ANTITRUST ERROR

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ABSTRACT

Fueled by economics, antitrust has evolved into a highly sophisticated body of law. Its malleable doctrine enables courts to tailor optimal standards to a wide variety of economic phenomena. Indeed, economic theory has been so revolutionary that modern U.S. competition law bears little resemblance to that which prevailed fifty years ago. Yet, for all the contributions of economics, its explanatory powers are subject to important limitations. Profound questions remain at the borders of contemporary antitrust enforcement, but answers remain elusive. It is because of the epistemological limitations of economic analysis that antitrust remains unusually vulnerable to error.

The fear of mistakenly ascribing anticompetitive labels to innocuous conduct is now pervasive. The Supreme Court has repeatedly framed its rulings in a manner that shows sensitivity to the unavoidability of error. In doing so, it has adopted the principle of decision theory that Type I errors are generally to be preferred over Type II. It has crafted a pro-defendant body of jurisprudence accordingly. In 2008, the Justice Department picked up the gauntlet and published the first definitive attempt at extrapolating optimal error rules. Yet, in 2009, the new administration promptly withdrew the report, opining that it could "separate the wheat from the chaff" and thus marginalizing the issue of error. Notwithstanding this confident proclamation, error remains as visible as ever. Intel's behavior in offering rebates has been subject to wildly fluctuating analysis by the

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U.S. and E.U. enforcement agencies. In a marked departure from precedent, the DOJ is again viewing vertical mergers with concern. And the agency has reversed course on the legality of exclusionary payments in the pharmaceutical industry. Antitrust divergence, both within and outside the United States, remains painfully apparent, demonstrable proof that vulnerability to error remains systemic. For this reason, error analysis may be the single most important unresolved issue facing modern competition policy.

This Article seeks to challenge the contemporary mode of error analysis in antitrust law. We explain the causes and consequences of antitrust error and articulate a variety of suggested cures. In doing so, we debunk the current presumption that false positives are necessarily to be preferred over false negatives. We highlight a variety of cases in which the contemporary bias in favor of underenforcement should be revisited.

TABLE OF CONTENTS

INTRODUCTION 78
I. THE ROLE OF ERROR IN COMPETITION LAW 82
A. The Contemporary Role of Error Analysis 82
B. Antitrust's Unique Vulnerability to Error 86
C. Questioning Contemporary Error Analysis 94
1. Basic Error Analysis 94
2. Debunking Current Error Analysis 97
3. The Section 2 Report Debacle 100
II. REVISITING ERROR ANALYSIS IN U.S. ANTITRUST LAW 102
A. Rules and Standards 102
B. Constructing Behavior-Specific Error Rules 104
1. Merger Analysis 105
2. "Pay-for-Delay" Agreements 109
3. Refusals To Supply 116
4. Predatory Pricing 118
5. Vertical Distribution Contracts, Integration, and Product Tying 122
6. Should Certain Instances of Price-Fixing Be Analyzed Under the Rule of Reason? 124
C. Putting Faith in the Agencies? Prosecutorial Discretion as a Facilitator of a Permissive Rule 127
CONCLUSION 130

INTRODUCTION

In 2006, the Federal Trade Commission (FTC) and U.S. Department of Justice (DOJ or Justice Department) agreed to undertake a review of antitrust enforcement against monopolistic conduct.[1] This review was to culminate in a joint report setting forth their views and proposing, among other things, a general test for assessing arguably anticompetitive, unilateral conduct.[2] The review was undertaken, but the 2008 report that followed was approved by the Justice Department alone.[3] The general test that it proposed —no enforcement unless evidence demonstrated "substantial disproportion[ality]" between the anticompetitive harm and the procompetitive benefit caused by the conduct in question[4]—adopted the view that antitrust enforcement was so prone to administrative and judicial error that a wide margin of safety was necessary to prevent errors that would punish or discourage vigorously competitive conduct. The FTC strenuously disagreed with that proposal, believing that it unfairly biased antitrust inquiry in favor of dominant firms.[5] In 2009, after the change in administration, the newly appointed head of the Antitrust Division of the DOJ withdrew the report, in disagreement with its view of administrative error, piously announcing that there would be no errors on her watch.[6]

