was or should have been apparent to the actor in the circumstances, not by hindsight in light of the consequences." (citing PROSSER AND KEETON ON THE LAW OF TORTS § 31, at 170 (5th ed. 1984))).

52. *See* Rachlinski, *supra* note 27, at 572 ("The defendant's level of care will be reviewed by a judge or jury who already knows that it proved inadequate to avoid the plaintiff's injury. Consequently, the defendant's level of care will seem less reasonable in hindsight than it did in foresight." (citing Kim A. Kamin & Jeffrey J. Rachlinski, *Ex Post ≠ Ex Ante: Determining Liability in Hindsight,* 19 L. & HUMAN BEHAV. 89, 101 (1995))).

53. *Id.* at 572.

54. Christine Jolls, Cass R. Sunstein & Richard Thaler, *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1524 (1998) ("Hindsight bias will lead juries making negligence determinations to find defendants liable more frequently than if cost-benefit analysis were done correctly—that is, on an ex ante basis.").

55. *See* Stallard & Worthington, *supra* note 50, at 681 ("Specifically, participants learning of the S&L's failure (hindsight condition) tended to believe the board of directors should not have instituted their new business plan, found the directors negligent, and predicted the S&L would fail more often than those subjects not given the outcome of the S&L (foresight condition).").

56. *See* Hal R. Arkes & Cindy A. Schipani, *Medical Malpractice v. the Business Judgment Rule: Differences in Hindsight Bias,* 73 OR. L. REV. 587, 630 (1994) (comparing the perceived assumption of risk by shareholders who suffer injury from business decision with patients who suffer medical injuries); *see also* Robert A. Caplan, Karen L. Posner & Frederick W. Cheney, *Effect of Outcome on Physician Judgments of Appropriateness of Care*, 265 J. AM. MED. ASS'N 1957, 1957 (1991):

> Over the past several years, we have accumulated data suggesting that the severity of an adverse outcome may influence a peer reviewer's opinion of the appropriateness of care. These data have been derived from our investigation of adverse anesthetic outcomes collected from the closed claims files of a nationwide group of US professional liability insurance carriers.;

mental health professionals.[57] In the latter context, the threat of hindsight bias in jurors can lead to "unnecessary hospitalization" of patients as doctors try to minimize the probability of jurors judging them negligent in hindsight.[58] In short, the scholarly literature demonstrates the effect of hindsight bias in a variety of negligence cases.[59]

Ultimately, hindsight bias can affect all the major participants in the litigation process. Witnesses predicting probability can be influenced by hindsight bias.[60] Hindsight bias prevents jurors from properly calculating probabilities[61] and may make "juries believe that litigants should have predicted events that no one could have predicted."[62] And several studies have shown judges to be prone to hindsight bias in several contexts.[63]

(citing F. W. Cheney, K. Posner, R.A. Caplan & R.J. Ward, *Standard of Care and Anesthesia Liability*, 261 JAMA 1599 (1989)); *id.* ("We conclude that knowledge of the severity of outcome can influence a reviewer's judgment of the appropriateness of care.").

57. Wexler & Schopp, *supra* note 51, at 485–87.

58. *Id.* at 486–87:

> What Poythress did not mention, but what is to us as troubling as the possible injustice of holding malpractice defendants to an unrealistically high standard of care, is the real possibility that releasing authorities will adjust to juror 20/20 hindsight by adopting highly restrictive discharge practices, resulting in a marked increase in false positive determinations of dangerousness and in the unwarranted deprivation of patient liberty. In therapeutic jurisprudence terms, such an alteration in discharge practice would constitute law-caused unnecessary hospitalization. The unnecessary hospitalization would occur through the operation of a rule of law (the negligence standard) in the procedural context of an ordinary negligence trial.

59. *See, e.g.*, Jolls et al., *supra* note 54, at 1523–24:

> Hindsight bias also appears to occur in the specific context of negligence determinations. In the negligence studies, subjects in the role of jurors—armed with knowledge that harm had in fact occurred—were found to attach significantly higher probabilities to harm than subjects in the role of ex ante decisionmakers—those not informed of the occurrence of harm.

(citing Kim A. Kamin & Jeffrey J. Rachlinski, *Ex Post & Ex Ante*, 19 L. & HUM. BEHAV. 89 (1995); and Susan J. LaBine & Gary LaBine, *Determinations of Negligence and the Hindsight Bias*, 20 L. & HUM. BEHAV. 501 (1996)).

60. *See* Hawkins & Hastie, *supra* note 6, at 318 ("[W]itnesses' and practitioners' testimony and conclusions are biased by their knowledge of the outcomes of chains of relevant events.").

61. Jolls et al., *supra* note 54, at 1522 ("Because of the hindsight bias . . . juries will have difficulty making probability estimates . . . .").

62. Guthrie et al., *supra* note 19, at 780 (citing Reid Hastie, David A. Schkade & John W. Payne, *Juror Judgments in Civil Cases: Hindsight Effects on Judgments of Liability for Punitive Damages*, 23 L. & HUM. BEHAV. 597, 609 (1999); Kim A. Kamin & Jeffrey J. Rachlinski, *Ex Post ≠ Ex Ante: Determining Liability in Hindsight*, 19 L. & HUM. BEHAV. 89, 99 (1995); Susan J. LaBine & Gary LaBine, *Determinations of Negligence and the Hindsight Bias*, 20 L. & HUM. BEHAV. 501, 510–12 (1996); and Stallard & Worthington, *supra* note 50, at 680–81).

63. Guthrie, Rachlinski & Wistrich, *supra* note 19, at 803 ("[J]udges exhibited a predictable hindsight bias; when they learned that a particular outcome had occurred, they were much more likely to identify that outcome as the most likely to have occurred."); *id.* at 804 (first citing John

II. HINDSIGHT BIAS IN ANTITRUST JURISPRUDENCE

Although hindsight bias has been researched and documented in many fields of law, it has never been thoroughly analyzed in the context of antitrust law.[64] This is surprising because important antitrust causes of action often ask factfinders to consider ex ante probabilities at an ex post time—a situation that creates an inherent risk of hindsight bias. This Part discusses the potential for and reality of hindsight bias in antitrust litigation.

A. Attempted Monopolization

Section Two of the Sherman Act condemns both actual monopolization and attempted monopolization. Actual monopolization is illegal when a firm uses anticompetitive conduct to acquire or maintain a monopoly.[65] This Article instead focuses on attempted monopolization. Antitrust law is not unique in condemning misconduct that fails to achieve the wrongdoer's goal. Many areas of substantive law punish attempted crimes and violations in order to deter the underlying misconduct, whether the attempt succeeds or not.[66] In antitrust law, attempted monopolization claims can be brought by either government officials or private plaintiffs. In *Spectrum Sports, Inc. v. McQuillan*,[67] the Supreme Court created a three-element test for attempted monopolization: "(1) . . . the defendant has engaged in predatory or anticompetitive conduct with (2) a specific intent to monopolize and (3) a dangerous probability of achieving monopoly power."[68] Private plaintiffs must also show that they have suffered antitrust injury caused by the defendant's illegal anticompetitive

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C. Anderson et al., *Evaluation of Auditor Decisions: Hindsight Bias Effects and the Expectation Gap*, 14 J. ECON. PSYCHOL. 711, 730 (1993); then citing W. Kip Viscusi, *How Do Judges Think About Risk?*, 1 AM. L. & ECON. REV. 26, 55 (1999); and then citing Marianne M. Jennings et al., *Outcome Foreseeability and Its Effects on Judicial Decisions* (unpublished manuscript)) ("[O]ur findings are consistent with other studies showing that judges are vulnerable to the hindsight bias.").

64. *See* Christopher R. Leslie, *Rationality Analysis in Antitrust*, 158 U. PA. L. REV. 261 (2010) (briefly discussing hindsight bias in the context of predatory pricing conspiracies).

65. *See* United States v. Grinnell Corp., 384 U.S. 563, 570–71 (1966) (reciting the legal definition of the offense of monopoly under the Sherman Act).

66. *See* Mark E. Roszkowski & Ralph Brubaker, *Attempted Monopolization: Reuniting a Doctrine Divorced from Its Criminal Law Roots and the Policy of the Sherman Act*, 73 MARQ. L. REV. 355, 381 (1990) ("One major function of the attempt crime is prevention. To prevent the commission of a substantive offense, the law needs a basis to intervene before the actor actually has committed the completed crime.").

67. 506 U.S. 447, 456 (1993).

68. *Id*. at 456 (citing 3 P. AREEDA & D. TURNER, ANTITRUST LAW ¶ 820, at 312 (1978)).

conduct.[69] Because this Article focuses on the role of prediction in antitrust analysis, the third element of the *Spectrum Sports* test is the most relevant for the purposes of this Article.[70] Antitrust law requires plaintiffs to prove a dangerous probability that the defendant will achieve monopoly power in order to prevent Section Two from being a garden-variety unfair competition statute.[71]

The major distinction between actual monopolization and attempted monopolization is that the former targets successful monopolization achieved through anticompetitive conduct while the latter condemns failed attempts to acquire actual monopoly power. By definition, attempted monopolization is "an unsuccessful attempt to

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69. *See, e.g.*, SmileCare Dental Grp. v. Delta Dental Plan of Cal., Inc., 88 F.3d 780, 783 (9th Cir. 1996) (including "causal antitrust injury" as an element of attempted monopolization).

70. Before *Spectrum Sports*, commentators debated whether a dangerous probability of monopolization was an element at all. *See* Roszkowski & Brubaker, *supra* note 66, at 356 ("The central controversy is whether 'dangerous probability of success' should be an element of an attempt to monopolize, and if so, what constitutes a dangerous probability of successful monopolization. Legal commentators have lined up on both sides of the issue . . . .").

The third element of the *Spectrum Sports* test is analogous to the monopoly power element of the *Grinnell* test. (Like the monopoly power element of monopolization claims, the dangerous probability element is often analyzed first even though it is technically listed third. *See In re* Int'l Tel. & Tel. Corp., 104 F.T.C. 280, 407 (1984).) Both elements require the plaintiff to define the relevant market over which the defendant possesses monopoly power (in the case of actual monopolization) or enjoys "a dangerous probability of achieving monopoly power" (in the case of attempted monopolization). *Spectrum Sports*, 506 U.S. at 456. Proof of actual power or probable power generally entails analysis of the defendant's market share and any barriers to entry into that market. Although the analytical framework is the same, actual monopolization requires the plaintiff to prove that the defendant actually possesses a dominant market share; in contrast, attempted monopolization claims can succeed when the defendant does not possess a monopoly market share, U.S. Anchor Mfg., Inc. v. Rule Indus., Inc., 7 F.3d 986, 1000 (11th Cir. 1993), so long as a dangerous probability existed that the defendant would monopolize the market. *Spectrum Sports*, 506 U.S. at 456 ("In order to determine whether there is a dangerous probability of monopolization, courts have found it necessary to consider the relevant market and the defendant's ability to lessen or destroy competition in that market.").

71. Horst v. Laidlaw Waste Sys., Inc., 917 F. Supp. 739, 742 (D. Colo. 1996) ("Courts insist that such a showing [of dangerous probability of monopolization] be made because otherwise the Sherman Act could unwittingly be expanded into an unfair competition statute."); *see also* Int'l Distrib. Ctrs., Inc. v. Walsh Trucking Co., 812 F.2d 786, 791 (2d Cir. 1987) (noting that the dangerous probability of monopolizing element prevents Section 2 from discouraging healthy competition).

The Fifth Circuit has explained that the "distinction between unfair conduct and anticompetitive conduct is critical to maintain because the antitrust laws 'do not create a federal law of unfair competition or purport to afford remedies for all torts committed by or against persons engaged in interstate commerce.' " Retractable Techs., Inc. v. Becton Dickinson & Co., 842 F.3d 883, 892 (5th Cir. 2016) (quoting Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 225 (1993)); *see also* Military Servs. Realty, Inc. v. Realty Consultants of Va., Ltd., 823 F.2d 829, 832 n.4 (4th Cir. 1987) ("[C]ourts should be circumspect in converting ordinary business torts into violations of antitrust laws" because it was "not the intent of the antitrust laws" "to 'create a federal common law of unfair competition.' " (citation omitted)).

achieve monopolization."[72] Because the attempt to monopolize constitutes a separate and distinct basis for antitrust liability, "the Sherman Act's prohibition against attempted monopolization does not require that the attempt in fact ripen into an actual monopoly."[73] Indeed, plaintiffs generally bring attempted monopolization claims instead of solely pursuing actual monopolization claims precisely because the defendant's conduct failed to create monopoly power.[74]

In theory, courts can look at many factors in determining the defendant's probability of monopolizing the market, including market trends, barriers to entry, and the number and strength of rivals.[75] But courts tend to focus on the defendant's market share.[76] This raises the issue of the relevant time period in which to consider that market share.

This dangerous probability of success must be calculated at the time that the defendant began engaging in the challenged anticompetitive conduct.[77] For example, the Eleventh Circuit has held

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72. Taylor Publ'g Co. v. Jostens, Inc., 216 F.3d 465, 474 (5th Cir. 2000) ("[A]ttempted monopolization claim necessarily involves conduct which has not yet succeeded . . . ."); Multiflex, Inc. v. Samuel Moore & Co., 709 F.2d 980, 990 (5th Cir. 1983); *see also* Mowery v. Standard Oil Co. of Ohio, 463 F. Supp. 762, 772 (N.D. Ohio 1976), *aff'd*, 590 F.2d 335 (6th Cir. 1978) ("Of course by definition an Attempt to monopolize pertains to an unsuccessful monopolist, so the mere fact that plaintiff failed to show that the defendant possessed monopoly power in the relevant market does not dispose of plaintiff's claim of attempted monopoly.").

73. Lektro-Vend Corp. v. Vendo Co. (*Lektro-Vend II*), 660 F.2d 255, 270 (7th Cir. 1981) (citing Kearney & Trecker Corp. v. Giddings & Lewis, Inc., 452 F.2d 579 (7th Cir. 1971)).

74. *See* Z-Tel Commc'ns, Inc. v. SBC Commc'ns, Inc., 331 F. Supp. 2d 513, 542 (E.D. Tex. 2004) ("An attempted monopolization claim necessarily involves conduct which has not yet succeeded; otherwise, the plaintiff would bring an actual monopolization claim.").

75. Shoppin' Bag of Pueblo, Inc. v. Dillon Cos., 783 F.2d 159, 162 (10th Cir. 1986).

76. U.S. Anchor Mfg., Inc. v. Rule Indus., Inc., 7 F.3d 986, 999 (11th Cir. 1993) ("The principal measure of actual monopoly power is market share, and the primary measure of the probability of acquiring monopoly power is the defendant's proximity to acquiring a monopoly share of the market."); Richter Concrete Corp. v. Hilltop Concrete Corp., 691 F.2d 818, 826 (6th Cir. 1982) ("In order to be found liable for attempted monopolization, a firm must possess market strength that approaches monopoly power-the ability to control prices and exclude competition. Market strength is often indicated by market share."); *see, e.g.*, Rebel Oil Co. v. Atl. Richfield Co., 51 F.3d 1421, 1438 (9th Cir. 1995) (holding that the defendant's market share of forty-four percent is sufficient to show a dangerous probability of monopolization, if there are barriers to entry and expansion); Kelco Disposal, Inc. v. Browning-Ferris Indus. of Vt., Inc., 845 F.2d 404, 409 (2d Cir. 1988), *aff'd*, 492 U.S. 257 (1989) (holding that "the jury could reasonably have concluded that defendants had a dangerous probability of acquiring monopoly power" in part because "[d]uring the period in which defendants engaged in predatory pricing, their market share was above 55%"); Nobody in Particular Presents, Inc. v. Clear Channel Commc'ns, Inc., 311 F. Supp. 2d 1048, 1102 (D. Colo. 2004) ("A market share of 41% indicates that a firm has substantial economic power in the market, and, therefore, has the tools at its disposal to elevate its market share to monopolistic levels." (citing Colo. Interstate Gas Co. v. Nat. Gas Pipeline Co. of Am., 885 F.2d 683, 694 (10th Cir. 1989))).

77. *See* HDC Med., Inc. v. Minntech Corp., 474 F.3d 543, 550 (8th Cir. 2007) ("Dangerous probability of successes 'should be evaluated as of when the alleged anticompetitive events occurred.' " (citation omitted)); *U.S. Anchor Mfg.*, 7 F.3d at 994 ("In analyzing attempted

that "[w]hen determining whether an issue of fact exists as to whether defendant's actions presented a dangerous probability of defendant achieving a monopolist's market power, a court examines the relevant market and defendant's market power *before* the attempt to monopolize began."[78] Similarly, the Eighth Circuit has held that the dangerous probability of monopolization elements "should be evaluated as of when the alleged anticompetitive events occurred."[79] This principle is well established in antitrust law.[80] Courts should not analyze the dangerous probability element in hindsight. The Fifth Circuit has explained that "[w]hen evaluating the element of dangerous probability of success, we do not rely on hindsight but examine the probability of success at the time the acts occur."[81] State courts, too, have recognized that "the time to analyze whether there is a dangerous probability of monopolization is when the acts occur, not in hindsight."[82] The antitrust violation is complete if the defendant engages in exclusionary conduct with a specific intent to monopolize under circumstances where "the overt acts, had they been successful, would have led to control of the market."[83]

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monopolization's dangerous probability of success element, the estimate of market power is necessarily speculative to some extent because it requires an evaluation of future behavior by market participants, viewed at the time the alleged attempt began."); *id.* at 1000 ("[I]t is usually necessary to evaluate the prospects for monopolization as they existed when the alleged attempt began."); *Multiflex*, 709 F.2d at 992 ("The time to examine 'dangerous probability' is when the acts occur."); Conceptual Eng'g Assocs., Inc. v. Aelectronic Bonding, Inc., 714 F. Supp. 1262, 1270 (D.R.I. 1989) ("[T]he 'dangerous probability' of successful monopolization must be determined as of the time the acts occurred." (citations omitted)); *see also* Multistate Legal Studies, Inc. v. Harcourt Brace Jovanovich Legal & Prof'l Publ'ns, Inc., 63 F.3d 1540, 1554 (10th Cir. 1995) ("The [market] share that is relevant for determining whether the defendant can satisfy the 'dangerous probability of success' requirement of attempted monopolization should be either that which he possesses at the time of litigation or the largest share he possessed during the period of the alleged offense." (quoting PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶ 711.2d, 835.2b. (Supp. 1994))).

78. McGahee v. N. Propane Gas Co., 858 F.2d 1487, 1505 (11th Cir. 1988) (emphasis added).

79. Gen. Indus. Corp. v. Hartz Mountain Corp., 810 F.2d 795, 807 (8th Cir. 1987).

80. *See, e.g.*, Taylor Publ'g Co. v. Jostens, Inc., 216 F.3d 465, 475 (5th Cir. 2000) ("[W]e look to the defendant's conduct and the market *at the time the conduct occurred*, rather than evaluating the conduct's effects after-the-fact." (emphasis added)); Int'l Distribution Ctrs., Inc. v. Walsh Trucking Co., 812 F.2d 786, 791 (2d Cir. 1987) ("A dangerous probability of monopoly may exist where the defendant firm possesses a significant market share *when it undertakes* the challenged anticompetitive conduct." (emphasis added)); Cont'l Guest Servs. Corp. v. Int'l Bus Servs., Inc., 939 N.Y.S.2d 30, 36 (App. Div. 2012) (quoting *Int'l Distribution Ctrs., Inc.*, 812 F.2d at 791).