These dramatic events underscore the central role of error in antitrust enforcement and adjudication. They also illustrate the crucial importance of identifying optimal modes of error analysis. This Article seeks to engage contemporary error rules in antitrust and in doing so, explain the source of indeterminacy in this area of

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1. *See* U.S. DEP'T OF JUSTICE, COMPETITION AND MONOPOLY: SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT vii (2008), *available at* http://www.usdoj.gov/atr/public/reports/236681.pdf.

2. *See id.*

3. *See* Dawn Goulet, Consumer News, *Justice Department's Section 2 Report Sparks a Heated Debate in the Antitrust Community*, 21 LOY. CONSUMER L. REV. 268, 269 (2008).

4. *See* U.S. DEP'T OF JUSTICE, *supra* note 1, *passim*.

5. *See* Press Release, FTC, FTC Commissioners React to Department of Justice Report (Sept. 8, 2008), *available at* http://www.ftc.gov/opa/2008/09/section2.shtm.

6. *See* Press Release, U.S. Dep't of Justice, Justice Department Withdraws Report on Antitrust Monopoly Law (May 11, 2009), *available at* http://www.usdoj.gov/opa/pr/2009/May/09-at-459.html.

the law, reveal why the current mode of error treatment is unsatisfactory, and discern the optimal method of approaching rulemaking in the uncertain world of antitrust adjudication.

Error is uniquely prevalent in this field because antitrust is routinely called upon to deliver answers to unsolvable problems.[7] The intertemporal impact of commercial conduct denies policymakers crucial information about future effects, which, combined with the epistemological limitations of contemporary economic theory, necessitates decision making under uncertainty. The chronic degree of indeterminism that pervades this area of law makes mistaken conclusions understandable—even inevitable—but it does not render them any less costly. For these reasons, it is hardly surprising that competition law displays a unique fixation with error.[8]

Courts, agencies, and academics have reacted to antitrust's unusual vulnerability to error by adopting a bias in favor of false negatives (Type II errors).[9] Believing that procompetitive behavior erroneously condemned will result in a permanent loss of the behavior's benefit, and reasoning that anticompetitive conduct wrongly permitted will be ephemeral due to the market's self-correcting nature, the law seeks to err on the side of underenforcement.[10] This principle has proven to be remarkably influential with respect to antitrust scrutiny of dominant-firm behavior, in particular. Meanwhile, the various premises upon which the modern U.S. error rule has been built have remained unquestioned.

Unfortunately, the role of error analysis in U.S. antitrust law is imperfect. First, the current approach assumes that the risk of mistake is uniform. The law thus posits that all Type I errors are equal in magnitude and probability. Similarly, Type II errors are assumed to be constant. Second, the law acts as if error is apt to

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7. For the authors' prior discussion on this subject, see Alan Devlin & Michael Jacobs, *Antitrust Divergence and the Limits of Economics*, 104 NW. U. L. REV. (forthcoming 2010), *available at* http://ssrn.com/abstract=1429541.

8. *See* Andrew I. Gavil, *Antitrust Bookends: The 2006 Supreme Court Term in Historical Context*, 22 ANTITRUST 21, 21 (2007); C. Scott Hemphill, *An Aggregate Approach to Antitrust: Using New Data and Rulemaking To Preserve Drug Competition*, 109 COLUM. L. REV. 629, 669 (2009).

9. *See* Fred S. McChesney, *Talking 'Bout My Antitrust Generation: Competition for and in the Field of Competition Law*, 52 EMORY L.J. 1401, 1413 (2003).

10. *See* Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1 *passim* (1984).

arise to the same extent for all offenses, other than for those condemned as per se illegal. This is particularly true of violations allegedly committed by a monopolist or within a vertical market structure. Yet, there is limited theoretical or empirical basis for such an assumption. Third, the law assumes that the same error rule—Type II mistakes are to be preferred over Type I—should apply to all instances in which the risk of error is present. This uncritical conclusion results in an overbroad heuristic that departs from the optimal rule with unacceptable regularity.

The prevailing response to the systemic problem of indeterminism is therefore unsatisfactory. We suggest in particular that antitrust law's unwavering promotion of false negatives over false positives is nonoptimal, and reflects inadequate engagement with the substantive problem. To construct an optimal heuristic, one must first determine the frequency with which the two forms of error actually occur in administration and litigation. Next, one must determine the severity of the errors in each category and the likely temporal range of this severity. In particular, one must determine the length of time necessary for Type II errors to be washed from the system—that is, for the market to return to its predistortion competitive state.

The law assumes that Type I errors result in the perpetual loss of efficiencies, but what about the second-best solutions that markets will devise in response to Type I errors? Surely some of these will be almost as desirable as the impugned behavior. If so, this suggests that the true cost of Type I errors might be lower than claimed. Moreover, although currently assumed, it is not the case that erroneous rules are perpetual. Nor can the market always be trusted to correct anticompetitive conditions mistakenly condoned. Antitrust history is replete with examples of improper rules quickly being circumvented long before they are formally overruled. Furthermore, recent experience suggests that monopolistic behavior may not always be eliminated by the market in a timely fashion, especially where powerful network effects are present.

These nuanced points have largely escaped the attention of enforcement agencies, courts, practitioners, and academics. The current default rule in favor of underenforcement thus lacks a solid intellectual foundation and needs revision. We find that one-size-fits-all error rules are unlikely to yield optimal enforcement and

liability determinations. Instead, behavior-specific heuristics that depart from a dogmatic aversion to Type I errors in appropriate circumstances can and should be developed. This Article explores a range of commercial conduct and suggests that scenarios exist in which an unqualified predilection in favor of false negatives is unsuitable.

Although we conclude that antitrust should depart from its predisposition to avoiding Type I errors in certain settings, even then it should approach lawsuits initiated by private parties with a high degree of suspicion.[11] Private plaintiffs' assertions of anticompetitive conduct are paradigmatically noncredible, which ought to color courts' reception of those claims. We believe that private claims of monopolization should be met with particular skepticism.

Yet it is not clear that actions initiated by the enforcement agencies should encounter similar hostility. Although these bodies may be inclined for political reasons to adopt an excessively or inadequately aggressive posture, legitimate disagreement over the proper rate of intervention in the economy exists. Given the agencies' expertise, the judiciary should be willing to consider novel theories of anticompetitive effect that they might advance. Of course, the judiciary must hold the enforcement agencies to the law, but the dialectic approach to competition policy promises to yield a richer body of jurisprudence. One need only survey the evolution of merger doctrine to see how the agencies can transform substantive law into far more nuanced and economically sophisticated form. In sum, the enforcement agencies are less prone to bringing erroneous enforcement actions. Traditional error analysis should therefore be relaxed in cases initiated by the FTC and DOJ.

Part II frames the issue of antitrust error in its proper context, describes the epistemological dilemma that characterizes antitrust jurisprudence, explores how U.S. law has sought to accommodate indeterminism in its substantive doctrine and enforcement philosophy, and explains the shortfalls of contemporary modes of error analysis. We then discuss conduct-specific error rules, showing in the process how the prevailing bias in favor of false negatives is, at times, nonoptimal. More nuanced analysis reveals that the probability and magnitude of various outcomes can be considered—a reality

11. *See* Advo, Inc. v. Phila. Newspapers, Inc., 854 F. Supp. 367, 376 (E.D. Pa. 1994).

that requires the law to be open to preferring false positives in some cases. We also explain why courts' aversion to Type I errors should be relaxed in the presence of lawsuits initiated by the FTC or DOJ. We conclude that significant revisions are needed in the application of error rules to antitrust cases.