81. United States v. Am. Airlines, Inc., 743 F.2d 1114, 1118 (5th Cir. 1984).

82. Tex. Disposal Sys. Landfill, Inc. v. Waste Mgmt. Holdings, Inc., 219 S.W.3d 563, 592 (Tex. App. 2007) (citing *Multiflex*, 709 F.2d at 991).

83. Lektro-Vend Corp. v. Vendo Corp. (*Lektro-Vend I*), 500 F. Supp. 332, 350 (N.D. Ill. 1980), *aff'd sub nom.*, *Lektro-Vend II*, 660 F.2d at 358; *see also* Am. Tobacco Co. v. United States, 328 U.S. 781, 785 (1946) (describing attempted monopolization as "the employment of methods, means and practices which would, if successful, accomplish monopolization, and which, though falling short, nevertheless approach so close as to create a dangerous probability of it").

Recognizing that the attempted monopolization claim condemns failed efforts that had a dangerous probability of success at the time the anticompetitive conduct commenced, antitrust law does not allow the defendant's subsequent lack of monopoly power to exonerate the defendant's anticompetitive conduct. Courts have made clear that a defendant's "drop in market share does not defeat an attempted monopolization claim when there is evidence to support the claim."[84] This makes sense given that the attempted monopolization component of Section Two of the Sherman Act punishes endeavors, not victories. Because the attempted monopolization cause of action focuses on failed attempts to monopolize, the failure to achieve actual monopoly power does not mean that there was never a dangerous probability of success.[85] As the Fifth Circuit has explained, "The fact that a plan violative of the spirit of the antitrust laws ultimately fails does not inexorably lead to the conclusion that there was no 'dangerous probability of success.' "[86] More profoundly, the Tenth Circuit observed that "[s]imply because a plan fails to succeed does not mean there was no probability that it could have succeeded. A flipped coin which lands heads still had a 50% chance of landing tails before it was flipped."[87]

1. Courts Invite Hindsight Bias by Examining Subsequent Market Performance

Despite the rule that factfinders should evaluate the dangerous probability of monopolization element as of the time when the defendant engaged in anticompetitive conduct, several courts have nonetheless invited hindsight bias by examining the defendant's market performance in the years following its anticompetitive conduct. Defendants often ask courts to weigh heavily any "subsequent loss of market share" as "highly relevant" to show their lack of market power.[88]

84. *Multiflex*, 709 F.2d at 992 (discussing Broadway Delivery Corp. v. United Parcel Serv. of Am., Inc., 651 F.2d 122 (2d Cir. 1981)).

85. *See Tex. Disposal Sys. Landfill*, 219 S.W.3d at 592 ("Just because the defendant does not ultimately achieve a monopoly does not mean there was not a dangerous probability that the defendant would succeed." (citing *Multiflex*, 709 F.2d at 991)).

86. Gen. Indus. Corp. v. Hartz Mountain Corp., 810 F.2d 795, 807 (8th Cir. 1987) ("The fact that a plan violative of the spirit of the antitrust laws might ultimately fail does not lead to the conclusion that there was no dangerous probability of success." (citing *Multiflex*, 709 F.2d at 992)).

87. Colo. Interstate Gas Co. v. Nat. Gas Pipeline Co. of Am., 885 F.2d 683, 697 n.20 (10th Cir. 1989).

88. *See, e.g.*, White Mule Co. v. ATC Leasing Co., 540 F. Supp. 2d 869, 893 (N.D. Ohio 2008) ("According to the defendants, failure of the alleged monopoly scheme proves there was never any 'dangerous probability' of its success."); Robert's Haw. Sch. Bus, Inc. v. Laupahoehoe Transp. Co.,

Some courts have accepted these invitations.[89] Most notably, the Seventh Circuit held that the defendant's "subsequent market performance" is relevant to determining whether defendants in attempted monopolization cases ever had a dangerous probability of monopolization.[90] Several courts have since relied on this Seventh Circuit precedent to hold that in calculating the probability that the defendant's anticompetitive conduct would result in monopolization, factfinders may consider "the defendant's subsequent market performance," among other variables.[91]

Courts have proffered several reasons why the defendant's subsequent market performance may be relevant in attempted monopolization cases. Some courts treat subsequent market performance as relevant to the defendant's "capacity to monopolize."[92] While noting that "actual effects are not by themselves necessary to sustain an attempted monopolization claim," the Fifth Circuit has nonetheless asserted that the "actual effects of a defendant's conduct might be relevant to determining its predatory nature, the defendants' intent, or the state of the market."[93] The court did not elaborate on the reasoning behind its assertion. Lower courts have nevertheless

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91 Haw. 224, 255–56 (1999) (explaining the defendant's argument for the relevance of a subsequent loss of market share).

89. Some courts, however, correctly decline such invitations. For example, in *In re Mushroom Direct Purchaser Antitrust Litig.*, 514 F. Supp. 2d 683 (E.D. Pa. 2007), the defendants faulted the plaintiffs' complaint for "contain[ing] no allegations regarding subsequent market performance, which 'belies any dangerous probability of successful monopolization.' " *Id.* at 701. While the court did not hold such evidence to be irrelevant—as it should have—the judge did conclude that "the absence of allegations concerning subsequent market performance is not sufficient as a basis for a motion to dismiss." *Id.*

90. *Lektro-Vend II*, 660 F.2d at 270–71:

> A subsequent failure to achieve monopoly status cannot itself vitiate a claim of attempted monopoly where other evidence substantially supports the attempt without eviscerating the entire attempt offense. But Kearney does not forbid consideration of subsequent market performance to evaluate the existence of the alleged attempt as the plaintiffs contend.

91. *See, e.g.*, G. Heileman Brewing Co. v. Anheuser-Busch, Inc., 676 F. Supp. 1436, 1474 (E.D. Wis. 1987), *aff'd*, 873 F.2d 985 (7th Cir. 1989):

> In evaluating whether it was possible for the defendant to achieve its goal of monopoly power at the time the alleged anticompetitive events occurred, the court can consider: the defendant's market power, including sales and profits; the defendant's subsequent market performance; the size and number of competitors in the market; increasing or decreasing concentration within the relevant market; and the defendant's capacity to control prices and exclude competitors.

92. *Lektro-Vend II*, 660 F.2d at 271 ("We agree with the district court that Vendo's market performance subsequent to the alleged attempts, while by no means dispositive, is at least relevant to Vendo's capacity to monopolize at the time of the supposed attempts.").

93. Taylor Publ'g Co. v. Jostens, Inc., 216 F.3d 465, 474–75 (5th Cir. 2000).

interpreted the Fifth Circuit's language as "recogniz[ing] that such evidence" of the attempted-monopolization defendant's lack of success "may be relevant, considered with other factors, to show that there was no dangerous probability of success at the time the predatory scheme occurred."[94] While claiming to apply the correct legal standard—of examining the probability at the time of predation—the court's language reflects the classic hindsight-bias trap of using post-event facts to measure pre-event probabilities.

Courts have apparently sought to honor the rule that Section Two condemns certain would-be monopolists by holding that evidence of subsequent market performance is not dispositive; the evidence is merely "relevant and admissible."[95] This distinction, however, is probably not sufficient, given the nature of cognitive biases.[96] Hindsight bias may trump any rule that renders subsequent market performance nondispositive because factfinders may *subconsciously* treat the subsequent market performance as dispositive even if they know that they are not supposed to do so.[97] Put simply, to examine subsequent market performance is to invite hindsight bias.

2. Examples of Hindsight Bias in Attempted Monopolization Cases

Despite courts claiming that they will not treat subsequent market performance as dispositive, attempted monopolization jurisprudence is littered with examples of courts falling victim to hindsight bias. This hindsight bias is sometimes explicit, but is often subtle. This Section reviews both forms, including examples of courts finding that the plaintiffs could not possibly prove that the defendant had a dangerous probability of monopolizing the market because market entry occurred after the defendant began its anticompetitive conduct. Many courts concentrate on a defendant's subsequent loss of market share, even if that decline occurred *after* the attempted

94. GMA Cover Corp. v. Saab Barracuda LLC, No. 4:10-CV-12060, 2012 WL 642739, at *9 n.6 (E.D. Mich. Feb. 8, 2012), *report and recommendation adopted*, No. 10-CV-12060, 2012 WL 639528 (E.D. Mich. Feb. 28, 2012).

95. Berkey Photo, Inc. v. Eastman Kodak Co., 603 F.2d 263, 273 n.11 (2d Cir. 1979) ("The precipitous decline, beginning in 1976, of Kodak's share of the camera market was evidence that the jury could consider, although it was not dispositive."); Robert's Haw. Sch. Bus, Inc. v. Laupahoehoe Transp. Co., 91 Haw. 224, 255–56 (1999) ("We agree with appellees that subsequent performance is relevant and admissible; however, subsequent market performance is not dispositive.").

96. Courts seem to conflate relevant and admissible even though relevant evidence may be inadmissible due to its prejudicial effect. *See infra* notes 335–337 and accompanying text.

97. *See infra* notes 299–314 and accompanying text.

monopolization claim has been filed, including market share declines at the time of trial. As well as examining the defendant's post-conduct market situation, many courts rely on the plaintiff's eventual survival as dispositive evidence that the defendant could not have monopolized the market.

In some cases, courts are almost explicit in their hindsight bias. In *Lektro-Vend Corp. v. Vendo Corp.*, the plaintiff challenged the defendant's imposition and enforcement of illegal restrictive covenants as an attempt to monopolize the relevant market of coin-operated vending machines for the sale of food, beverages, and cigarettes in the United States.[98] Although the challenged conduct occurred in 1959, the court focused on the defendant's declining market share in the early 1960s through the mid-1970s.[99] In doing so, the district court opined that "rather than speculating as to what would happen in the future (as most courts must of necessity do in evaluating alleged attempts to monopolize), *this court has the benefit of observing what actually happened in the marketplace*. [The defendant] did not achieve a monopoly or come dangerously close."[100] This is the very definition of hindsight bias: the court *explicitly* used the actual outcome to conclude that the ex ante probability of monopolization was impermissibly low. The court said that the defendant's failure was "not dispositive" but then essentially treated it so.[101]

Other courts have similarly exhibited overt hindsight bias. For example, the First Circuit has held that even though a defendant's probability of monopolization should be calculated as of the time of its anticompetitive conduct, "later effects sometimes indicate the nature of that potential. . . . We would find attempt claims presumptively implausible if the challenged conduct has been in place for at least two years and the remaining market remains robustly competitive as evidenced by ongoing entry, profitability of rivals, and stability of their

98. *Lektro-Vend I*, 500 F. Supp. at 350.

99. *Lektro-Vend II*, 660 F.2d at 270.

100. *Lektro-Vend I*, 500 F. Supp. at 356 (emphasis added).

101. *Id.* at 356. On appeal, the plaintiff pointed out that in analyzing an attempted monopolization claim the court should not rely on the defendant's post-conduct market shares. *Lektro-Vend II*, 660 F.2d at 270. Although the Seventh Circuit correctly observed that the defendant's "subsequent failure to achieve monopoly status" was not dispositive, it nevertheless reasoned that the defendant's "market performance subsequent to the alleged attempts . . . [was] at least relevant to [its] capacity to monopolize at the time of the supposed attempts." *Id.* at 271. In affirming the district court's hindsight-riddled opinion, the Seventh Circuit, too, relied heavily on the defendant's loss of market share in the several years after its challenged conduct. *Id.*

aggregate market share.' "[102] Some courts seem to expect—or require—that anticompetitive conduct will result instantly or rapidly in actual monopolization and treat the failure to do so as proof that no dangerous probability of monopolization ever existed.[103] Other courts have opined that no dangerous probability of monopolization exists unless the plaintiff presents evidence that the defendant was, in fact, "able to exclude actual or potential competition" from the relevant market.[104] In so holding, courts are essentially saying that factfinders must use ex post outcomes to determine ex ante probabilities. This approach effectively mandates hindsight bias.

Antitrust opinions exhibit potential hindsight bias in attempted monopolization cases in several ways. For example, some courts commit hindsight bias by asking whether any market entry occurred after the defendant began its anticompetitive conduct.[105] More commonly, courts often hold that if the defendant's market share decreased after the defendant began engaging in anticompetitive conduct, then there could not have been a dangerous probability of monopolization. For example, in *McGahee v. Northern Propane Gas Co.*, the plaintiff challenged the defendant's alleged predatory pricing as an attempt to monopolize the market in propane in some areas of Georgia.[106] The district court granted summary judgment in favor of the defendant because the defendant's market share declined during the two years following the below-cost pricing. The court reasoned that "such declines [are] evidence that an alleged attempt to monopolize is not dangerously close

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102. Springfield Terminal Ry. Co. v. Can. Pac. Ltd., 133 F.3d 103, 110 (1st Cir. 1997) (quoting PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 807f, at 360–61 (1996)).

103. Mullis v. Arco Petroleum Corp., 502 F.2d 290, 294 (7th Cir. 1974) ("[The plaintiff] characterizes the alleged violation as an attempt to monopolize, although presumably, if his theory were valid, *as soon as* the termination becomes effective, the attempt would ripen into a completed monopolization." (emphasis added)).

104. Rea v. Ford Motor Co., 497 F.2d 577, 590 (3d Cir. 1974) (finding that "since there was no evidence that [defendants] were able to exclude actual or potential competition," there was no "dangerous probability of achieving monopolization in a relevant market").

105. One district court recently granted summary judgment to an attempted monopolization defendant, in part, because "a jury could not reasonably find there was a dangerous probability that defendant would monopolize the market . . . [because d]uring the time period in question, at least one competitor . . . was able to enter the market." Savory Pie Guy, LLC v. Comtec Indus., Ltd., No. 14 CV 7527 (VB), 2016 WL 7471340, at *11 (S.D.N.Y. Dec. 28, 2016).

106. 658 F. Supp. 189 (N.D. Ga. 1987), *rev'd*, 858 F.2d 1487 (11th Cir. 1988). The Eighth Circuit reversed, noting that it was " 'undisputed' that [the defendant] had sixty or sixty-five percent of the relevant market *when the alleged predatory pricing began*." *McGahee*, 858 F.2d at 1506 (emphasis added). Such a market share, the court held, was "a sufficiently large platform from which such a scheme could be launched to create a genuine issue of material fact as to whether there was a dangerous probability that Northern Propane would succeed in achieving a monopoly." *Id*. The appellate court, in other words, did not fall into the hindsight-bias trap.

to success. Consequently, even assuming *arguendo* that defendant attempted to achieve a monopoly through predatory price cuts, the Court finds no evidence that such a scheme had a dangerous probability of success."[107] Many courts have similarly treated the defendant's subsequent loss of market share as sufficient to defeat an attempted monopolization claim.[108]

Many courts commit hindsight bias by focusing on the defendant's market share after antitrust litigation is filed. For example, in *Nifty Foods Corp. v. Great Atlantic & Pacific Tea Co.*, the Second Circuit affirmed dismissal of a plaintiff's attempted monopolization claims.[109] When the defendant began its allegedly anticompetitive conduct, it had a market share of 54.5 percent.[110] The following year, the plaintiff went out of business and, one year later, it filed its attempted monopolization claim against the defendant.[111] Yet the court used the defendant's decline in market share up to three years *after* the antitrust complaint had been filed to conclude that no reasonable jury could find that the defendant had a dangerous probability of monopolizing the market when it began engaging in anticompetitive conduct.[112] This represents hindsight bias because the question of whether the defendant possessed a dangerous probability of monopolization should have been answered in the context of the defendant's 54.5 percent market share—which was sufficiently high to satisfy the dangerous probability element[113]—not from the perspective of the state of the market several years into the litigation. Similarly, in *Advisory Information & Management Systems, Inc. v. Prime Computer,*

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107. *McGahee*, 658 F. Supp. at 196–97 (citation omitted).

108. *See, e.g.*, Arthur S. Langenderfer, Inc. v. S.E. Johnson Co., 917 F.2d 1413, 1431 (6th Cir. 1990) ("The limestone market share of defendants was, at most, around thirty percent and decreasing. . . . There is no substantial evidence that defendants were capable of, much less achieved, the destruction of competition in limestone in any relevant market."); Advanced Health-Care Servs., Inc. v. Giles Memorial Hosp., 846 F. Supp. 488, 494 (W.D. Va. 1994) ("If the defendants' market share is declining and/or other competitors' market shares are rising, then the defendants can hardly possess monopoly power."); Duke v. Browning-Ferris Indus. of Tenn., Inc., No. W2005-00146-COA-R3CV, 2006 WL 1491547, at *6 (Tenn. Ct. App. May 31, 2006) (affirming summary judgment for defendant because "[t]here is no evidence in the record to refute [the] assertion that [the defendant's] market share actually declined during the relevant period"); *see also* Richter Concrete Corp. v. Hilltop Concrete Corp., 691 F.2d 818, 826 (6th Cir. 1982) (noting that defendant's market share declined from approximately 40% to approximately 30%).

109. 614 F.2d 832, 841 (2d Cir. 1980).

110. *Id.*

111. The lawsuit also alleged breach of contract, tortious interference with contract, and other non-antitrust claims. *Id.* at 835.

112. *Id.* at 841.

113. *See, e.g.*, Kelco Disposal, Inc. v. Browning-Ferris Indus. of Vt., Inc., 845 F.2d 404, 409 (2d Cir. 1988) (noting that defendant's "market share was above 55%"), *aff'd*, 492 U.S. 257 (1989).

Inc., although the defendant's challenged conduct occurred in 1982, the court granted the defendant's motion for summary judgment by invoking market share data from 1984, the year in which the court actually granted the motion.[114] Because the defendant's market share remained stable—and did not increase—after its allegedly anticompetitive conduct, the court concluded that the plaintiff "demonstrated no significant probability of monopolization."[115] It is not uncommon for courts to invoke a defendant's post-complaint market share to assert that pre-complaint it had no probability of monopolizing the market.[116] Such use of post-conduct evidence to calculate ex ante probabilities is the essence of hindsight bias.

Courts also routinely hold that a plaintiff's attempted monopolization claim must fail as a matter of law if the plaintiff cannot prove that the defendant currently possesses monopoly power. For example, in *Indiana Grocery Co. v. Super Valu Stores, Inc.*, the Seventh Circuit reviewed an opinion in which the district court held that the defendant had no dangerous probability of monopolizing the market because the defendant did not possess the power to control price during pre-trial discovery.[117] The district judge went on to look at the current configuration of the relevant market to find no dangerous probability of monopolization existed in the past because no monopoly existed in the present.[118] Despite the district court's hindsight reasoning, the Seventh Circuit affirmed the judgment while noting that the market did have barriers to entry, the market price did increase, and the defendant did manage to discipline its rivals against engaging in vigorous price competition.[119] This evidence suggests that the defendant may have, in

114. 598 F. Supp. 76, 86, 90 (M.D. Tenn. 1984).