I. THE ROLE OF ERROR IN COMPETITION LAW

A. The Contemporary Role of Error Analysis

In 2009, the new head of the Justice Department's Antitrust Division confidently proclaimed that her administration could solve the definitive problem that has long plagued antitrust enforcement —the ever-present risk of erroneous condemnation.[12] With her bold assertion that the DOJ can "separate the wheat from the chaff," and avoid error entirely, Christine Varney effectively dismissed two decades of Supreme Court jurisprudence focused on developing rules to minimize the frequency and impact of erroneous decisions.[13] Her view lacks a foundation, however, in history, logic, or economics. Antitrust enforcement is inevitably hindered by a fundamental dilemma: for a variety of reasons, the economic impact of many contestable business behaviors is uncertain and therefore very difficult to assess correctly ex ante.

For the past thirty years, the antitrust community has operated on the basis of a simple consensus regarding a few general principles. Commentators generally agree that preserving and promoting "consumer welfare" should be the main objective of antitrust enforcement, and that an unhindered competitive process is desirable because it promises to serve those interests better than any available alternative.[14] Much of the time, however, it is unclear whether particular business conduct will promote consumer welfare, harm it, or leave it undisturbed. For example, conduct that causes harm in the present may bestow greater benefit in the uncertain future.

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12. *See* Press Release, U.S. Dep't of Justice, *supra* note 6.

13. *See* Christine A. Varney, Assistant Att'y Gen., Antitrust Div., U.S. Dep't of Justice, Remarks as Prepared for the U.S. Chamber of Commerce: Vigorous Antitrust Enforcement in this Challenging Era 6 (May 12, 2009), *available at* http://www.usdoj.gov/atr/public/speeches/245777.pdf.

14. See McChesney, *supra* note 9, at 1407 n.29.

Given the inability of economic theory to quantify or even to estimate the repercussions of much challenged conduct, the danger of erroneous decision making is systemic.

The epistemological limitations of economic theory are crucially important. Much of the business conduct that attracts regulatory attention is characterized by asymmetric intertemporal effects, which can be neither measured empirically nor satisfactorily approximated by theory. The relationship between innovation and monopoly is not yet fully understood,[15] but it would seem that the two are not necessarily mutually exclusive.[16] Economics is incapable of providing enforcers many of the definitive answers they seek. Lacking sufficient information, courts and agencies are forced to formulate doctrine in the dark. How can they construct rules responsibly when handicapped by such a knowledge deficit?

They have done so by employing decision theory, the branch of microeconomics concerned with optimal choice in the presence of uncertainty. This theory often suggests a preference for Type II errors, or false negatives.[17] In the familiar setting of criminal law, where error is also a chief concern of both substantive doctrine and enforcement policy, most people consider it worse to convict an innocent person than to free a guilty one.[18] As a result, the standard of proof in criminal law is more demanding than in other settings, and more guilty people walk free than would otherwise be the case. This result is generally accepted as the necessary cost of minimizing miscarriages of justice.[19]

Antitrust law has adopted this standard in an analogous, but simplistic, manner. It has embraced the principle championed by Chief Judge Easterbrook that competition policy should err on the

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15. *See* Jonathan B. Baker, *Promoting Innovation Competition Through the* Aspen/Kodak *Rule*, 7 GEO. MASON L. REV. 495, 509-10 (1999); David McGowan, *Innovation, Uncertainty, and Stability in Antitrust Law*, 16 BERKELEY TECH. L.J. 729, 732-33 (2001); F.M. Scherer, *Antitrust, Efficiency, and Progress*, 62 N.Y.U. L. REV. 998, 1010-12 (1987).

16. To complicate matters further, distortions that arise in one market often permeate through to seemingly unrelated segments of the economy. Yet, these inefficiencies are difficult to track and, for that reason, are sometimes omitted from consideration entirely.

17. *See* Melvin Aaron Eisenberg, *Bad Arguments in Corporate Law*, 78 GEO. L.J. 1551, 1553 (1990).

18. *See* Kate Stith, *The Risk of Legal Error in Criminal Cases: Some Consequences of the Asymmetry in the Right To Appeal*, 57 U. CHI. L. REV. 1, 4 (1990).

19. *See* Scott E. Sundby, *The Reasonable Doubt Rule and the Meaning of Innocence*, 40 HASTINGS L.J. 457, 460 (1989).

side of underenforcement, since anticompetitive effects that escape condemnation will usually be eroded by the market, while the procompetitive benefits of an incorrectly outlawed action will be lost forever.[20] Though not applied as an explicit rule, this principle has significantly influenced the substantive and procedural barriers to recovery created by the courts. The judiciary and enforcement agencies have crafted a body of law that reacts skeptically to the complaints of an antitrust defendant's injured rivals.[21] An antitrust plaintiff faces an uphill battle in pleading and proving the constituent elements of the relevant cause of action.[22] Doctrine has been deliberately crafted to siphon off complaints that bear an unacceptable propensity for false positives. The result is akin to the criminal setting: many consumer-injuring acts go unpunished, a consequence perceived as the necessary cost of ensuring that the law does not mistakenly stifle incentives to compete.

The inclination to err on the side of Type II errors has aligned the U.S. judiciary in large degree with the conservative teachings of the Chicago School.[23] From the late 1970s, the courts have systematically revisited prior doctrine that facilitated recovery in cases of competitor complaint.[24] Per se rules against vertical price- and market-sharing agreements have been abandoned.[25] A plaintiff alleging attempted monopolization must now prove that the aggressor had a dangerous probability of success.[26] Product tying is no

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20. *See* Easterbrook, *supra* note 10, at 2-3.

21. *See* William J. Kolasky, GE/Honeywell*: Continuing the Transatlantic Dialogue*, 23 U. PA. J. INT'L ECON. L. 513, 534 (2002); Charles F. Rule, *Claims of Predation in a Competitive Marketplace: When Is an Antitrust Response Appropriate?*, 57 ANTITRUST L.J. 421, 431 (1988); Diane P. Wood, *The U.S. Antitrust Laws in a Global Context*, 2004 COLUM. BUS. L. REV. 265, 270.

22. *See* Jonathan H. Adler, *Getting the Roberts Court Right: A Response to Chemerinsky*, 54 WAYNE L. REV. 983, 1004 (2008).

23. *Id.*

24. *See* William E. Kovacic, *The Intellectual DNA of Modern U.S. Competition Law for Dominant Firm Conduct: The Chicago/Harvard Double Helix,* 2007 COLUM. BUS. L. REV. 1, 34-35.

25. *See* Leegin Creative Leather Prods., Inc. v. PSKS, Inc., 551 U.S. 877, 881-82 (2007) (overruling Dr. Miles Med. Co. v. John D. Park & Sons Co., 220 U.S. 373 (1911)); State Oil Co. v. Khan, 522 U.S. 3, 7 (1997) (overruling Albrecht v. Herald Co., 390 U.S. 145 (1968)); Cont'l T.V., Inc. v. GTE Sylvania, Inc., 433 U.S. 36, 58 (1977) (overruling United States v. Arnold, Schwinn & Co., 388 U.S. 365 (1977)).

26. *See* James F. Ponsoldt, *Clarifying the Attempt To Monopolize Offense as an Alternative to Protectionist Legislation: The Conditional Relevance of "Dangerous Probability of Success,"*

longer per se illegal, but requires proof of several additional factors, including evidence that the tie will lead to market power in the tied market.[27] Price- and market-sharing agreements are no longer necessarily illegal when they are ancillary restraints that promote a larger good.[28] Price squeezes by dominant, vertically integrated firms have been declared legal.[29] Horizontal mergers that increase market concentration are no longer automatically unlawful.[30] The duty of a monopolist to share its intellectual or tangible resources with a rival has been narrowed to the point of being virtually nonexistent.[31]

These developments significantly impede plaintiffs' ability to recover for losses caused by allegedly anticompetitive conduct. There are doubtless many cases in which an aggrieved party has suffered injury that flows from a wrongful act. But contemporary rules deny recovery in at least some of these instances. According to the modern U.S. view, such inequities are justified because they are not as bad as erroneous outcomes in the opposite direction. An overly intrusive standard might create a constrictive business environment that would hamper the ability of innovative firms to compete, to succeed, and to enjoy their pecuniary rewards free from liability. Were the law to err in this direction, proscribing conduct that nudged the imprecise border between "vigorously competitive" and "anticompetitive," the dynamic nature of the U.S. economy would be weakened, and consumers made to pay a very large price, in the form of diminished competition.[32]

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61 NOTRE DAME L. REV. 1109, 1120 (1986).