115. *Id.* at 87.

116. *See, e.g.*, *Lektro-Vend I*, 500 F. Supp. 332 (finding no dangerous probability of monopolization based on the defendant's market share in 1989 and 1990 even though the antitrust lawsuit challenged conduct prior to 1988); Allen Ready Mix Concrete Co. v. John A. Denie's Sons Co., No. C-69-359, 1972 WL 553, at *13–15 (W.D. Tenn. Apr. 13, 1972) (reversing jury verdict in favor of plaintiff and finding no dangerous probability of success by discussing events in 1970 even though the claim was filed in 1969).

117. *See* 864 F.2d 1409, 1410 (7th Cir. 1989), *aff'g*, Ind. Grocery Co. v. Super Valu Stores, Inc., 684 F. Supp. 561, 579 (S.D. Ind. 1988) ("The plaintiffs' evidence on monopoly power comes from Dr. Marion. When asked at pages 50 to 52 of his deposition, 'Now is it your position that [the defendant] *has the power to control prices* in Indianapolis' he replied, 'No.' " (emphasis added)).

118. *See Ind. Grocery*, 684 F. Supp. at 579 ("Plaintiffs' response is devoid of any evidence that [the defendant] came dangerously close to acquiring the forbidden monopoly power as *there remains a market* with at least two strong participants . . . and other participants . . . ." (emphasis added)).

119. *Indiana Grocery*, 864 F.2d at 1415–16.

fact, achieved monopoly power.[120] If so, the district court committed hindsight bias while misanalyzing the ex post evidence that it should not have relied on in the first place. Similarly, the district court in *MMK Group, LLC v. SheShells Co.* dismissed the plaintiff's claim that the defendant illegally attempted to monopolize the market for breast shield products because the plaintiff's "allegation that [the defendant] 'intends . . . to become a dominant competitor' in certain markets is effectively an admission by [the plaintiff] that [the defendant] does not yet possess sufficient market power to control prices and exclude competition."[121] The "power to control prices or exclude competition" is the classic definition of actual monopoly power.[122] The fact that the defendant "does not *yet* possess" such monopoly power[123] is not a reason to dismiss an attempted monopolization claim; it is instead the hallmark of this antitrust cause of action because if the defendant did possess monopoly power, the claim would be for actual monopolization, not attempted monopolization.

In a similar vein, courts sometimes look at the defendant's market share at the time of the trial in order to hold that no dangerous probability of success existed at the time the defendant engaged in the challenged anticompetitive conduct. For example, in *Buehler AG v. Ocrim S.p.A.*, the district court found that the antitrust defendant had no dangerous probability of monopolizing the market because its market share at the time of trial was "legally insignificant."[124] Likewise, the Fifth Circuit in *Deauville Corp. v. Federated Department Stores, Inc.* affirmed a directed verdict for the antitrust defendant because "[t]he trial record indicates that *at the time of trial* [one new competitor] had opened and [another new competitor] was being planned. . . . In a market which would allow such competition there was no dangerous probability that an attempt to monopolize could succeed."[125] Again, the court used ex post outcomes to calculate ex ante probabilities, which is the definition of hindsight bias.

In addition to discussing the defendant's market situation after it engaged in anticompetitive conduct, many courts point to a plaintiff's

120. United States v. Microsoft Corp., 253 F.3d 34, 51 (D.C. Cir. 2001).

121. 591 F. Supp. 2d 944, 962 (N.D. Ohio 2008).

122. *See* United States v. E.I. du Pont de Nemours & Co., 351 U.S. 377, 391 (1956) ("Monopoly power is the power to control prices or exclude competition.").

123. *See MMK Grp.*, 591 F. Supp. 2d at 962 (emphasis added).

124. 836 F. Supp. 1305, 1326 (N.D. Tex. 1993), *aff'd sub nom.*, 34 F.3d 1080 (Fed. Cir. 1994); *see infra* notes 134–137 and accompanying text (explaining how the court's hindsight bias led to wrong result in case).

125. 756 F.2d 1183, 1190–92 (5th Cir. 1985) (emphasis added).

ultimate profitability, success, or survival as proof that the defendant never possessed a dangerous probability of monopolizing the market. For example, the Second Circuit has reasoned that when a plaintiff "has remained an effective competitor" with the defendant despite the latter's exclusionary conduct, the plaintiff's "claim of attempted monopolization is without merit."[126] Less dramatically, the First Circuit has opined that "where a plaintiff remains profitable and in fact has expanded its market share since the allegedly anticompetitive conduct has begun, it faces an uphill battle in proving such a dangerous probability exists."[127] When the defendant's rivals remain profitable in the market years after the challenged conduct, the First Circuit treats any attempted monopolization claims as "presumptively implausible."[128] Other courts routinely treat an antitrust plaintiff's success—or even mere nonclosure—as strong evidence that there was never a dangerous probability that the defendant could monopolize the market.[129] This is analogous to deciding that the victim injured in an attempted murder scheme has no cause of action if the intended victim survives the attack. Such logic makes no sense when one considers that some targets of anticompetitive conduct remain in business because they spend resources to thwart the defendant's predation. The attempt may fail precisely because the plaintiff-competitors targeted by the anticompetitive conduct have responded and blunted the exclusionary effect of the defendant's misdeeds by undertaking expensive countermeasures.[130] The would-be monopolist should not be absolved of liability after imposing such unnecessary costs on its rivals.[131] The expenses incurred by the plaintiff constitute antitrust injury.[132] That

126. Twin Labs., Inc. v. Weider Health & Fitness, 900 F.2d 566, 571 (2d Cir. 1990).

127. Sterling Merch., Inc. v. Nestle, S.A., 656 F.3d 112, 126 (1st Cir. 2011).

128. *Id.*

129. *See, e.g.*, Savory Pie Guy, LLC v. Comtec Indus., Ltd., No. 14 CV 7527 (VB), 2016 WL 7471340, at *11 (S.D.N.Y. Dec. 28, 2016) (finding no dangerous probability of monopolization—and granting summary judgment to Defendant—in part because Plaintiff remained in business after Defendant's allegedly anticompetitive conduct took place); Compuware Corp. v. Int'l Bus. Machs. Corp., 366 F. Supp. 2d 475, 488 (E.D. Mich. 2005) (same).

130. *Cf.* Ass'n for Intercollegiate Athletics for Women v. NCAA, 735 F.2d 577, 585 (D.C. Cir. 1984) ("Attempted monopolization consists of a specific intent to acquire monopoly power by means of exclusionary conduct and a dangerous probability that such conduct, *if unchecked*, would produce the desired monopoly." (emphasis added) (citing Times-Picayune Publ'g Co. v. United States, 345 U.S. 594, 626–27 (1953); and Swift & Co. v. United States, 196 U.S. 375, 396, 402 (1905))).

131. *See* Multiflex, Inc. v. Samuel Moore & Co., 709 F.2d 980, 992 (5th Cir. 1983) ("We do not accept the use of hindsight plus evidence of plaintiff's successful response to the defendant's acts to exonerate an antitrust violator who did cause damage to the plaintiff.").

132. *See, e.g.*, White Mule Co. v. ATC Leasing Co. LLC, 540 F. Supp. 2d 869, 891 (N.D. Ohio 2008) ("White Mule's injuries—loss of sales to third parties due to defendants' assertion of rights

those countermeasures prove successful does not negate the offense nor render the money spent on them nonrecoverable.

The fact that a court fell victim to hindsight bias does not necessarily mean that the court ultimately reached the wrong conclusion. Even in cases in which judges cite the defendant's post-conduct lack of monopolization, other evidence—not tainted by hindsight bias—may independently warrant rejection of the plaintiff's attempted monopolization claim. In some cases, courts find that the defendant never enjoyed a dangerous probability of monopolizing the market because it had an insufficiently low market share before its anticompetitive conduct and its market share decreased after it initiated that conduct. In some markets, regulatory features effectively prevented any future monopolization.[133]

In some opinions that exhibited hindsight bias, however, a strong case can be made that the bias led the court to improperly dispose of the case. For example, in *Buehler AG v. Ocrim S.p.A.*, the court held that if the market were defined as "European roller mills in the United States,"[134] then there was no dangerous probability of the defendant monopolizing the market because the defendant's market position had weakened by the year the trial took place.[135] Yet, under that same market definition, the court had previously noted that the defendant would possess approximately sixty percent of the relevant

under fraudulently obtained patents; significant attorney's fees and litigation costs in defending against ATC's patent infringement suit—flow directly from the alleged *Walker Process* antitrust violation.").

133. For example, in *National Reporting Co. v. Alderson Reporting Co.*, the defendant allegedly attempted to monopolize the market for court reporting in federal tax court by securing an exclusive contract through predatory bidding during the 1980 open-bid period. 763 F.2d 1020, 1021 (8th Cir. 1985). The plaintiff claimed that it was driven from the market because of the defendant's below-cost bid, and it sued for attempted monopolization. *Id.* The Eighth Circuit reversed a district court verdict in the plaintiff's favor. *Id.* at 1022. The appellate panel invoked the fact that one year after its predatory conduct, the defendant lost the exclusive contract because of its poor performance. *Id.* at 1025. This smacks of hindsight bias because the court examined whether the defendant's conduct actually enabled it to price like a monopolist and, finding it did not, held that there was no dangerous probability of monopolization. But the Eighth Circuit's ultimate holding was probably correct, as the court also noted that the tax court had a policy of requiring its court-reporting contracts to undergo a re-bidding process if the current provider sought to raise prices, which meant that the defendant "could not control prices, because if it tried to raise its price, the contract would again be up for bids." *Id.* at 1023. Given that the tax court's policy successfully prevented unchecked monopoly pricing, any hindsight bias on the part of the Eighth Circuit panel resembles harmless error.

134. 836 F. Supp. 1305, 1310 (N.D. Tex. 1993) ("A roller mill is a machine in a flour mill that grinds raw wheat or other grains in the production of flour."), *aff'd sub nom*, 34 F.3d 1080 (Fed. Cir. 1994).

135. *Id.* at 1326 ("The evidence clearly shows a trend of increased entries to the market, a strengthening showing by the sellers already there, and, at least for this year, a weakening showing by Plaintiffs.").

market.[136] That should be sufficient to create a dangerous probability of monopolization.[137] Similarly, some courts have held that there is no dangerous probability of monopolization where the defendant's "market share has remained stable and low, despite its anticompetitive acts and objectives."[138] This framing concedes that the defendant has engaged in anticompetitive conduct with an anticompetitive intent and yet exonerates the defendant from antitrust liability if the conduct ultimately failed to achieve the defendant's improper goal.

Compounding the problem of hindsight bias, sometimes courts misread the significance of the post-conduct evidence that they are considering. In 1987, Barr Laboratories sued Abbott Laboratories for illegally attempting to monopolize the market for erythromycin, an oral antibiotic for adults.[139] Barr accused Abbott of entering exclusive dealing arrangements, engaging in price discrimination, and refusing to sell necessary inputs, all in an effort to exclude competitors.[140] The district court granted summary judgment to the defendant.[141] In affirming the district court's decision and finding that the defendant pharmaceutical company "did not have a reasonable probability of successfully monopolizing the adult oral erythromycin market,"[142] the Third Circuit relied on data about market conditions in 1990, three years after the plaintiff initiated its antitrust lawsuit.[143] The court, however, did not properly analyze the ex post data. In looking at market trends from 1984 through 1990, the court misinterpreted the significance of the evidence. For example, the court described prices as "stable" despite the fact that prices had increased sixty-two percent during this period.[144] Not only did prices increase, but so did Abbott's market share—two percent as measured in unit sales and fourteen percent as measured in revenue.[145] All of this data shows that the defendant was succeeding in its attempt to monopolize the market, but the court somehow misconstrued this as evidence of failure and converted that into a low probability of success at the time the

136. *Id.*

137. *See supra* note 76.

138. Compuware Corp. v. Int'l Bus. Machs. Corp., 366 F. Supp. 2d 475, 488 (E.D. Mich. 2005).

139. Barr Labs., Inc. v. Abbott Labs., 978 F.2d 98, 104 (3d Cir. 1992).

140. *Id.*

141. *Id.* at 101.

142. *Id.* at 113.

143. *Id.* at 103–04.

144. *Id.* at 104.

145. *Id.* at 103 ("[Abbott's] market share increased 14%, rising from approximately 45% in 1984 to 59% in 1990.").

defendant began its anticompetitive conduct.[146] In cases like these, courts simultaneously give significant weight to post-conduct evidence that might be best avoided and misconstrue the significance of that evidence.

In sum, because hindsight bias makes events seem logical in retrospect,[147] factfinders may find ex post reasons for why failure to monopolize makes sense and thus see the failure as inevitable. And when failure is pre-ordained, there must not have been a dangerous probability of success and the plaintiff's attempted monopolization claim must fail. When courts treat the defendant's subsequent failure as evidence that the failure was "'relatively inevitable' before it happened," that is the definition of hindsight bias.[148] The above cases represent examples of quintessential hindsight bias because courts relied upon facts subsequent to the time at which they were supposed to make their probability determination in order to calculate earlier probabilities. Of course, many courts correctly analyze the relevant evidence to avoid hindsight bias, noting the irrelevance of the defendant's subsequent loss of market share[149] or the plaintiff's survival in the market.[150] Nevertheless, some courts not only examine evidence in hindsight but misinterpret the evidence. In short, the threat of hindsight bias is ever present in attempted monopolization litigation.[151]

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146. The court also mishandled the significance of market entry. The Third Circuit held that Abbott had "no reasonable probability of success in any attempt to monopolize" because "the number of manufacturers of erythromycin products increased from twenty-six in 1984 to thirty-two in 1990." *Id.* at 113. The court committed two important mistakes. First, of those thirty-two pharmaceutical companies, the court admitted that "ten had no sales [in 1990], apparently indicating their exit from the market." *Id.* at 114. Thus, there was not an increase in market participants. Second, and more importantly, Abbott's market share increased despite this alleged new entry. *Id.* at 111. The primary reason that antitrust cares about new entrants is the assumption that new competitors will price discipline an actual or would-be monopolist. But these new firms could not prevent Abbott from behaving like a monopolist. After all, both Abbott's prices and its market share went up at a time that the Third Circuit claimed that competition was increasing. *Id.*

147. *See supra* notes 21–30 and accompanying text.

148. Fischhoff, *supra* note 19, at 341.

149. *See, e.g.*, Omni Healthcare Inc. v. Health First, Inc., No. 613CV1509ORL37DAB, 2016 WL 4272164, at *20 (M.D. Fla. Aug. 13, 2016).

150. *See, e.g.*, Scripto-Tokai Corp. v. Gillette Co., No. CV-91-2862-LGB(JRX), 1994 WL 746072, at *8 (C.D. Cal. Sept. 9, 1994).

151. The cases discussed and cited in this Section necessarily underrepresent the amount of hindsight bias that occurs in attempted monopolization jurisprudence. In most instances, hindsight bias will go unrecorded because antitrust judges often do not state what time periods they are considering in order to conclude that the defendant's anticompetitive conduct did not create a dangerous probability of actual monopolization. Ultimately, it is impossible to know the extent to which hindsight bias influences judicial thinking in attempted monopolization cases. These cases nonetheless demonstrate that it does happen. Given the subconscious nature of

B. Predatory Pricing

Hindsight bias in antitrust law is not limited to evaluating the "dangerous probability of success" element of attempted monopolization claims. It also arises in predatory pricing cases. Predatory pricing is one form of anticompetitive conduct that can provide the basis for either a monopolization or attempted monopolization claim, though the latter is more common. Predatory pricing occurs when a firm charges a price below its cost in order to drive its competitors from the market (i.e., the predation phase) and, upon their exit, charge a monopoly price in an effort to recoup its losses (i.e., the recoupment phase).[152] In *Brooke Group v. Brown & Williamson Tobacco Corp.*, the Supreme Court articulated a two-element test for illegal predatory pricing: (1) the defendant charges a price that is below an "appropriate measure" of its costs,[153] and (2) the defendant had "a dangerous probability[ ] of recouping its investment in below-cost prices."[154] The probability of recoupment should be determined at the time that the defendant began engaging in below-cost pricing.[155]

Because the antitrust cause of action for predatory pricing asks factfinders to determine ex ante probabilities, it presents a risk of hindsight bias. The risk is similar to that demonstrated in attempted monopolization cases. This is not surprising; although predatory pricing has its own elements, they map onto the traditional elements of attempted monopolization. Pricing below cost represents a form of monopoly (or anticompetitive) conduct, and the dangerous probability of recoupment operates as an awkward stand-in for dangerous probability of monopolization.[156]

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cognitive bias, it is reasonable to believe that it occurs much more often than admitted in judicial opinions.

152. *See* Transamerica Comput. Co. v. IBM Corp., 698 F.2d 1377, 1384 (9th Cir. 1983) ("Predatory pricing occurs when a company that controls a substantial market share lowers its prices to drive out competition so that it can charge monopoly prices, and reap monopoly profits, at a later time.").

153. 509 U.S. 209, 222–23 (1993).

154. *Id*. at 224.

155. *See, e.g.*, GMA Cover Corp. v. Saab Barracuda LLC, No. 4:10-CV-12060, 2012 WL 642739, at *10 (E.D. Mich. Feb. 8, 2012) ("In short, *Brooke Group* requires a plaintiff asserting predatory pricing to show that, at the time of the predatory pricing, there was a "dangerous probability" that [the defendant] could recoup its losses by charging supracompetitive prices after [the plaintiff] was driven from the market."), *report and recommendation adopted*, No. 10-CV-12060, 2012 WL 639528 (E.D. Mich. Feb. 28, 2012).

156. *See* Christopher R. Leslie, *Predatory Pricing and Recoupment*, 113 COLUM. L. REV. 1695, 1746–51 (2013) (explaining the difference between a dangerous probability of monopolization and a dangerous probability of recoupment).

Courts create the risk of hindsight bias through antitrust opinions holding that judges evaluating predatory pricing claims should "explore not only whether recoupment was possible but also whether it in fact occurred."[157] In predatory pricing cases, some federal courts will dismiss a complaint that alleges a dangerous probability of the defendant controlling long-term prices "but fails to allege *actual recoupment* of losses, or any other facts allowing such an inference."[158] This standard requires judges to examine recoupment in retrospect.

Similarly, some courts have suggested that an alleged predator's failure to charge a supracompetitive price in the post-predation period "does have the 'tendency to make the existence of' that dangerous probability 'less probable than it would be without the evidence.' "[159] Examining the post-predation period invites hindsight bias because "it would be difficult for anyone to conclude both that recoupment had utterly failed and that [during the predation period, the defendant] had been likely to succeed."[160]

The Supreme Court seemed to invite lower courts to evaluate predatory pricing claims in hindsight in its most recent opinion on the subject. In *Brooke Group v. Brown & Williamson Tobacco Corp.*, the Court reviewed a jury verdict in favor of cigarette manufacturer Liggett, which had sued its rival Brown & Williamson ("B&W") for predatory pricing in the market for generic cigarettes.[161] At trial, Liggett argued that B&W wanted Liggett to raise the price of its low-

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The traditional test for attempted monopolization also requires the plaintiff to prove that the defendant possessed a specific intent to monopolize the market. Courts have focused less on the intent requirement, if at all, for predatory pricing claims. Some courts have required plaintiffs to show that the defendant had a predatory intent when pricing below cost. *See, e.g.*, McGahee v. N. Propane Gas Co., 858 F.2d 1487, 1496 (11th Cir. 1988); Richter Concrete Corp. v. Hilltop Concrete Corp., 691 F.2d 818, 823 (6th Cir. 1982). Others do not. *See, e.g.*, A.A. Poultry Farms, Inc. v. Rose Acre Farms, Inc., 881 F.2d 1396, 1401 (7th Cir. 1989). For a discussion of the intent requirement in predatory pricing cases, see Leslie, *supra*, at 1754–56.

157. Ashkanazy v. I. Rokeach & Sons, Inc., 757 F. Supp. 1527, 1543 (N.D. Ill. 1991) (discussing *Rose Acre*, 881 F.2d at 1403–04).

158. Edgenet, Inc. v. GS1 AISBL, 742 F. Supp. 2d 997, 1013 n.3 (E.D. Wis. 2010) (emphasis added) (dismissing predatory pricing claim for failure to sufficiently plead antitrust injury).

159. *GMA Cover*, 2012 WL 642739, at *9 n.6 (quoting FED. R. EVID. 401). The court did note, however, that "evidence that [the defendant] was not in fact able to charge a supracompetitive price does not by itself mean that there was not a dangerous probability that it would be able to do so at the time of the predatory pricing." *Id.* Thus, while the court did not treat failure to raise prices as dispositive, it did hold the evidence to be admissible and probative. *Id.* at *9. This is sufficient to invite hindsight bias. The *GMA Cover* court ultimately relied in part on the defendant's failure to succeed as "relevant" evidence that the defendant's exclusionary conduct did not entail a dangerous probability of success. *Id.* at *32–33.

160. Stephen Calkins, *The October 1992 Supreme Court Term and Antitrust: More Objectivity Than Ever*, 62 ANTITRUST L.J. 327, 401 (1994).

161. 509 U.S. 209, 219 (1993).

priced generic cigarettes, which were taking significant sales away from B&W's sales of branded cigarettes.[162] In order to coerce Liggett to raise its prices, B&W itself entered the market for generic cigarettes and priced below cost, with the implicit threat that B&W would engage in predatory pricing until Liggett raised the price of its generic cigarettes sufficiently high that they did not prevent B&W—and other tobacco firms—from raising the price of branded cigarettes.[163] Thus, B&W would suffer losses in the generic cigarette market but recoup these losses in the oligopolized market for branded cigarettes.[164]

The *Brooke Group* Court upheld a directed verdict for B&W notwithstanding the jury verdict in favor of Liggett.[165] In so holding, the Court's majority relied heavily on its perceptions of what happened in the relevant markets *after* B&W had engaged in below-cost pricing.[166] Lower courts have interpreted *Brooke Group* as standing for the proposition that "as part of inquiry into whether there was a reasonable possibility of recoupment, [the Supreme Court] examin[ed] whether the conduct alleged 'in fact produced supracompetitive prices.' "[167] Professor Stephen Calkins has explained that *Brooke Group* seems to instruct courts in predatory pricing cases to determine "whether with hindsight recoupment in fact occurred or would have occurred but for litigation."[168] The Court emphasized the lack of evidence of actual recoupment and "relied in part on subsequent events," which Professor Calkins explained "comes close to using hindsight to conclude that recoupment was not likely to succeed."[169] Although the opinion's hindsight analysis is not explicit, the Court's examination of subsequent events tainted its decision to overturn the jury verdict in favor of Liggett.[170]

Taking the Supreme Court's bait, defendants in predatory pricing sometimes argue that their failure to actually recoup their losses proves that there was never a dangerous probability of

162. *Id.* at 217.

163. *Id.*

164. *See* Leslie, *supra* note 156, at 1736–38 (explaining the strategy of recouping predatory pricing losses through oligopoly pricing).

165. *Brooke Grp.*, 209 U.S. at 243.

166. *See id.* at 241 ("The inevitable effect of this marketing effort was to expand the segment, as the new wholesalers recruited retail outlets to carry generic cigarettes.").

167. *GMA Cover*, 2012 WL 642739, at *9 n.6 (quoting *Brooke Grp.*, 509 U.S. at 233–38).

168. Calkins, *supra* note 160, at 400.

169. *Id.*

170. *See id.* at 400–01 ("Although the Court did not mention post-trial information, it would be difficult for anyone to conclude both that recoupment had utterly failed and that in 1984 it had been likely to succeed.").

recoupment. For example, when the government challenged American Airlines' pricing strategies against rival discount airlines as predatory pricing, the airline argued that "American's demonstrated *failure to actually recoup* on the core routes during the years after the alleged predation ended established that recoupment was not dangerously probable."[171] This argument is designed to invite hindsight bias.

The court arguably accepted the defendant's invitation. In granting summary judgment to the defendant, the court emphasized that the government expert's calculations "demonstrate that no substantial recoupment has occurred."[172] Although the government argued that recoupment had taken place on some airline routes, the district court concluded that the defendant had "failed to generate sufficient 'recoupment' to satisfy the 'losses' it supposedly incurred."[173] In particular, the district court emphasized that American had "failed to recoup its supposed losses" more than three years after its targeted rival had been driven from the Dallas–Colorado Springs route.[174] Looking at the four routes that formed the basis of the government's case in the aggregate, the district court stated that "American incurred predatory losses of some $41 million on the four routes. Yet, after years of supposed supra-competitive pricing, it has earned back about a quarter of this amount, with a current negative 'net sacrifice' still in excess of $30 million."[175] Given the lack of actual recoupment, the court concluded that "[t]his is not predation as defined by *Brooke Group*."[176] But predation—in the form of below-cost pricing—likely occurred if the defendant lost more than $40 million on the routes. While recoupment might not have occurred—*yet*—that does not mean that American Airlines had no reasonable probability of recoupment at the time that it used below-cost pricing to drive its rivals from the market. The court's decision was ultimately tarnished by hindsight bias.[177]

171. *See, e.g.*, Appellees' Brief, United States v. AMR Corp., 335 F.3d 1109 (10th Cir. 2003), (No. 01-3203), 2002 WL 32157028.

172. *AMR Corp.*, 140 F. Supp. 2d at 1212.

173. *Id.*

174. *Id.* at 1213 ("Professor Berry's recoupment analysis as to the DFW–COS route is consistent under both tests. Both show that American has failed to recoup its supposed losses, even with the passage of more than three years after Western Pacific left the route.").

175. *Id.*

176. *Id.*

177. Moreover, the *American Airlines* court also committed hindsight bias by way of syllogism. The court held that the predatory pricing plaintiff "must prove on the basis of objective evidence that a dangerous probability of recoupment exists" and that a defendant's "high market share" is insufficient evidence because the market may have "low entry barriers and other market factors rendering monopoly power unlikely." *Id.* at 1209. The court then asserted that "the most conclusive evidence of the lack of significant barriers to entry is actual entry." *Id.* (citing 2A PHILLIP E.

C. Anticompetitive Conspiracies

Attempted monopolization and predatory pricing claims are susceptible to hindsight bias, in part, because they require the factfinder to determine ex ante probabilities in an ex post world. But even antitrust claims that do not require calculating ex ante probabilities can induce hindsight bias. Section One of the Sherman Act condemns agreements that unreasonably restrain trade, such as price-fixing conspiracies.[178] Unlike attempted monopolization and predatory pricing claims, "there is no requirement that a conspiracy have a dangerous probability of success."[179] Even a failed price-fixing conspiracy violates Section One.[180] Nevertheless, hindsight bias exists in the evaluation of Section One claims. This Section focuses on a different—and more insidious—form of hindsight bias, in which courts

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AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 420b, at 58 (1996)). This logic invites hindsight bias by requiring the court to determine whether market entry occurred *post-predation* in order to determine whether a dangerous probability of recoupment existed *during the predatory period*. (One could argue that the court did not actually commit hindsight bias because it did not explicitly hold that a lack of actual recoupment proves no dangerous probability of recoupment, but the defendant did explicitly invite the court to commit this error and much of the court's language and analysis has the flavor of hindsight bias.)

The court's opinion was burdened by other mistakes as well. For example, the court mistakenly looked for recoupment only in the city-pair markets where American Airlines allegedly engaged in below-cost pricing. *Id.* at 1214 (asserting that "under *Brooke Group,* the court's recoupment analysis must be focused on 'an estimate of the cost of the alleged predation and a close analysis of both the scheme alleged by the plaintiff and the structure and conditions *of the relevant market*.' "(citing Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 226 (1993))). This approach is flawed because a predator can recoup in other markets, including markets for complementary goods, substitute goods, or replacement goods. *See* Leslie, *supra* note 156, at 1720–28; *see also* Ari Lehman, *Eliminating the Below-Cost Pricing Requirement from Predatory Pricing Claims*, 27 CARDOZO L. REV. 343, 375 (2005) ("[T]he AMR court found that based on theoretical market factors there was no reasonable likelihood of success despite evidence indicating that there had been actual recoupment in at least one market.").

The decision also failed to appreciate that a predator may use below-cost pricing to purchase a reputation for aggression that will allow the predator to deter entry in other markets even when it charges a supracompetitive price. *See* Christopher R. Leslie, *Rationality Analysis in Antitrust*, 158 U. PA. L. REV. 261, 298–300 (2010).

178. *See* 15 U.S.C. § 1 (2012) ("Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is hereby declared to be illegal."). Most courts require an antitrust plaintiff bringing price-fixing claims to prove three elements: (1) an agreement (2) that unreasonably restrains trade and (3) has an effect on interstate commerce. *See, e.g.*, T.W. Elec. Serv., Inc. v. Pac. Elec. Contractors Ass'n, 809 F.2d 626, 632–33 (9th Cir. 1987).

179. Servicetrends, Inc. v. Siemens Med. Sys., Inc., 870 F. Supp. 1042, 1072 (N.D. Ga. 1994), *opinion amended on reconsideration*, No. CIV. A. 1:93-CV299-JTC, 1994 WL 776878 (N.D. Ga. June 24, 1994); *see also* U.S. Anchor Mfg., Inc. v. Rule Indus., Inc., 7 F.3d 986, 1001–02 (11th Cir. 1993) ("There is no requirement, however, that a conspiracy . . . have a dangerous probability of successfully achieving its objectives.").

180. *See infra* notes 285–289 and accompanying text.

hold that if the alleged conspiracy failed to achieve its goals, then the conspiracy must never have existed in the first place.

The progenitor of hindsight bias in Section One jurisprudence is the Supreme Court's decision in *Matsushita Electric Industrial Co. v. Zenith Radio Corp.*[181] In *Matsushita*, a group of plaintiffs that manufactured consumer electronics sold in the United States alleged that their Japanese competitors formed a predatory pricing conspiracy, in which the conspirators' supracompetitive prices in the Japanese market were used to subsidize below-cost prices in the U.S. market.[182] The plaintiffs alleged that the Japanese manufacturers sought to drive their rivals from the U.S. market through collusive predatory pricing, so that the Japanese firms could collectively control the U.S. market through price fixing after they had successfully vanquished the U.S. suppliers.[183] After describing predatory pricing conspiracies as irrational—because they require upfront losses with uncertain or unlikely recoupment[184]—and noting the alleged conspiracy had been ongoing for twenty years,[185] the *Matsushita* majority concluded: "The alleged conspiracy's failure to achieve its ends in the two decades of its asserted operation is strong evidence that the conspiracy does not in fact exist."[186] Consequently, the Supreme Court reversed the Third Circuit's denial of summary judgment to the defendants and held that the plaintiffs did not have a case as a matter of law.[187]

This aspect of the *Matsushita* opinion is flawed for several reasons. First, the majority did not adequately consider that the defendants had, in fact, conspired to take control of the U.S. market through below-cost pricing but were overconfident and underestimated how difficult the task would be.[188] Second, the majority miscalculated how recoupment for twenty years of below-cost pricing could occur in short order.[189] Third, and most importantly for the purposes of this

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181. 475 U.S. 574 (1986).

182 *Id.* at 577–78.

183 *Id.*

184. *Id.* at 588–89.

185. *Id.* at 591.

186. *Id.* at 592; *see also* Randolph Sherman, *The* Matsushita *Case: Tightened Concepts of Conspiracy and Predation?*, 8 CARDOZO L. REV. 1121, 1131 (1987).

187. *Matsushita*, 475 U.S. at 597–98.

188. *See* Leslie, *supra* note 177, at 313 ("[I]t is possible that the Japanese firms initially predicted that they could corner the U.S. market in far less time, incurring far fewer losses. That this prediction proved false does not mean . . . that such a conspiracy did not exist as a matter of law.").

189. *See* Leslie, *supra* note 156, at 1719 ("The Court's duration assumption is flawed. The monopoly profit margin in the recoupment period may often be higher than the loss margin during the predation period.").

Article, the Court's reasoning bears the hallmarks of hindsight bias. Instead of focusing on the plaintiffs' evidence showing price coordination among the defendants,[190] the Court fixated on the (alleged) conspiracy's (alleged) failure and then reasoned backwards. By emphasizing the fact that *in retrospect* the defendants had sustained twenty years of losses, the *Matsushita* majority assumed that the plaintiffs' theory required that the Japanese manufacturers had planned from the very beginning to lose money for two decades before eliminating the plaintiffs from the U.S. market. In a later opinion, the Supreme Court asserted that the *Matsushita* "defendants had every incentive not to engage in the alleged conduct *which required them to sustain losses for decades* with no foreseeable profits."[191] But the Court only knew that the alleged conspiracy would entail twenty years of losses *in hindsight*. The *Matsushita* Court ultimately relied on ex post information to hold that the alleged conspiracy was inherently irrational ex ante and, therefore, must have never occurred.[192]

The *Matsushita* rationale has allowed lower courts to hold that if an alleged conspiracy has failed, then it is implausible that the conspiracy ever existed. For example, in one recent case in which the plaintiff sued its competitors for conspiring to organize a group boycott against it, the district court granted the defendants' motion for summary judgment by invoking *Matsushita* for the proposition that the defendants' "failure to achieve the alleged objective is strong evidence that the conspiracy did not exist."[193] In a similar case in which the plaintiff alleged both antitrust and other civil conspiracies, the court

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190. *See* Eric K. Yamamoto, Katherine G. Leonard & Shawna J. Sodersten, *Summary Judgment at the Crossroads: The Impact of the* Celotex *Trilogy*, 12 U. HAW. L. REV. 1, 21 (1990) ("[T]he Court in *Matsushita* simply ignored plaintiffs' expert testimony that contradicted the majority's economic analysis of the case.").

191. Eastman Kodak Co. v. Image Tech. Serv., Inc., 504 U.S. 451, 468 (1992) (emphasis added).

192. *See* Leslie, *supra* note 177, at 313 (describing the hindsight bias in *Matsushita*); *see also* Eugene Crew, Matsushita v. Zenith*: The Chicago School Teaches the Supreme Court A Dubious Lesson*, ANTITRUST, Fall 1986, at 11 ("If hindsight shows that defendants failed to profit from their conspiracy, they will be deemed not to have conspired because it would have been—in the Supreme Court's words—'economically senseless' to do so."); Jeffrey W. Stempel, *A Distorted Mirror: The Supreme Court's Shimmering View of Summary Judgment, Directed Verdict, and the Adjudication Process*, 49 OHIO ST. L.J. 95, 111 n.92 (1988) ("Somewhat surprisingly, Justice Powell makes these assertions, so important to terminating the case, without a single citation of authority or empirical evidence to support his view of economic reality.").

193. Champagne Metals v. Ken-Mac Metals, Inc., No. CIV-02-528-C, 2004 WL 7318834, at *24 (W.D. Okla. June 15, 2004), *rev'd*, 458 F.3d 1073 (10th Cir. 2006) (citing Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 592 (1986)). The Tenth Circuit reversed but did not call out the trial judge for hindsight bias. Rather, the appellate panel found that the plaintiff "did adduce direct evidence of a conspiracy," as well as a plausible economic theory and supporting circumstantial evidence. *Champagne Metals*, 458 F.3d at 1082.

granted summary judgment on the latter. The court pointed to the plaintiff's growth and quoted *Matsushita* for the holding that "an alleged conspiracy's failure to accomplish its aim 'is strong evidence that the conspiracy does not in fact exist.' "[194] Thus, in both antitrust and non-antitrust contexts, courts rely on *Matsushita* and use hindsight to hold that failed conspiracies do not exist.

Perhaps the strongest example of hindsight bias in the context of antitrust conspiracies comes from the Eleventh Circuit. In *Williamson Oil Co. v. Philip Morris USA*, a class of wholesale purchasers of cigarette products sued the leading tobacco companies for price fixing. [195] The alleged conspiracy followed "Marlboro Friday"—the industry term for April 2, 1993, when Phillip Morris dramatically reduced the price of Marlboro-brand cigarettes.[196] In response, other tobacco companies reduced their prices.[197] The class argued that Phillip Morris instigated Marlboro Friday to punish its rivals for previously reducing their prices and taking market share away from Phillip Morris. Marlboro Friday represented an attempt by Phillip Morris to restore its market share and to signal its rivals what would happen if they ever again reduced their prices.[198] The price war caused all tobacco firms to sacrifice profits. However, once the dust had settled from Marlboro Friday and its aftermath, the defendants engaged in twelve parallel price increases between 1993 and 2000, which the class argued were the product of a conspiracy to fix prices.[199]

The class sought to prove the conspiracy using circumstantial evidence. To prove an antitrust conspiracy using circumstantial evidence, a plaintiff must show two components: (1) conscious parallelism and (2) plus factors tending to show that the conscious parallelism was the result of concerted, not independent, decisionmaking.[200] The defendants' twelve corresponding price increases established conscious parallelism. The class offered a litany of plus factors, including engaging in price fixing in other countries, price signaling, actions against individual interest, collective

194. Color & Design Exhibits, Inc. v. Sign, Display & Allied Crafts Union Local 510, No. C 92–20591 JW (EAI), 1995 WL 138587, at *8 n.9 (N.D. Cal. Mar. 28, 1995) (quoting *Matsushita,* 475 U.S. at 592).

195. 346 F.3d 1287, 1291 (11th Cir. 2003).

196. *Id.* at 1292

197. *Id.*

198. *Id.* at 1293.

199. *Id.* at 1294.