27. *See* Carl Sandburg Vill. Condo. Ass'n No. 1 v. First Condo. Dev. Co., 758 F.2d 203, 210 (7th Cir. 1985).

28. *See* NCAA v. Bd. of Regents of the Univ. of Okla., 468 U.S. 85, 132-33 (1984); Thomas A. Piraino, Jr., *Making Sense of the Rule of Reason: A New Standard for Section 1 of the Sherman Act*, 47 VAND. L. REV. 1753, 1794-97 (1994).

29. *See* Pac. Bell Tel. Co. v. LinkLine Comm., Inc., 129 S. Ct. 1109, 1114-15, 1122 (2009).

30. *Compare* United States v. Von's Grocery Co., 384 U.S. 270, 274 (1966), United States v. Phila. Nat'l Bank, 374 U.S. 321, 323-24 (1963), *and* Brown Shoe Co. v. United States, 370 U.S. 294, 346 (1962), *with* U.S. DEP'T OF JUSTICE & FTC, HORIZONTAL MERGER GUIDELINES (1992) (rev. 1997), *available at* http://www.justice.gov/atr/public/guidelines/hmg.pdf.

31. *See* Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, 540 U.S. 398, 408-09 (2004).

32. *See* Thomas O. Barnett, *Interoperability Between Antitrust and Intellectual Property*, 14 GEO. MASON L. REV. 859, 859-61, 866-67 (2007).

These concerns provide the source of the modern U.S. antitrust-error rule, and explain its preference for false negatives. But why is an error rule necessary at all? What accounts for antitrust's unique admission, within civil law, of vulnerability to mistaken ascriptions of guilt or innocence? Part I.B answers these questions, explaining why antitrust determinations are unusually susceptible to error. This Article then explores, in some detail, the shortcomings of contemporary error analysis and places those failings in the larger context of interagency disputes concerning the appropriate analysis of business conduct whose long-run competitive effects are uncertain.

B. Antitrust's Unique Vulnerability to Error

More than any other area of civil law, antitrust is error-prone. Its primary statutes are confoundingly ambiguous.[33] Its basic analytical methodology is hopelessly imprecise. The economic terms at the heart of many of its important doctrinal questions—terms such as "cost," "market," "monopoly power," and "entry barrier"—are either vague, contestable, or both. In many cases, the answer to the question of interest—whether certain conduct is harmful to consumers—can depend upon first identifying and then comparing current or past harms and benefits with those likely, but not certain, to arise in the future. This comparison involves measuring the relative size of a known set of facts, on the one hand, and an uncertain but theoretically predictable future outcome, on the other. And finally, antitrust trials—famous, or notorious, for their complexity[34]—are often heard by lay juries unfamiliar with the relevant economics, save through conflicting and often equally

33. *See* Michael Komenda, Recent Development, *The Course Correction a Century in the Making:* Leegin Creative Leather Products, Inc. v. PSKS, Inc., *127 S. Ct. 2705 (2007)*, 31 HARV. J.L. & PUB. POL'Y 855, 867-68 (2008); Carl N. Pickerill, Note, *Specialized Adjudication in an Administrative Forum: Bridging the Gap Between Public and Private Law*, 82 NOTRE DAME L. REV. 1605, 1620 n.82 (2007).