200. *Id.* at 1301; *see also id.* at 1302 (explaining that "any showing by appellants that 'tends to exclude the possibility of independent action' can qualify as a 'plus factor.' " (quoting City of Tuscaloosa v. Harcros Chems., 158 F.3d 548, 571 n.35 (11th Cir. 1998))).

monitoring of sales, participation in other nonprice conspiracies, a market structure conducive to collusion, the history of price fixing in the tobacco industry, opportunities to conspire, and others.[201] The court, however, methodically rejected the class's proffered plus factors that suggested the tobacco firms had fixed prices during the 1993 to 2000 period.[202]

More importantly for the purposes of this Article, the Eleventh Circuit further held that "even if the class had created an inference of conspiracy" through the use of plus factors, the inability of the alleged cartel to achieve its goals would "fully rebut[ ]" that inference.[203] The Eleventh Circuit placed great weight on the district court's finding that the defendants' prices increased at a lesser rate during the period of the alleged conspiracy than prices had risen during the five-year period before the alleged conspiracy commenced.[204] The Eleventh Circuit interpreted this to mean that if a price-fixing conspiracy existed, it necessarily failed to achieve its goal of accelerating price increases.[205] The Eleventh Circuit held that even if it had accepted one or more plus factors presented by the plaintiffs, the failure of the alleged conspiracy to raise prices higher than prevailing pre-Marlboro Friday prices and to stabilize market shares meant that "the manufacturers would have readily rebutted the resulting inference of collusion."[206] Ultimately, the Eleventh Circuit concluded that the defendants' evidence of the alleged cartel's failure would invalidate any circumstantial evidence of an actual agreement to fix prices.[207]

The *Williamson* opinion exhibits the hallmarks of hindsight bias. The court examined whether the alleged agreement actually succeeded in order to determine whether the alleged agreement ever took place. The court did not appreciate that actual agreements (price-fixing and otherwise) often fail to achieve their goals. Such failure does not mean that the agreement never occurred. Applying this insight to

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201. *Id.* at 1305–19.

202. The court erred in rejecting many of these plus factors. *See, e.g.*, Christopher R. Leslie, *Foreign Price-Fixing Conspiracies*, 67 DUKE L.J. 557, 596–609 (2017) (explaining how the *Williamson* court mishandled the plus factor of Defendants' price-fixing activities in other countries).

203. *Williamson*, 346 F.3d at 1320.

204. *Id.*

205. The court also noted that the tobacco companies continued to spend considerable money on retail promotions and that the relative market shares of tobacco companies had shifted during the 1993 to 2000 period, events that would not happen in the shadow of a successful price-fixing conspiracy. *Id.* at 1320–21.

206. *Id.* at 1321.

207. *Id.* at 1323.

Williamson, the tobacco companies either agreed to raise price or they did not. The fact that following Marlboro Friday the tobacco companies engaged in twelve lockstep price increases, together with two handfuls of plus factors, is powerful evidence of a price-fixing conspiracy. The argument that Philip Morris did not maximize its profits does not disprove the existence of a price-fixing conspiracy. A price war's failure to stabilize a cartel (or to increase the aggressor's profits) does not mean that the price war never happened or was not part of a cartel's enforcement scheme.[208] It could simply mean that the cartel enforcement mechanism failed, which is common.[209] The conspiracy existed; it simply fell short.[210]

In addition to exhibiting hindsight bias when deciding whether defendants entered into a price-fixing conspiracy, judges may also fall victim to hindsight bias when determining the duration of such

208. *See* Margaret C. Levenstein, *Price Wars and the Stability of Collusion: A Study of the Pre-World War I Bromine Industry*, 45 J. INDUS. ECON. 117, 135 (1997).

209. *See, e.g.*, Christopher R. Leslie, *Trust, Distrust, and Antitrust*, 82 TEX. L. REV. 515, 558 (2004).

210. In a state follow-on case to the federal *Williamson* class action, the New Mexico Supreme Court granted summary judgment to the defendants, reasoning that because "wholesale prices remained lower than pre-Marlboro Friday levels and did not exceed pre-Marlboro Friday levels until almost five years later, . . . [the] Defendants had no rational economic motive to conspire." Romero v. Philip Morris Inc., 242 P.3d 280, 299 (N.M. 2010) (internal quotation marks omitted). This is hindsight bias: looking at price levels post-conspiracy does not dictate whether the defendants had an incentive to conspire in the first place.

In perhaps the greatest irony of all, another one of the state courts in a companion case that followed in the wake of *Williamson* claimed to recognize the problem of hindsight bias, but then chastened the plaintiff for committing it. In *Smith v. Philip Morris Cos.*, 335 P.3d 644, 678 (Kan. Ct. App. 2015), the Court of Appeals of Kansas followed the reasoning and holding of *Williamson* to grant summary judgment to the tobacco-company defendants. In its plus-factor analysis, the state court considered hindsight bias in an offhand way. *Id.* at 672. Generally, when plaintiffs try to prove an agreement through circumstantial evidence, courts consider it a plus factor when firms take similar actions that would be against their individual interests if taken independently. The Kansas court quoted *Williamson* for the proposition that "courts necessarily 'must exercise prudence in labeling a given action as being contrary to the actor's economic interests, lest we be too quick to second-guess well-intentioned business judgments of all kinds.' " *Id.* at 666 (quoting *Williamson*, 346 F.3d at 1310). The state court concluded that "to establish this plus factor, it is not enough for a plaintiff to show that a particular action did not, in hindsight, ultimately work to a defendant's financial advantage. Nor is it enough to say something other than self-interest might have motivated the pricing decision." *Id.* at 672. Under the approach advanced by the *Williamson* and *Smith* courts, a cartel's failure to succeed is proof positive that the cartel never existed, but—conversely—whether a firm has acted against its individual self-interest should not be evaluated in hindsight. The only consistency in this approach to hindsight issues is that the defendant always wins. More importantly, this approach uses the hindsight warning to effectively dismantle the action-against-individual-interest plus factor, which is particularly egregious because many courts consider this the most important plus factor. *See, e.g.*, *In re* Pool Prods. Distrib. Market Antitrust Litig., 988 F. Supp. 2d 696, 711 (E.D. La. 2013) ("A plausible allegation that the parallel conduct was not in the alleged conspirators' independent self-interest absent an agreement is generally considered the most important 'plus factor.' ").

conspiracies. For example, in *United States v. Nippon Paper Industries Co.*, the government prosecuted a manufacturer of thermal fax paper for participating in a price-fixing conspiracy with its rivals.[211] The court acknowledged that such a conspiracy "does not have to be successful to be illegal."[212] Because, however, the alleged conspiracy failed to raise prices,[213] the court came close to committing the form of hindsight bias observed in our previous cases.[214] For example, the court noted that although failure to raise price does not absolve price-fixing conspirators from antitrust liability,[215] the failure to successfully implement the price-fixing accord "plainly . . . suggests that there was no such agreement."[216] The court, however, could not equate failure with non-existence because the government had significant evidence of an actual agreement to fix prices, including a document from one of the conspirators that memorialized a meeting among the competitors at which an "agreement and approval was obtained from each company to revise prices" that were then specified.[217] Testimonial evidence showed efforts to implement these price increases.[218] Ultimately, much evidence showed that the competitors certainly believed that they had an agreement to fix prices, including internal reports[219] and insider testimony reciting conversations in which alleged conspirators stated that "the manufacturers 'fixed the price by territory.' "[220]

The court nevertheless afforded great weight to the defendant's evidence that "prices actually tended to fall when they were supposed to be rising or at least stabilizing."[221] The court seemed to think that falling prices meant that the conspiracy had been abandoned or had never taken root.[222] After conceding that sufficient evidence suggested that a conspiracy had begun in late March 1990, the court reasoned that the conspiracy, if one existed, must have been abandoned that summer

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211. 62 F. Supp. 2d 173, 181 (D. Mass. 1999).

212. *Id.*

213. However, because the conspiracy provided for flexibility in pricing—as opposed to setting a fixed price for all customers, *id.* at 187—it is hardly surprising that the conspirators could be attempting to collectively stabilize price yet fail to do so in the short term, even when operating pursuant to a long-term agreement to raise market prices.

214. *See supra* notes 181–210 and accompanying text.

215. *Nippon*, 62 F. Supp. 2d at 187–88.

216. *Id.* at 189.

217. *Id.* at 184.

218. *Id.*

219. *Id.* at 186–87.

220. *Id.* at 187.

221. *Id.* at 185 n.22.

222. *Id.* (treating falling prices "as evidence of competition in what was a buyers' market").

because prices were decreasing.[223] The court further held that even if the failure to raise price did not prove an absence of conspiracy immediately after the March 30 meeting, the failure to raise price was "compelling" evidence that no conspiracy existed "by the fall of 1990."[224]

The court drew a critical distinction between the creation of the conspiracy and the continuation of that conspiracy. The court essentially held that the lack of a price increase did not preclude finding that a conspiracy was formed in March of 1990, but it did prove that no conspiracy existed in the fall of that same year.[225] Coupled with the lack of direct evidence of actual price-fixing meetings in the fall of 1990, the court held that the March 1990 agreement to fix prices must have been abandoned because prices had not risen.[226]

This is essentially a variant of hindsight bias. In *Matsushita* and its progeny, courts treated a failure to succeed as proof of non-existence from the very beginning. In *Nippon*, the court treated the failure to succeed as proof of discontinuance soon after the conspiracy had been formed. The court gave in to hindsight bias because it equated failure in autumn as non-existence by that season. The *Nippon* court failed to appreciate that failure to raise or sustain price is common in ongoing price-fixing conspiracies because cheating is often endemic in active cartels. Cartels often have to regroup and renegotiate when the agreed-upon price fails to take hold in the market.[227] Falling prices may spur cartel ringleaders to detect cheating and punish cheaters through a wide array of mechanisms traditionally employed by cartel enforcers, including fines, buybacks, and price wars designed to discipline those who fail to charge the cartel price.[228] Under the *Nippon* court's approach, cartel failure can lead to price fixers evading liability, as happened in *Nippon*.[229]

The above opinions are misguided because the failure of a price-fixing conspiracy to raise price does not prove the absence of an

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223. *Id.* at 186.

224. *Id.* at 189.

225. *Id.* at 192 ("[W]hatever agreement had existed in March, had dissolved by mid 1990. . . . [T]he conspiracy was generally abandoned, before the limitations period.").

226. *Id.* at 191.

227. *See* Herbert Hovenkamp & Christopher R. Leslie, *The Firm as Cartel Manager*, 64 VAND. L. REV. 813, 833–34 (2011).

228. *See* Leslie, *supra* note 209, at 561–62. *See generally* Christopher R. Leslie, *Balancing the Conspiracy's Books: Inter-Competitor Sales and Price-Fixing Cartels*, 96 WASH. U. L. REV. 1 (2018).

229. In *Nippon*, the statute of limitations played a critical role. 62 F. Supp. 2d at 196. The plaintiffs filed their complaint in a timely manner only if the conspiracy were still ongoing in the fall of 1990. *Id.* The court held that the conspiracy existed in March of 1990 but not in the fall because it failed to raise prices at that time. *Id.*

agreement. First, the conspirators may have succumbed to overconfidence. Overconfidence can lead businesses to undertake ventures that in hindsight seem ill conceived.[230] In the context of antitrust conspiracies, price fixers seem burdened by an overconfidence that leads them to believe that they can avoid detection.[231] The fact that anticompetitive collusion fails to achieve its goals in no way proves that the conspiracy never existed.[232] Second, cheating may prevent an antitrust conspiracy from achieving its anticompetitive ends. Although price fixing should increase each cartel member's long-term profits, each firm can maximize its short-term profits by cheating on the cartel by charging less than the cartel price and selling more than its cartel allotment.[233] Cheating is relatively common among cartel participants.[234] Although cheating may prevent the price-fixing conspiracy from being effective, it does not negate antitrust liability.[235] Finally, an antitrust conspiracy may have goals beyond simply increasing short-term price.[236]

These hindsight-burdened opinions improperly conflate the two distinct Section One issues of agreement and anticompetitive effects by assuming that a lack of anticompetitive effects necessarily proves the absence of an agreement. But these are separate elements and, indeed, the first element of agreement should be determined before considering

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230. Avishalom Tor, *The Fable of Entry: Bounded Rationality, Market Discipline, and Legal Policy*, 101 MICH. L. REV. 482, 505 (2002); *id.* at 503 ("[T]he psychological literature reveals a number of cognitive processes that lead entrants, like other individuals making judgments with significant personal stakes under uncertainty, to be overconfident about the prospects of their ventures and insensitive to background statistical information.").

231. TONY A. FREYER, ANTITRUST AND GLOBAL CAPITALISM, 1930–2004, at 296 (2006) ("Though blatant criminal behavior clearly motivated certain defendants, many malefactors possessed a remarkable capacity for self-delusion whereby they convinced themselves that their actions were either somehow not actually illegal or conversely, that they were too smart to be caught."); Gilbert Geis, *White Collar Crime: The Heavy Electrical Equipment Antitrust Case in 1961*, *in* CRIMINAL BEHAVIOR SYSTEMS: A TYPOLOGY 143 (Marshall B. Clinard & Richard Quinney eds., 1967) ("Like most reasonably adept and optimistic criminals, the antitrust violators had hoped to escape apprehension. 'I didn't expect to get caught' . . . one of them said.").

232. *See* Leslie, *supra* note 64, at 308 ("The fact that a firm allegedly pursuing an anticompetitive strategy ultimately fails does not mean that the strategy was unattempted. It could simply mean that the firm was overoptimistic about its prospects for success . . . ."); *id.* at 307 ("In the context of anticompetitive conspiracies, overconfidence can explain why an arguably irrational scheme is perceived as rational and consequently undertaken.").

233. Leslie, *supra* note 209, at 526.

234. *Id.* at 558-59.

235. *In re* Polyurethane Foam Antitrust Litig., 152 F. Supp. 3d 968, 994 (N.D. Ohio 2015) ("Finally, while the competition evidence may suggest cheating on the agreement, that fact would be relevant to the extent of antitrust injury (if any). The Sherman Act proscribes effective as well as ineffective price-fixing conspiracies." (citing U.S. v. Hayter Oil Co. of Greeneville, 51 F.3d 1265, 1273–74 (6th Cir. 1995))).

236. *See* C. Scott Hemphill & Tim Wu, *Parallel Exclusion*, 122 YALE L.J. 1182 (2013).

whether the agreement caused anticompetitive effects.[237] Judge Posner has warned courts against falling into the "trap [of] failing to distinguish between the existence of a conspiracy and its efficacy."[238] This is particularly important, for example, when the agreement is per se illegal, regardless of whether the conspirators actually abided by their promises to fix prices.[239] Indeed, Judge Posner noted that "price-fixing agreements are illegal even if the parties were completely unrealistic in supposing they could influence the market price."[240] The law is clear, but judicial applications often fail the law.[241]

D. Hindsight Bias as Pro-Defendant in Antitrust Jurisprudence

The examples of hindsight bias discussed thus far favor antitrust defendants, but antitrust plaintiffs could theoretically benefit from hindsight bias as well. For example, a series of uniform lock-step price increases by competitors could, in retrospect, be treated as proof that the firms must have conspired to raise price. But courts explicitly prohibit drawing such an inference from parallel price hikes alone.[242] Thus, even if it appears that a failure to raise and maintain higher prices "proves" that no conspiracy existed, the opposite does not hold true according to the courts. Hindsight bias, in the context of conspiracy claims, benefits only antitrust defendants.

The story is more complicated with attempted monopolization claims. In those cases, plaintiffs will sometimes plead that a defendant's

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237. In the context of per se illegal agreements, anticompetitive effects are presumed as a matter of law. *See* Big Bear Lodging Ass'n v. Snow Summit, Inc., 182 F.3d 1096, 1101–02 (9th Cir. 1999) ("Elaborate market analysis and case-by-case evaluation are unnecessary in cases involving *per se* antitrust violations because the anticompetitive effects of the practice are presumed.").

238. *In re* High Fructose Corn Syrup Antitrust Litig., 295 F.3d 651, 656 (7th Cir. 2002).

239. *Id.* ("An agreement to fix list prices is . . . a per se violation of the Sherman Act even if most or for that matter all transactions occur at lower prices.").

240. *Id.* at 655.

241. In addition to the cases discussed earlier in this Section, see Blomkest Fertilizer, Inc. v. Potash Corp. of Saskatchewan, 203 F.3d 1028, 1047–48 (8th Cir. 2000) (Gibson, J., dissenting) ("The Court argues that prices eventually went down . . . but this glosses over the fact that they first rose dramatically, then remained above both the forecasted price . . . ."); and Lifschultz Fast Freight, Inc. v. Consolidated Freightways Corp., 805 F. Supp. 1277, 1286 (D.S.C. 1992), *aff'd*, 998 F.2d 1009 (4th Cir. 1993).

242. *In re* Chocolate Confectionary Antitrust Litig., 801 F.3d 383, 398 (3d Cir. 2015) ("[E]vidence of conscious parallelism cannot alone create a reasonable inference of a conspiracy."); Reserve Supply Corp. v. Owens-Corning Fiberglass Corp., 971 F.2d 37, 51 (7th Cir. 1992) ("[P]arallel pricing . . . cannot, by itself, support an inference that the two companies conspired to fix prices."); *see also* Mitchael v. Intracorp, Inc., 179 F.3d 847, 859 (10th Cir. 1999) ("While consciously parallel behavior may contribute to a finding of antitrust conspiracy, it is insufficient, standing alone, to prove conspiracy.").

post-conduct increase in market share demonstrates that the defendant had a dangerous probability of monopolizing the market.[243] Courts, such as the Fourth Circuit's opinion in *M & M Medical Supplies & Service, Inc. v. Pleasant Valley Hospital, Inc.,* have reasoned that "[a] rising share may show more probability of success than a falling share."[244] This may seem like hindsight bias of the sort described in Section II.A, but it is not.

First, raising and falling market share are distinguishable, such that one may reasonably extrapolate from a defendant successfully raising its market share that the defendant possessed a dangerous probability of successfully monopolizing. Some courts claim that a defendant's failure to increase its market share demonstrates a lack of capacity to monopolize the market.[245] Similarly, many courts hold that a reduction in the defendant's market share proves that the defendant lacked the "capacity to monopolize" the relevant market.[246] Actual increases in the defendant's market share after the defendant began engaging in anticompetitive conduct, however, help demonstrate capacity and thus prevent courts from incorrectly concluding that it was not possible for the defendant to increase its market share through the challenged anticompetitive conduct. Thus, success shows capability; in contrast, failure does not prove incapability, let alone the probability or inevitability of failure.

Further, depending on the size of the defendant's initial market share, the plaintiff may find it necessary to discuss a defendant's increase in market share over time to prove a necessary element of an attempted monopolization claim. Some courts have held that "[t]he [market] share that is relevant for determining whether the defendant

243. *See, e.g.*, United Energy Trading, LLC v. Pac. Gas & Elec. Co., 200 F. Supp. 3d 1012, 1022 (N.D. Cal. 2016) ("[S]ince the schemes took effect, PG&E's share of the natural gas load has increased from eighty-one (81) to eight-four (84) percent.").

244. 981 F.2d 160, 168 (4th Cir. 1992) (en banc).

245. See *supra* note 91.

246. Richter Concrete Corp. v. Hilltop Concrete Corp., 691 F.2d 818, 826 (6th Cir. 1982); *see also* Tarrant Serv. Agency, Inc. v. Am. Standard, Inc., 12 F.3d 609, 615–16 (6th Cir. 1993) ("Furthermore, Tarrant has not produced any other evidence that Trane was capable of, much less achieved, a dangerous probability of success in destroying competition in the relevant product market or controlling prices."); Arthur S. Langenderfer, Inc. v. S.E. Johnson Co., 917 F.2d 1413, 1431 (6th Cir. 1990) ("There is no substantial evidence that defendants were capable of, much less achieved, the destruction of competition in limestone in any relevant market."); Colo. Interstate Gas Co. v. Nat. Gas Pipeline Co. of Am., 885 F.2d 683, 694–95 (10th Cir. 1989) ("In evaluating the probability of successful monopolization 'we must consider the firm's capacity to commit the offense, the scope of its objective, and the character of its conduct.' " (quoting Kearney & Trecker Corp. v. Giddings & Lewis, Inc., 452 F.2d 579, 598 (7th Cir. 1971))); *Lektro-Vend II*, 660 F.2d at 271 ("In an antitrust context we must consider the firm's capacity to commit the offense, the scope of its objective, and the character of its conduct." (quoting *Kearney*, 452 F.2d at 598)).

can satisfy the 'dangerous probability of success' requirement of attempted monopolization should be either that which he possesses at the time of litigation or the largest share he possessed during the period of the alleged offense."[247] This makes sense; if the defendant begins engaging in anticompetitive conduct when it is a relatively small player, it may not have a sufficiently high market share to constitute a dangerous probability of monopolizing the market. But when the defendant's market share subsequently increases to the point of crossing the necessary threshold, the conduct may then constitute a Section Two violation. Once it has a sufficiently high market share, the firm should not be immunized from antitrust liability because it had a low market share when it began its campaign of anticompetitive conduct.

Finally, the defendant's increase in market share may be relevant to show that the defendant did not merely attempt to monopolize the market, but actually succeeded in doing so. This may be necessary because it is common for antitrust plaintiffs to plead both actual monopolization and attempted monopolization. For these reasons, evidence of increasing market share does not pose the same risk of hindsight bias as does evidence of decreasing market share. This risk differential makes hindsight bias a decidedly pro-defendant cognitive bias in the context of attempted monopolization claims.

Similarly, in predatory pricing cases, courts may appear to engage in hindsight bias when holding that evidence of actual recoupment makes summary judgment inappropriate.[248] For example, the *Brooke Group* Court implied that actual recoupment is one method of showing that the predator enjoyed a dangerous probability of recoupment when it priced below cost.[249] Some scholars have argued

247. Multistate Legal Studies, Inc. v. Harcourt Brace Jovanovich Legal & Prof'l Publ'ns, Inc., 63 F.3d 1540, 1554 (10th Cir. 1995) (quoting PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶ 711.2d, 835.2b. (Supp. 1994)).

248. Spirit Airlines, Inc. v. Nw. Airlines, Inc., 431 F.3d 917, 931 (6th Cir. 2005) ("A corollary of this principle of *Brooke Group,* is that where the market is highly concentrated, the barriers to entry are high, the defendant has market power and excess capacity, and *evidence of actual recoupment is present*, summary judgment is inappropriate." (emphasis added)).

249. Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 232–33 (1993):

> Based on Liggett's theory of the case and the record it created, there are two means by which one might infer that Brown & Williamson had a reasonable prospect of producing sustained supracompetitive pricing in the generic segment adequate to recoup its predatory losses: first, if generic output or price information indicates that oligopolistic price coordination in fact produced supracompetitive prices in the generic segment; or second, if evidence about the market and Brown & Williamson's conduct indicate that the alleged scheme was likely to have brought about tacit coordination and oligopoly pricing in the generic segment, even if it did not actually do so.;

that actual recoupment satisfies the dangerous probability of success element.[250]

Post-predation evidence of actual recoupment, however, does not create the same risk of hindsight bias as post-predation evidence of a lack of recoupment. First, evidence of actual recoupment has more probative value than evidence of nonrecoupment. If recoupment actually occurred, then it makes sense to say that there was a reasonable probability of it occurring. Conversely, if recoupment did not occur, that does not necessarily prove that there was never a reasonable probability of recoupment occurring.[251]

Second, even when recoupment does occur, far from exhibiting hindsight bias, courts still sometimes find that the defendant lacked a reasonable probability of recoupment. Most notably, in *Brooke Group*, the Supreme Court held that the defendant did not have a reasonable probability of recoupment despite the evidence that recoupment had occurred.[252] The Supreme Court did not engage in hindsight bias by noting that actual recoupment occurred and then reasoning backwards that the defendant must have necessarily possessed a reasonable probability of recoupment. Instead, the majority discounted post-predation evidence inconsistent with its conclusion that recoupment was never probable. This suggests that, as with attempted monopolization claims, evidence of post-conduct success does not seem to pose the same risk of hindsight bias as does evidence of post-conduct failure.

Beyond the pro-defendant hindsight bias documented in cases involving attempted monopolization, predatory pricing, and price-fixing conspiracies, there are some areas of antitrust law where hindsight bias should, in theory, favor the plaintiff. For example, a monopolist's pursuit of anticompetitive litigation can constitute illegal monopoly conduct if the monopolist brings a "sham" lawsuit against a

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see also David F. Shores, *Law, Facts and Market Realities in Antitrust Cases After* Brooke *and* Kodak, 48 SMU L. REV. 1835, 1847 (1995) ("A reasonable prospect for recoupment could have been established, the [*Brooke Group*] Court noted, either by evidence of actual recoupment or by a showing that recoupment was probable.").

250. Patrick Bolton, Joseph F. Brodley & Michael H. Riordan, *Predatory Pricing: Strategic Theory and Legal Policy*, 88 GEO. L.J. 2239, 2270 (2000) ("With such evidence of actual recoupment already in progress, it seems reasonable to *infer* a coherent predatory strategy without requiring the plaintiff to completely spell out and prove the logic of the strategy.").

251. Suppose someone were to argue that recoupment is impossible. Showing an instance in which recoupment did not occur does not prove that recoupment is impossible; it merely shows that recoupment did not occur. If, however, there was an instance in which recoupment did actually occur, that would, in fact, disprove the statement.

252. *Brooke Grp.*, 509 U.S. at 243; *see also* Leslie, *supra* note 156, at 1737.

competitor.[253] To prove sham litigation, an antitrust plaintiff must prove that the anticompetitive litigation was objectively baseless and "the baseless lawsuit conceals an attempt to interfere directly with the business relationships of a competitor through the use of governmental *process*—as opposed to the *outcome* of that process—as an anticompetitive weapon."[254] The first element is objective, the second subjective.

When the monopolist's litigation ultimately fails to succeed, it could appear in hindsight that the litigation must have been objectively baseless, thus satisfying the first element. Yet courts consistently assert that the merits of the monopolist's prior-concluded lawsuits against its rivals should not be judged in hindsight when the monopolist loses.[255] Conversely, courts do hold that when the monopolist's prior anticompetitive litigation had some success, the litigation must not have been objectively baseless.[256] This is not necessarily true because "even a successful infringement lawsuit could conceivably provide the basis for an anticompetitive litigation claim if the patentee prevailed in its prior infringement suit only because it successfully concealed its

253. *See, e.g.*, Prof'l Real Estate Inv'rs, Inc. v. Columbia Pictures, Indus. (*PREI*), 508 U.S. 49, 56 (1993) ("*Noerr*, however, withheld immunity from 'sham' activities because 'application of the Sherman Act would be justified' when petitioning activity, 'ostensibly directed toward influencing governmental action, is a mere sham to cover . . . an attempt to interfere directly with the business relationships of a competitor.' " (quoting R.R. Presidents Conference v. Noerr Motor Freight, Inc., 365 U.S. 127, 144 (1961))).

254. *Id.* at 60–61.

255. *See, e.g.*, Balt. Scrap Corp. v. David J. Joseph Co., 237 F.3d 394, 399 (4th Cir. 2001) ("Lawsuits are not objectively baseless simply because a litigant lost."); Fitbit, Inc. v. Aliphcom, No. 5:15–cv–04073–EJD, 2016 WL 7888033, at *2 (N.D. Cal. May 27, 2016) ("And even if Defendant prevails on the question of infringement, a court may still rule that the suit was not objectively baseless because Plaintiff may well have filed the suit with a realistic expectation of prevailing on the merits."); Mitsubishi Heavy Indus., Ltd. v. Gen. Elec. Co., 720 F. Supp. 2d 1061, 1069 (W.D. Ark. 2010) ("Even if Mitsubishi prevails in the infringement actions, if they are close, hard-fought cases, that fact could result in a finding, as a matter of law, that those actions were not objectively baseless, which would resolve this action."); AstraZeneca AB v. Mylan Labs., Inc., Nos. 00 Civ. 6749, 03 Civ. 6057, 2010 WL 2079722, at *4 (S.D.N.Y. May 19, 2010) ("While surviving summary judgment may not establish conclusively that a suit is not a sham, it provides strong evidence that Astra could have reasonably expected success on the merits." (citing Sulzer Textil A.G. v. Picanol N.V., 358 F.3d 1356, 1370 (Fed. Cir. 2004))); *see also* HERBERT HOVENKAMP, MARK D. JANIS, MARK A. LEMLEY, CHRISTOPHER R. LESLIE & MICHAEL A. CARRIER, IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW § 11.03[B][2] (3d ed. 2016) ("Even unsuccessful suits are nonetheless normally entitled to immunity under the objective prong of *PREI*.").

256. *PREI*, 508 U.S. at 60 n.5 ("A winning lawsuit is by definition a reasonable effort at petitioning for redress and therefore not a sham."); Crocs, Inc. v. Effervescent, Inc., 248 F. Supp. 3d 1040, 1055 (D. Colo. 2017) ("Crocs states that its patent lawsuits cannot be considered objectively baseless because Crocs has prevailed against Dawgs in the Federal Circuit and the ITC. The Court agrees.").

fraud against the PTO, which has since been exposed."[257] Ultimately, the hindsight effects are decidedly pro-defendant.

III. HOW HINDSIGHT BIAS REWRITES AND UNDERMINES ANTITRUST DOCTRINE

When present, hindsight bias may do more than simply affect the results in individual cases. Hindsight bias may fundamentally distort antitrust doctrine in a manner that substantively weakens antitrust common law. This change in doctrine is neither explained nor explicit in judicial opinions. It occurs *sub rosa* without any justification for why antitrust doctrine should change. This Part examines how the hindsight bias discussed in Part II effectively undermines some fundamental aspects of antitrust law.

A. Hindsight Bias Immunizes Failed Attempts to Monopolize

When judges succumb to hindsight bias, they can alter substantive antitrust doctrine. Section Two of the Sherman Act condemns both a defendant's illegal acquisition and attempted acquisition of monopoly power, which the Supreme Court has long held is the power to raise prices, not necessarily the actual exercise of such power.[258] In the context of attempt claims, courts recognize that "the Sherman Act's prohibition against attempted monopolization does not require that the attempt in fact ripen into an actual monopoly. It is the attempt which is the offense."[259] Successful monopolization is not part of an attempted monopolization claim; successful monopolization is a separate antitrust cause of action with its own elements.

Hindsight bias changes this dynamic. If courts accept defendants' invitations to review probabilities in hindsight, then the "failure of the alleged monopoly scheme proves there was never any 'dangerous probability' of its success. Such a conclusion would undermine most attempt claims."[260] Examining the would-be monopolist's success or failure in retrospect comes close to eliminating

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257. HOVENKAMP, ET AL., *supra* note 255, § 11.03[B][2] (citing Hydranautics v. FilmTec Corp., 70 F.3d 533 (9th Cir. 1995)).

258. *See* Am. Tobacco Co. v. United States, 328 U.S. 781, 811 (1946) ("The authorities support the view that the material consideration in determining whether a monopoly exists is not that prices are raised and that competition actually is excluded but that power exists to raise prices or to exclude competition when it is desired to do so.").

259. *Lektro-Vend II*, 660 F.2d at 270–71 (citing Kearney & Trecker Corp. v. Giddings & Lewis, Inc., 452 F.2d 579 (7th Cir. 1971)).

260. White Mule Co. v. ATC Leasing Co., 540 F. Supp. 2d 869, 893 (N.D. Ohio 2008).

attempted monopolization as an antitrust claim altogether. As the Seventh Circuit correctly observed: "A subsequent failure to achieve monopoly status cannot itself vitiate a claim of attempted monopoly where other evidence substantially supports the attempt without eviscerating the entire attempt offense."[261] After all, if an antitrust plaintiff must show that a defendant's attempt to monopolize a market succeeded, that is tantamount to requiring actual monopolization, which is its own separate cause of action under Section Two. In effect, hindsight bias surreptitiously reads the attempted monopolization language out of the Sherman Act altogether.[262]

Courts make a grave mistake when allowing a firm to escape antitrust liability because the firm's anticompetitive conduct proved ineffective. Although private plaintiffs must show that they have suffered antitrust injury in order to prevail on an attempted monopolization claim, the defendant's anticompetitive conduct can inflict antitrust injury even when it fails to achieve actual monopolization. Some courts have reasoned that a defendant cannot be liable for attempted monopolization if the plaintiff was profitable despite the defendant's anticompetitive conduct.[263] Such holdings are inconsistent with the principle that "an antitrust plaintiff's post-violation successes do not necessarily preclude compensation for damages proximately caused by an antitrust violation."[264] An antitrust plaintiff can succeed in business, yet still suffer antitrust injury if the plaintiff makes less profit than it would have but for the defendant's anticompetitive conduct. Even a failed attempt to monopolize can injure a competitive economy by "impos[ing] enormous losses on rivals who must spend resources defending themselves or make costly exits from the market in favor of other firms."[265] For example, if the attempted monopolization claim is based on the defendant bringing sham litigation, then the litigation costs incurred in defending against the anticompetitive lawsuits constitute antitrust damages that are

261. *Lektro-Vend II*, 660 F.2d at 270–71. Unfortunately, the Seventh Circuit went on to say that circuit law did "not forbid consideration of subsequent market performance to evaluate the existence of the alleged attempt . . . ." *Id.* The court was seemingly unaware how considering such subsequent market performance invites hindsight bias.

262. *See* Multistate Legal Studies, Inc. v. Harcourt Brace Jovanovich Legal & Prof'l Publ'ns, Inc., 63 F.3d 1540, 1554 (10th Cir. 1995) ("Because we are talking about probabilities, it is not necessary for a defendant to already possess monopoly power in the target market; indeed, if it did, the offense would be monopolization, not attempt.").

263. *See supra* notes 126–129 and accompanying text.

264. Sterling Merch., Inc. v. Nestlé, S.A., 656 F.3d 112, 122 (1st Cir. 2011) (quoting Pierce v. Ramsey Winch Co., 753 F.2d 416, 436 (5th Cir. 1985)).

265. Herbert Hovenkamp, *Antitrust's Protected Classes*, 88 MICH. L. REV. 1, 36 (1989).

recoverable.[266] Antitrust law condemns attempted monopolization in order to deter costly anticompetitive conduct.[267] Yet when hindsight bias protects would-be (though ultimately unsuccessful) monopolists, this deterrence is weakened. Furthermore, if the law did not punish attempts to monopolize, it would instead reward ineffectual wrongdoers for their incompetence, even when their actions cause the type of harm that the Sherman Act seeks to prevent.[268]

Moreover, using evidence of the defendant's post-conduct failure to monopolize as proof that actual monopolization was improbable or impossible is incorrect. A defendant's market share can decrease even though it has a dangerous probability of monopolizing the market.[269] A failure to monopolize may be due to changed circumstances that were unanticipated at the time of the anticompetitive conduct. For example, in the case of commodities found in nature, such as minerals, the discovery of a new deposit can upend a market. In technology markets, the development of new systems and equipment can topple a monopolist or can supplant a market altogether, as when DVD technology displaced VHS tapes and recorders. When displacement occurs, a former monopolist can transition from dominance to insolvency. Most importantly, the antitrust litigation itself might have thwarted the defendant's attempt to monopolize the market since firms may reduce their anticompetitive conduct and their market share when they are defending against antitrust claims. Thus, it is particularly inappropriate for courts to use the defendant's market share during the antitrust litigation—and sometimes years into the antitrust litigation—to hold that the defendant could not have had a dangerous probability of monopolizing the market years earlier when the

266. Handgards v. Ethicon, 601 F.2d 986, 997 (9th Cir. 1979) ("In a suit alleging antitrust injury based upon a bad faith prosecution theory it is obvious that the costs incurred in defense of the prior patent infringement suit are an injury which 'flows' from the antitrust wrong."); *see* HOVENKAMP ET AL., *supra* note 255, § 6.2b3 (collecting cases).

267. *See* Hovenkamp, *supra* note 265, at 37 ("[R]ecognizing a cause of action for failed attempts [to monopolize] increases the cost of making them."); *see also* Jessica L. Goldstein, *Single Firm Predatory Pricing in Antitrust Law: The* Rose Acre *Recoupment Test and the Search for an Appropriate Judicial Standard*, 91 COLUM. L. REV. 1757, 1779 (1991) ("The antitrust laws, especially the 'attempt to monopolize' offense, are meant not only to protect consumers but also to deter conduct whose motivating forces are anticompetitive.").

268. *See* Roszkowski & Brubaker, *supra* note 66, at 381 ("A third major function of attempt law is equality of treatment. If an actor attempts to commit a crime and fails due to a fortuity, it is inequitable to exculpate that person on this ground alone." (citing MODEL PENAL CODE art. 5 introduction, at 294 (1985))); *see also* W. LAFAVE & A. SCOTT, CRIMINAL LAW § 6.2(b), at 499–500 (2d ed. 1986).

269. United States v. Dairymen, Inc., 758 F.2d 654 (6th Cir. 1985) ("We would like to specifically point out, however, that a decline in a company's market share does not mandate the conclusion that the company lacks the capacity to monopolize.") (collecting cases).

defendant began its anticompetitive conduct. Yet courts fail to recognize that filing an antitrust claim may be connected with a defendant's failure to monopolize a market. In sum, a defendant's failure to achieve actual monopoly through exclusionary conduct does not mean that there was not a dangerous probability of success at the time that the exclusionary conduct took place.

B. Hindsight Bias Imposes an Actual Recoupment Requirement for Predator's Losses

Predatory pricing law requires only that the predator have a dangerous probability of recouping its losses, not that it actually succeeds in doing so.[270] However, when courts suggest that factfinders should interpret an absence of actual recoupment as proof that a dangerous probability of recoupment never existed, they effectively amend antitrust law to require actual recoupment without acknowledging that they are changing antitrust doctrine.[271]

Because predatory pricing inflicts significant injury even without recoupment, such a change in substantive antitrust law is unwarranted.[272] Recoupment only occurs if the defendant raises its price both high enough and long enough to compensate for the losses sustained in the predation period. But the consumers paying monopoly prices in the post-predation period suffer antitrust injury, regardless of whether the monopoly profits are sufficient to recoup the defendant's investment in predatory pricing.[273] Professors Phillip Areeda and Herbert Hovenkamp have explained that "post-predation prices can be significantly supracompetitive, thereby injuring consumers, and yet be insufficient in size or duration to provide full recoupment for the

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270. Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 251 (U.S. 1993) (Stevens, J., dissenting) (noting that neither the Robinson-Patman Act nor the Sherman Act "requires proof that a predatory plan has actually succeeded in accomplishing its objective").

271. Scholars have considered whether predatory pricing claims should be dismissed in "factual situations where predation was unsuccessful." C. Scott Hemphill, *The Role of Recoupment in Predatory Pricing Analyses*, 53 STAN. L. REV. 1581, 1607 (2001). Support for this proposition is found in the language of judicial opinions, like those that treat " 'unsuccessful predation' " as " 'a boon to consumers.' " *Id.* (quoting *Brooke Grp.*, 509 U.S. at 224); *see also* Advo, Inc. v. Phila. Newspapers, 51 F.3d 1191, 1200 (3d Cir. 1995) ("Predatory pricing schemes that fail at the recoupment stage may injure specific competitors . . . , but do not injure competition (*i.e.* they do not injure consumers) and so produce no antitrust injury . . . . Such futile below-cost pricing effectively bestows a gift on consumers, and the Sherman Act does not condemn such inadvertent charity."); W. Parcel Express v. UPS of Am., 65 F. Supp. 2d 1052, 1063 (N.D. Cal. 1998) ("Predatory pricing is only harmful when the predator succeeds in recouping the losses it suffered by its earlier below-cost pricing."), *aff'd*, 190 F.3d 974 (9th Cir. 1999).

272. Leslie, *supra* note 156, at 1741–44.

273. *Id.* at 1742.

defendant's investment in predation."[274] Beyond the costs incurred by consumers, failed predatory pricing also disrupts the economy by causing inefficient overconsumption during the predation period and inefficient underconsumption during the post-predation period.[275] The Supreme Court in *Brooke Group* acknowledged that "unsuccessful predatory pricing may encourage some inefficient substitution toward the product being sold at less than its cost."[276] These market disruptions shift resources away from their most efficient uses.[277]

Predatory pricing schemes that fail at the recoupment stage nonetheless hurt efficient competitors who are driven from the market. For example, in the *American Airlines* predatory pricing case discussed in Part II.B, the court fell victim to hindsight bias by granting summary judgment to the defendant because no actual recoupment occurred, all while noting that the excluded competitors had lower costs.[278] Even when the predator's rivals do not exit the market permanently, they pay unnecessary costs to compete against the predator's inefficiently low price.[279]

Furthermore, a predatory pricing scheme may not lead to actual recoupment even though the predator possessed a dangerous probability of recoupment when it began engaging in below-cost pricing. The scheme may have failed due to unforeseen circumstances, such as the unexpected discovery of new sources of a commodity.[280] More importantly, recoupment may not occur *because* of the antitrust litigation challenging the defendant's predatory pricing.[281] Predators with patience and foresight may game the system by lying in wait because "if actual recoupment were required, a predator might be able to avoid liability by delaying recoupment until risk of suit has

274. 3A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 726, at 77 (3d ed. 2008). Additionally, that consumers in the predation period paid a low price does not negate the injury borne by consumers who paid a monopoly price in the post-predation period. *See* Leslie, *supra* note 156, at 1742.

275. Leslie, *supra* note 156, at 1743.

276. Brooke Grp. Ltd. v. Brown Williamson Tobacco Corp., 509 U.S. 209, 224 (1993).

277. Leslie, *supra* note 156, at 1743.

278. *See* United States v. AMR Corp., 335 F.3d 1109, 1112 (10th Cir. 2003).

279. Hovenkamp, *supra* note 265, at 36 (noting that even when a predatory pricing scheme fails, "the attempt itself can impose enormous losses on rivals who must spend resources defending themselves or make costly exits from the market in favor of other firms").

280. *See, e.g.*, Calkins, *supra* note 160, at 407 n.390 (hypothesizing a predatory pricing scenario in the diamond market in which "all experts agreed th[at] recoupment was certain to succeed—but that just before trial a mother lode of diamonds was discovered and diamond prices plummeted, to remain depressed for the foreseeable future").

281. *See id.*

passed."[282] As a result, a de facto actual recoupment requirement would fundamentally change the nature of the offense and would create false negatives.[283] Whatever the circumstances, judges clouded by hindsight can exonerate price predators that actually charged a price below cost, injured their efficient rivals, and had a dangerous probability of recoupment.[284]

C. Hindsight Bias Adds an Efficacy Requirement to Per Se Section One Violations

Hindsight bias can also fundamentally distort antitrust law related to conspiracies. Per se violations of Section One of the Sherman Act do not have an efficacy requirement. For per se violations, plaintiffs do not have to show any market effects;[285] anticompetitive effects are presumed as a matter of law. Consequently, defendants cannot argue that their agreement does not violate Section One because it had no anticompetitive effects.[286] Antitrust law does not limit its condemnation

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282. Bolton, *supra* note 250, at 2269–70.

283. Michael A. Salinger, *The Legacy of* Matsushita*: The Role of Economics in Antitrust Litigation*, 38 LOY. U. CHI. L.J. 475, 484 (2007):

> Requiring actual recoupment would necessarily create some risk of false negatives, as it is certainly possible for a company to have a reasonable expectation that predation would be profitable only to have unexpected events make the company ultimately regret its attempt. Still, if the costs of false positives are sufficiently great relative to the cost of false negatives, then that risk might be worth taking.

284. The hindsight bias problem is magnified by the fact that courts often incorrectly conclude that recoupment is unlikely—or did not happen—as a result of judges not understanding how recoupment occurs. For example, courts often fail to appreciate how recoupment sometimes takes place in markets other than the market in which the predation occurred. These include other geographic markets and other products markets, including complementary product, substitute product, and replacement product markets. Leslie, *supra* note 156 at 1720–32. Judges also fail to understand that a price predator need not actually monopolize the market in order to recoup its losses because recoupment can occur through cartel pricing or oligopoly pricing. *Id.* at 1734–38. All of this counsels against imposing an actual recoupment requirement, yet courts essentially do this when they allow hindsight bias to affect their determinations of ex ante probabilities.

285. United States v. Sargent Elec. Co., 785 F.2d 1123, 1127 (3d Cir. 1986) ("When the concerted action is price-fixing or bid-rigging, the Sherman Act caselaw shortcuts the inquiry into market effect, by treating such concerted actions as per se violations."). In contrast, plaintiffs pursuing rule-of-reason claims need to show anticompetitive effects. *See Lektro-Vend II*, 660 F.2d at 268 ("It is by now well established that any rule of reason analysis requires a showing of anticompetitive market effect.").

286. For agreements challenged under the rule of reason, a plaintiff must prove anticompetitive effects in order to show that the defendants' agreement violated Section One. It would still constitute hindsight bias to conclude that an absence of anticompetitive effects means that no agreement was made, but this would not necessarily change the ultimate result because of the lack of anticompetitive effects.

Although the correct result is reached either way, the path differs. The method that commits hindsight bias would say that the absence of anticompetitive effects must mean that no agreement to successful cartels;[287] any agreement to fix price is illegal, whether successful or not.[288] The agreement alone is a violation, even without any subsequent act to implement the agreement.[289]

Hindsight bias can essentially amend Section One by imposing an effectiveness requirement on price-fixing and other per se claims in cases where the plaintiffs are proving an agreement through circumstantial evidence.[290] When courts equate a lack of efficacy with an absence of agreement, judges are effectively rewriting the Sherman Act. If plaintiffs cannot prove an agreement absent proof of that conspiracy's success, then the agreement alone is no longer illegal—at least in cases where the claim is being proven with circumstantial evidence. As such, hindsight bias risks undermining antitrust law's per se rule against price fixing.

Price-fixing conspiracies can inflict injuries even when the market price does not increase following the rivals' agreement. While some price-fixing cartels are successful at increasing price, many are

existed in the first place and thus the first element of Section One liability is not met. The reasoning here is flawed because the absence of effects does not prove an absence of agreement. In contrast, the proper way of finding no liability would be to say that the absence of anticompetitive effects means that the alleged agreement did not unreasonably restrain trade and thus the second element of Section One liability is not met.

287. Plymouth Dealers' Ass'n of N. Cal. v. United States, 279 F.2d 128, 133 (9th Cir. 1960) ("Nor does the fact that a plan entered into by competitors to control prices, and having an effect thereon, did not ultimately succeed on accomplishing what the parties anticipated, absolve them from their violation of the law.").

288. United States v. Socony-Vacuum Oil Co., 310 U.S. 150, 224 (1940) ("It is the 'contract, combination . . . or conspiracy, in restraint of trade or commerce' which § 1 of the Act strikes down, whether the concerted activity be wholly nascent or abortive on the one hand, or successful on the other."); United States v. Hayter Oil Co. of Greeneville, 51 F.3d 1265, 1273 (6th Cir. 1995) ("[I]n *Socony-Vacuum Oil Co.*, the Supreme Court made clear that showing effect or success is not required to establish a violation of § 1 of the Sherman Act."); *In re* Chocolate Confectionary Antitrust Litig., 999 F. Supp. 2d 777, 788 (M.D. Pa. 2014) (noting that although a particular conspiracy may "constitute[ ] 'a failed attempt to fix prices,' it is the attempt itself, not the ultimate success or profitability of the price-fixing scheme, that the Sherman Act proscribes"); *see also* Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 251 (1993) (Stevens, J., dissenting) ("Section 1 of the Sherman Act requires proof of a conspiracy. It is the joint plan to restrain trade, however, and not its success, that is prohibited by § 1." (citing Nash v. United States, 229 U.S. 373, 378 (1913))).

289. *Hayter Oil*, 51 F.3d at 1270 ("Proof of an overt act is not required to establish a violation of § 1 of the Sherman Act. Because the price-fixing agreement itself constitutes the crime, the government is only required to prove that the agreement existed during the statute of limitations period and that the defendant knowingly entered into that agreement." (citing *Socony-Vacuum*, 310 U.S. at 224 n. 59)); United States v. Flom, 558 F.2d 1179, 1183 (5th Cir. 1977) ("The heart of a Section One violation is the agreement to restrain; no overt act, no actual implementation of the agreement is necessary to constitute an offense.").

290. This analysis assumes no direct evidence of an agreement; this is not an unreasonable assumption because direct evidence is often lacking, thus requiring plaintiffs to use circumstantial evidence that a price-fixing agreement existed.

not.[291] In some cases, the conspirators do not intend to raise the price but rather intend to stabilize the pre-conspiracy market price and prevent it from falling. Such nonmovement of price may appear to suggest an absence of agreement. But, if the conspirators' goal was to maintain—not increase—price, then the conspiracy has succeeded. This is so even if a federal judge considering a defendant's motion for summary judgment deems the conspiracy a failure. The conspiracy's success in preventing a drop in the market price injures consumers who pay more than they would have but for the agreement to maintain price.

Judicial opinions affected by hindsight bias risk encouraging more price-fixing conspiracies. If a cartel's failure to succeed in sufficiently raising price were to constitute evidence that the competitors never agreed in the first place, as the Eleventh Circuit suggested in *Williamson*, this could incentivize more firms to engage in price fixing. Firms are more likely to join a price-fixing cartel if they conclude that the benefits outweigh the costs. If cartel failure provides a quasi-defense to cartelization—because hindsight bias equates failure with a lack of conspiracy—then price fixing is more likely to appear cost effective to a firm considering engaging in it. An antitrust rule based on hindsight bias operates as an insurance policy for price fixers: if the conspiracy fails to raise price, then the conspirators are not liable under Section One because courts will infer that no agreement existed.[292] Ironically, when conspirators cheat on their cartel agreement, as is common, they may be immunizing their conspiracy from liability.[293] Antitrust law is not intended to "save defendants who have clearly, though foolishly, conspired."[294] For price-fixing firms, the worst-case scenario is for the cartel to fail to raise prices sufficiently and yet still be discovered and held liable for their antitrust violation. Hindsight bias takes this worst-case scenario off the table if a cartel's failure to raise price is equated with a lack of agreement. In short, an antitrust

291. Margaret C. Levenstein & Valerie Y. Suslow, *Studies of Cartel Stability: A Comparison of Methodological Approaches*, *in* HOW CARTELS ENDURE AND HOW THEY FAIL: STUDIES OF INDUSTRIAL COLLUSION 9, 14 (Peter Z. Grossman ed., 2004) ("Some cartels are very successful at increasing prices and profits, while others are dramatic failures."). In some markets, the inflated cartel price may encourage new entry into the market, which drives price back down. *Id.* at 30.

292. Under the *Williamson* approach, a lack of success rebuts this circumstantial evidence.

293. *See* Blomkest Fertilizer, Inc. v. Potash Corp. of Saskatchewan, 203 F.3d 1028, 1047–48 (8th Cir. 2000) (Gibson, J., dissenting) ("If, to prove collusion, a plaintiff has to prove that there was no cheating, thus no downward pressure on prices, cartels will be quite safe from the Sherman Act.").

294. Champagne Metals v. Ken-Mac Metals, Inc., 458 F.3d 1073, 1085 (10th Cir. 2006) (quoting 2 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW 101 (2d ed. 2003)).

regime that permits hindsight bias makes price-fixing conspiracies more likely.

In sum, judges act inconsistently when they say that a conspiracy need not be successful, but then hold that an alleged conspiracy's failure serves as strong evidence that the conspiracy never occurred. In the context of determining criminal penalties for price fixers, the Sixth Circuit has observed that "[i]t would be an anomaly to declare price-fixing illegal per se, without regard to its success, merely because of its plainly anticompetitive effect, but to provide for a fine only if the price-fixing were successful."[295] While Judge Posner cautioned about the "trap [of] failing to distinguish between the existence of a conspiracy and its efficacy,"[296] hindsight bias could elevate this mistake from an aberration to a canon.

IV. HAVING THE FORESIGHT TO PREVENT HINDSIGHT BIAS IN ANTITRUST LITIGATION

Given the existence of hindsight bias in antitrust litigation and its power to surreptitiously undermine antitrust doctrine, courts should take appropriate steps to prevent hindsight bias from infecting antitrust litigation. The predicament, unfortunately, is easier stated than solved. This Part explores the resilience of hindsight bias—in both legal and nonlegal contexts—and explains that awareness of the problem does not naturally lead to a solution.

A. Hindsight Bias and Antitrust Juries

If the factfinder learns about an alleged monopolist's failure to monopolize, an alleged predator's failure to recoup, or an alleged

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295. United States v. Hayter Oil Co. of Greeneville, 51 F.3d 1265, 1274 (6th Cir. 1995) ("Such a rule would result in the government being relieved of the burden of ascertaining a conspiracy's effect and success for purposes of obtaining a conviction only to have to bear that very burden to establish the propriety of any fine."); *see* United States v. SKW Metals & Alloys, Inc., 195 F.3d 83, 92 (2d Cir. 1999) ("We agree [with *Hayter Oil*] that ineffectual price-fixers should not escape meaningful penalty, particularly considering that the Guidelines scheme for price-fixing crimes relies on general deterrence and fines rather than long jail sentences.").

Actual anticompetitive effects are not necessary for criminal convictions for price fixing, as the Supreme Court has implied that "conduct undertaken with the purpose of producing anticompetitive effects" can "support criminal liability, even if such effects did not come to pass." United States v. U.S. Gypsum Co., 438 U.S. 422, 444 n.21 (1978). Participants in unsuccessful price-fixing conspiracies are still liable for criminal penalties and face minimum fines and potential imprisonment. Anne Marie Herron, *The Antitrust Sentencing Guideline: Deterring Crime by Clarifying the Volume of Commerce Muddle*, 51 EMORY L.J. 929, 947–48 (2002).

296. *In re* High Fructose Corn Syrup Antitrust Litig., 295 F.3d 651, 656 (7th Cir. 2002).

conspiracy's failure to raise prices, that knowledge will necessarily invite hindsight bias in a way that undermines antitrust doctrine. A limiting instruction to juries might seem like the most obvious solution to the hindsight bias problem. For example, judges could instruct juries that defendants' eventual failure to monopolize or to recoup does not mean that the defendants did not enjoy a dangerous probability of doing so when they embarked on their course of anticompetitive conduct.[297] Similarly, judges could state explicitly that the failure to raise market price does not prove the absence of an agreement to raise or stabilize prices. The conventional wisdom is that juries disregard evidence when instructed to do so by a judge.[298]

Jury instructions, however, cannot eliminate hindsight bias. Subjects in hindsight bias experiments do not ignore outcomes even when told to do so.[299] Indeed, the very nature of hindsight bias may prevent juries from ignoring evidence that they have been admonished to disregard.[300] Jurors may be either unwilling or unable to ignore information as demanded by a judge.[301] A mere jury instruction cannot change the way that a juror's brain processes information.[302] Moreover, limiting instructions can be counterproductive, as "research on 'psychological reactance' indicates that instructions to ignore

297. It is hard to believe that judges could sufficiently admonish juries not to overweigh this evidence when judges themselves do so. *See supra* Part II.

298. *See, e.g.*, United States v. Steele, 727 F.2d 580, 588 (6th Cir. 1984) ("[T]he subsequent striking of erroneously admitted evidence accompanied by a clear and positive instruction to the jury to disregard cures the error.").

299. Wexler & Schopp, *supra* note 51, at 487–88 ("[S]ubjects provided with outcome information and asked to disregard it did *not* behave like subjects asked to predict a given outcome in the absence of outcome knowledge."); *id.* at 488 ("Several studies have shown that merely admonishing people to disregard outcome information does not eliminate the hindsight bias." (citing Fischhoff, *supra* note 3)); *see also* Baruch Fischhoff, *Perceived Informativeness of Facts*, 3 J. EXPERIMENTAL PSYCHOL.: HUM. PERCEPTION AND PERFORMANCE 349 (1977).

300. Hawkins & Hastie, *supra* note 6, at 319. Hindsight bias can prevent jurors from ignoring evidence that they have been instructed to ignore. *See* Jonathan D. Casper, Kennette Benedict, & Jo L. Perry, *Juror Decision Making, Attitudes, and the Hindsight Bias*, 13 L. & HUM. BEHAV. 291, 309 (1989) ("The hindsight bias offers another paradigm. It suggests a somewhat different process, one in which the information is integrated into interpretation and recall of testimony in a way that makes it difficult for jurors to ignore information even when they conscientiously try to do so.").

301. Wistrich et al., *supra* note 49, at 1260 ("First, people who face instructions to ignore information might not want to ignore it and might attend to it even in the face of instructions to disregard it (motivation). Second, . . . people might find it difficult to avoid thinking about information they want to ignore (ironic process theory).").

302. Rachlinski, *supra* note 27, at 603 ("In fact, courts do not attempt to use judicial instructions as a means of debiasing jurors. Instructions typically ask for unbiased ex post judgments of ex ante probabilities without suggesting how to accomplish this complex cognitive task.").

information might increase people's desire to attend to it."[303] Professors Andrew Wistrich, Chris Guthrie, and Jeffrey Rachlinski have explained that during a trial, "jurors might view instructions to ignore evidence as an unwarranted intrusion on their ability to decide a case as they see fit."[304] Because warning people about hindsight bias has no meaningful curative effect, jury instructions are unlikely to resolve the problem.[305]

Studies on hindsight bias teach us that it is difficult for people to ignore information after learning about it because of "cognitive forces—it is difficult to train our mind to ignore information when we constantly train it to incorporate all available information—as well as motivational factors—it is more pleasant to perceive ourselves as those who were sharp enough to predict the unpredictable."[306] This is the essence of hindsight bias and it is "essentially impossible to avoid."[307] This lesson about human behavior applies no less to jurors than the general population.[308]

Once a person knows of an actual outcome, it is all but impossible to eliminate the effects of hindsight bias. Debiasing techniques cannot eradicate hindsight bias.[309] Although people are generally unaware of their own hindsight bias,[310] warning them about the likelihood and consequences of hindsight bias has no meaningful effect.[311] Indeed, "[p]sychologists have uncovered no way to instruct

303. Wistrich et al., *supra* note 49, at 1261; *see also* Dennis J. Devine, Laura D. Clayton, Benjamin B. Dunford, Rasmy Seying & Jennifer Payne, *Jury Decision Making: 45 Years of Empirical Research on Deliberating Groups*, 7 PSYCHOL. PUB. POL'Y & L. 622, 666 (2001) ("In general, limiting instructions have proven to be ineffective and have even been associated with a paradoxical increase in the targeted behavior.").

304. Wistrich et al., *supra* note 49, at 1261.

305. Rachlinski, *supra* note 27, at 603 ("Judicial instructions are unlikely to include a mechanism that would fare any better.").

306. Teichman, *supra* note 6, at 354.

307. Guthrie et al., *supra* note 19, at 824.

308. *See* Wistrich et al., *supra* note 49, at 1255 ("Most observers agree that it is not easy for jurors to deliberately disregard what they know.").

309. Fischhoff, *supra* note 28, at 428 ("Research on this bias has included investigations of most of the possible debiasing strategies included in the previous section. Few of these techniques have successfully reduced the hindsight bias; none has eliminated it."); *see also* Rachlinski, *supra* note 27, at 586 ("Fischhoff's demonstration of the hindsight bias was followed by a series of efforts to find a successful debiasing strategy—a way of evaluating the predictability of past events accurately. These efforts have been unsuccessful."); Teichman, *supra* note 6, at 364 ("[A] significant body of work has demonstrated that undoing the effects of the hindsight bias is a thorny task.").

310. Anderson et al., *supra* note 26, at 711–12 ("[I]ndividuals are apparently unaware of the effect that outcome knowledge has on their perceptions."); Fischhoff & Beyth, *supra* note 5, at 3 ("In particular, we found that judges appear to be generally incapable of assessing the changes in their judgments induced by possession of outcome knowledge.").

311. Rachlinski, *supra* note 27, at 603 ("Psychologists have uncovered no way to instruct people on how to evaluate decisions in hindsight in a way that completely avoids the hindsight

people on how to evaluate decisions in hindsight in a way that completely avoids the hindsight bias."[312] One meta-analysis of almost one hundred studies on hindsight bias reported that "manipulations to reduce hindsight bias did not result in significantly smaller effect sizes."[313] Ultimately, debiasing is "a nonviable solution to the effects of [hindsight] bias."[314] In short, jury instructions cannot solve the problem of hindsight bias in antitrust litigation.

B. Hindsight Bias and Antitrust Judges

Another possible solution would be to rely more heavily on judges rather than juries to make factual determinations about elements of antitrust claims that are susceptible to hindsight bias. The conventional wisdom is that judges can ignore inadmissible evidence and not accord it weight in their decisionmaking. Judges are assumed to be better at this task than jurors.[315] This may be true in some limited contexts. For example, research suggests that some judges may be able to avoid hindsight bias in probable cause determinations.[316] This may, however, be an atypical instance in which judges are uniquely able to disregard inadmissible evidence. It may be that judges are less

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bias."); *see also* Fischhoff, *supra* note 19, at 343 ("[M]erely warning people about the dangers of hindsight bias has little effect.").

312. Rachlinski, *supra* note 27, at 603; *see* Wolfgang Hell et al., *Hindsight Bias: An Interaction of Automatic and Motivational Factors?* 16 MEMORY & COGNITION 533. 533 (1988) (finding that offering people monetary incentives does not reduce the occurrence of hindsight bias).

313. Rebecca L. Guilbault, Fred B. Bryant, Jennifer H. Brockway & Emil J. Posavac, *A Meta-Analysis Research On Hindsight Bias*, 26 BASIC & APPLIED SOC. PSYCHOL. 103, 110 (2004).

314. Teichman, *supra* note 6, at 366 ("In sum, legal scholars have tended to view de biasing procedure as a nonviable solution to the effects of the bias (Rachlinski 1998). To the extent this argument refers to the possibility of completely eradicating the influence of the bias on decision-makers, it is undoubtedly correct."); Stephen J. Hoch & George F. Loewenstein, *Outcome Feedback: Hindsight* and *Information,* 15 J. EXPERIMENTAL PSYCHOL.: LEARNING, MEMORY, & COGNITION 605, 606 (1989) ("The overwhelming verdict . . . is that the hindsight bias is a robust phenomenon that is not easily eliminated or even moderated.").

315. Wistrich et al., *supra* note 49, at 1277 (2005) ("For several reasons, judges might be better able than jurors to disregard inadmissible information."); *id.* at 1255–56 ("[C]ommentators have argued that judges are much better able than jurors to ignore inadmissible evidence.").

316. *Id.* at 1317:

> Our study produced no evidence that the hindsight bias affected the judges' assessments of probable cause. Knowledge of the fruits of the search had no discernible effect on judges' decision making. Judges were able to ignore the damning evidence that the search produced and make essentially the same decision as judges who were unaware of what the search would uncover. The results also reveal only the slightest trend towards a hindsight bias.;

see also Teichman, *supra* note 6, at 360 ("[W]hile judges are not immune from the bias, there are indications that its effect on their behavior is significantly smaller than its effect on untrained individuals.").

susceptible to hindsight bias in probable cause cases because they frequently encounter this issue.[317] Antitrust litigation is different; judges decide antitrust cases relatively infrequently and may not recognize when attempted monopolization occurs if they are prone to granting summary judgment against valid claims.

Importantly, relying on judges instead of juries does not eliminate hindsight bias.[318] In most situations, judges exhibit hindsight bias just as jurors do.[319] Judges cannot avoid hindsight bias because it is a nondeliberate cognitive bias that happens subconsciously.[320] Controlled experiments involving actual judges demonstrate that judges are influenced by inadmissible evidence.[321] In particular, experimental research demonstrates that "judges informed of a particular outcome were much more likely than the other judges to have identified that outcome as the most likely to have occurred."[322] For example, in the context of tort litigation, "researchers found that judges were more likely to identify conduct as unreasonable, negligent, or even reckless after learning that the conduct had produced an accident."[323] Similarly, even when a defendant's adoption of remedial measures after an accident is inadmissible to demonstrate that the defendant was negligent before the accident, research shows judges to be unable to disregard this inadmissible evidence when making their negligence determination.[324] Ultimately, hindsight bias "is virtually impossible to purge from legal decision making and influences both jurors and experienced judges alike."[325]

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317. Rachlinski et al., *supra* note 44, at 97:

> Judges would be able to remember specific rulings on probable cause cases, and could have engaged analogical reasoning processes to try to recall cases similar to those that we provided. If so, and if hindsight does not affect their ability to recall similar cases, then this process might have insulated judges from the influence of the hindsight bias.

318. Guthrie et al., *supra* note 19, at 801 ("Greater reliance on judges is unlikely to eliminate its effect on adjudication. Although experience reduces the effect of the hindsight bias somewhat, it does not eliminate it.").

319. *Id.* at 818 ("[J]udges in our study exhibited hindsight bias to the same extent as mock jurors and other laypersons."); *id.* at 804 ("[O]ur findings are consistent with other studies showing that judges are vulnerable to the hindsight bias.").

320. *Id.* at 804 ("When predicting the likelihood of something after the fact, judges cannot help but rely on facts that were unavailable before the fact.").

321. Wistrich et al., *supra* note 49, at 1259 ("[W]e found that some types of highly relevant, but inadmissible, evidence influenced the judges' decisions.").

322. Guthrie et al., *supra* note 19, at 802 (citations omitted).

323. Wistrich et al., *supra* note 49, at 1314.

324. Stephan Landsman & Richard F. Rakos, *A Preliminary Inquiry into the Effects of Potentially Biasing Information on Judges and Jurors in Civil Litigation*, 12 BEHAV. SCI. & L. 113, 117 (1994).

325. Guthrie et al., *supra* note 19, at 827.

Thus, although it might seem attractive to simply assign issues to judges and educate them about hindsight bias,[326] education is no panacea.[327] Even when judges are warned about the risk of hindsight bias, they are still subject to it. As with laypeople, educating judges about hindsight bias does not completely mitigate its effects.[328] Nevertheless, judicial education about hindsight bias may still be useful. At a minimum, appellate judges should be on the lookout for district court judges committing hindsight bias and should, when appropriate, reverse decisions that seem affected by hindsight bias.

C. Hindsight Bias and the Sheltered Jury

The most direct way to address hindsight bias by antitrust juries is for judges to suppress evidence of subsequent market performance. In non-antitrust contexts, legal scholars have noted that "[t]he best way to prevent inadmissible information from influencing jurors is to shield them from it altogether."[329] There is no obvious downside to not informing jurors of a firm's subsequent market performance.[330] This information is not part of an attempted monopolization or predatory pricing claim under Section Two or a per se claim under Section One. Some scholars have argued that suppressing evidence cannot solve the problem of hindsight bias in negligence trials because the jury will necessarily intuit that an adverse event must have taken place and then reason backwards that it would not have occurred unless the defendant had been negligent.[331] But this reasoning does not apply to Section Two claims that do not require actual monopolization or recoupment, or to Section One claims in which the agreement alone violates antitrust law.

After documenting hindsight bias in many legal contexts, Professors Wistrich, Guthrie, and Rachlinski advocated a greater

326. *Id.* at 821 ("[J]udges might learn to educate themselves about cognitive illusions so that they can try to avoid the errors that these illusions tend to produce.").

327. *See supra* notes 299–314 and accompanying text.

328. Guthrie et al., *supra* note 19, at 825 ("Unfortunately, understanding the hindsight bias does nothing to reduce its influence; neither does instructing subjects to be careful to avoid its effects. The judges in our study revealed a strong hindsight bias. Previous research suggests that correcting for the bias is not feasible.").

329. Wistrich et al., *supra* note 49, at 1253; *see also* Teichman, *supra* note 6, at 366 ("Once jurors are unaware of the outcome, so the argument goes, the problems of judging in hindsight can be eliminated.").

330. Jolls et al., *supra* note 54, at 1529 ("If hindsight bias is unimportant, then whether jurors are told what outcome occurred should not matter; either way, they should be able to make a correct ex ante determination.").

331. Rachlinski, *supra* note 27, at 605.

reliance on juries as a possible solution.[332] Judges can shield jurors from information that may lead to hindsight bias.[333] The professors reasoned that "when the only means of avoiding the effect of a cognitive illusion is to restrict access to the information that triggers it, a jury trial has a substantial advantage over a bench trial."[334]

The Federal Rules of Evidence provide a sound basis for excluding evidence that invites hindsight bias. In admitting evidence of subsequent market performance, courts assert that the evidence is relevant and, therefore, admissible. But these are separate inquiries. Although antitrust courts are correct to characterize evidence of the defendant's subsequent market performance as sometimes relevant,[335] that does not necessarily mean that such evidence is admissible. In the context of post-conduct evidence in antitrust litigation, courts are often too quick to equate relevant and admissible.[336] Such conflation is improper because relevant evidence is inadmissible if it is substantially more prejudicial than probative.[337]

In non-antitrust contexts, courts have noted that hindsight bias can render evidence of subsequent events substantially more prejudicial than probative and thus inadmissible. For example, in a takings case involving a rezoning decision after condemnation proceedings had taken place, Justice Kelly of the Michigan Supreme Court explained that evidence of the post-condemnation rezoning should not be admitted because " 'hindsight bias' [can] . . . lead[ ] the jury to give the evidence undue weight and render it unfairly prejudicial."[338] Relevance alone does not answer the question of admissibility because hindsight "bias demonstrates why the evidence can be relevant yet unfairly prejudicial."[339] Furthermore, limiting instructions cannot solve the problem, the Justice noted, because the risk remains that "the jury will accord it weight wildly disproportionate

332. Guthrie et al., *supra* note 19, at 821 ("[T]he legal system might consider reallocating decision-making power between judges and juries as a means of reducing the effects of cognitive illusions.").

333. Wistrich et al., *supra* note 49, at 1259 ("[W]e contend that jury trials should be favored over bench trials because judges can shield jurors from inadmissible information in ways that they cannot shield themselves.").

334. Guthrie et al., *supra* note 19, at 827.

335. *See supra* notes 90–97 and accompanying text.

336. *See supra* note 95 and accompanying text.

337. FED. R. EVID. 403 ("The court may exclude relevant evidence if its probative value is substantially outweighed by a danger of one or more of the following: unfair prejudice . . . .").

338. Mich. Dep't. of Transp. v. Haggerty Corridor Partners Ltd. P'ship, 700 N.W.2d 380, 400 (Mich. 2005) (Kelly, J., concurring).

339. *Id.*

to its probative value and treat rezoning when the taking occurred as a foregone conclusion."[340]

The risk of hindsight bias renders evidence of subsequent market performance highly prejudicial. Jurors are too apt to conclude, consciously or subconsciously, that if the defendant did not actually achieve monopoly power, then such failure was inevitable and the defendant never enjoyed a dangerous probability of monopolizing the market. This is precisely the calculation that dozens of federal judges have performed in attempted monopolization cases where courts have granted summary judgment to antitrust defendants.[341] Given the power of hindsight bias and the minimal probative value of post-conduct market power,[342] courts can reasonably conclude that the prejudicial effect of such evidence substantially outweighs its probative value and therefore the evidence should not be admitted.[343]

Preventing jurors from hearing evidence that invites hindsight bias is a practical solution for antitrust trials. But most antitrust claims do not make it to juries, in part, because federal judges often grant summary judgment on these claims, sometimes as a result of hindsight bias.[344] Although a preference for jury trials over bench trials makes sense after the litigation reaches the trial stage, it is harder to deal with hindsight bias in the context of motions to dismiss and motions for summary judgment. The judges deciding such motions generally know whether the defendant's anticompetitive conduct succeeded or failed. Judges cannot be made ignorant of such information. This provides an additional reason for federal judges to be less quick to grant summary judgment to antitrust defendants. If the judge knows that the defendant's conduct failed to create monopoly power or that the defendants' alleged conspiracy failed to succeed, the judge's susceptibility to hindsight bias may lead her to an incorrect conclusion about the ex ante likelihood of success.

Judges need to recognize that their exposure to outcome information subconsciously affects their ability to process information. Perhaps this will lead them to appreciate the value of a jury that is unaware of the outcome and that will be unaffected by hindsight bias. Unfortunately, because people generally believe that they are

340. *Id.* at 339–400.

341. *See supra* Section II.A.

342. *See supra* note 269 and accompanying text (discussing how firms can have a dangerous probability of monopolizing the market even when their market shares decrease).

343. *See supra* note 337 and accompanying text.

344. *See supra* Part II.

unaffected by cognitive biases, it may be hard to convince judges that they themselves are susceptible to hindsight bias and should thus give the case to a clean-slate jury. This suggests another advantage to educating judges about the risk of hindsight bias: even though education cannot prevent an individual from experiencing hindsight bias in a specific case, it may help judges recognize the larger problem and rely more on juries that have not heard information that invites hindsight bias.

Appellate panels should be alert to the possibility that hindsight bias has affected a trial judge's decisionmaking. This bias may be reflected in an opinion that mentions or emphasizes the failure of the defendant's alleged anticompetitive scheme. Or, instead, hindsight bias may be triggered by the defendant's argument that the failure of its alleged plan proves a lack of attempt or absence of dangerous probability of success. Such opportunities for hindsight bias warrant an effort by appellate judges to ferret out this bias and, where appropriate, reverse any opinions tainted by it.

CONCLUSION

This Article has presented dozens of examples of federal judges succumbing to hindsight bias when adjudicating antitrust claims. This is unfortunate because when hindsight bias distorts the results of antitrust cases, it can have real consequences for markets. Attempted monopolization schemes can inflict antitrust injuries on efficient competitors even when the defendant fails to monopolize the market. Similarly, when predatory pricing plans do not recoup the defendant's investment in below-cost pricing, they can nevertheless create inefficiency, injure efficient competitors, and impose illegal overcharges on consumers in the post-predation period. Even price-fixing conspiracies that fail to raise prices can inflict injuries on consumers. Hindsight bias prevents antitrust law from achieving its goals of deterring and penalizing anticompetitive conduct that imposes antitrust injury on efficient competitors—in the cases of attempted monopolization and predatory pricing claims—and on consumers in the case of price fixing.

Research shows that hindsight bias is not easily remedied. Once exposed to information about actual outcomes, people—including judges—find it too difficult to disregard that information when calculating ex ante probabilities even if they know that they should ignore it. Federal judges should be cognizant of the risk of hindsight bias and their own susceptibility to it. In many cases, this awareness should make judges less eager to grant summary judgment to antitrust defendants and more willing to limit jury exposure to outcome evidence. Such changes would better enable courts to achieve the goals of antitrust law.

The fact that judges deciding antitrust cases have fallen victim to hindsight bias has implications both for the field of behavioral economics and for antitrust law. With respect to the former, behavioral economics has been providing insights into how individuals make decisions and how markets operate for decades. For much of that time, economists and legal scholars have applied these insights to legal doctrine and procedure. This Article demonstrates another area of decisionmaking in which hindsight bias can distort results in litigation. To the extent that anybody still doubts whether hindsight bias exists, this Article provides another data point—or series of data points—in illustration of the general principle that knowing subsequent events can affect one's ex ante estimation of probabilities. Appellate courts should examine records for evidence of hindsight bias and reverse when hindsight bias has caused a trial judge to improperly dismiss an antitrust claim or to improperly grant summary judgment to an antitrust defendant.[345] Antitrust law does not limit its condemnation or penalties to profitable conspiracies and predatory conduct. Antitrust law punishes anticompetitive conduct that inflicts antitrust injury on competitors and consumers, regardless of whether the defendant initially profited from its misdeeds. The sine qua non of an antitrust violation is not the defendant's success, but the competitive injuries caused by the defendant's anticompetitive conduct.

Given that economics plays a greater role in antitrust law than most other areas of law, it makes sense that behavioral economics is particularly suited to inform antitrust doctrine and procedure. The cases discussed in Part III provide more evidence for the proposition that hindsight bias is difficult to prevent. Federal judges have been put on notice to avoid the risk of hindsight bias when evaluating attempted monopolization. Indeed, using subsequent events to predict the probability of actual monopolization is inappropriate *as a matter of law*. Nonetheless, several judges admit to doing so in their written opinions, effectively rewriting antitrust doctrine.

345. The presence of hindsight bias does not necessarily mandate reversal if the plaintiff's attempted monopolization claim should fail for an independent reason untainted by hindsight bias.