34. *See* Daniel A. Crane, *Technocracy and Antitrust*, 86 TEX. L. REV. 1159, 1186 n.122 (2008). *But see* Maxwell M. Blecher & Howard F. Daniels, *In Defense of Juries in Complex Antitrust Litigation*, 1 REV. LITIG. 47, 74-78 (1980).

persuasive experts;[35] and those juries are empowered to award large judgments, which are then automatically trebled.[36]

The text of Section 1 of the Sherman Act outlaws all "contracts ... in restraint of trade."[37] So utterly impracticable is a literal interpretation of those words—it is the nature of every contract to restrain trade—that for nearly one hundred years, the Supreme Court has read the law to proscribe only those restraints that are "unreasonable,"[38] a reading that has created the analytical methodology called "the rule of reason."[39] As one might expect, the notion of commercially "unreasonable" behavior is neither clear nor fixed. Except for those few kinds of conduct—horizontal price-fixing and market division—judged to be "per se" unlawful,[40] the courts subject all other allegedly "unreasonable" conduct to full-blown rule-of-reason analysis, the object of which is to determine whether, on balance, the impugned conduct impedes or advances "consumer welfare."[41] This term is used to describe a state of economic affairs in which quality-adjusted output is expanding, or at least not contracting.[42] We will return shortly to this method of analysis and its acute proclivity for error. But suffice it to say here that the term "unreasonable," on which the interpreted text hinges, is vague enough to create concerns about erroneous judgments.[43]

The text of Section 2 of the Sherman Act is even more famously opaque.[44] The core of that section proscribes "monopolization," a term that is not defined in the statute, and one whose general meaning has—though not for lack of trying—escaped coherent

35. *See* Yane Svetiev, *Antitrust Governance: The New Wave of Antitrust*, 38 LOY. U. CHI. L.J. 593, 612 (2007).

36. Clayton Act, 15 U.S.C. § 15 (2006).

37. Sherman Act, 15 U.S.C. § 1 (2006).

38. *See* William Letwin, *The First Decade of the Sherman Act: Judicial Interpretation*, 68 YALE L.J. 900, 918-22 (1959).

39. *See* Cont'l T.V., Inc. v. GTE Sylvania, Inc., 433 U.S. 36, 49-50 (1977).

40. *See* Bus. Elec. Corp. v. Sharp Elec. Corp., 485 U.S. 717, 723 (1988); Arizona v. Maricopa County Med. Soc'y, 457 U.S. 332, 347-48 (1982); Kiefer-Stewart Co. v. Joseph E. Seagram & Sons, Inc., 340 U.S. 211, 213 (1951); United States v. Socony-Vacuum Oil Co., 310 U.S. 150, 218, 223 (1940).

41. *See* Piraino, *supra* note 28, at 1757-60, 1767.

42. *See, e.g.*, Chi. Prof'l Sports Ltd. P'ship v. Nat'l Basketball Ass'n, 961 F.2d 667, 673 (7th Cir. 1992); Ball Mem'l Hosp., Inc. v. Mut. Hosp. Ins., Inc., 784 F.2d 1325, 1334 (7th Cir. 1986).

43. *See* Nolan Ezra Clark, *Antitrust Comes Full Circle: The Return to the Cartelization Standard*, 38 VAND. L. REV. 1125, 1127 (1985).

44. Sherman Act, 15 U.S.C. § 2 (2006).

definition.[45] There is, to be sure, a broad judicial consensus that the offense of "monopolization" consists of two parts: (a) monopoly status, or other direct proof of monopoly power, and (b) "unlawful and exclusionary practices," or conduct that is "unfair" or "predatory."[46] But that is as far as the consensus goes, and for good reason. Setting aside the significant difficulties of market definition that regularly afflict the analysis of the first part of the offense,[47] it is sadly self-evident that the term "unlawfully exclusionary" is circular, and that its counterparts, "unfair" and "predatory," have no determinate meaning.[48] Finally, the recent history of antitrust litigation has demonstrated beyond dispute that novel practices undertaken by dominant firms can disrupt market stability and harm smaller rivals. In the process, they may sometimes generate enormous benefits for consumers, but on other occasions they may prove harmful to consumer interests. Critically, the line between novel conduct that is beneficial, on the one hand, and its harmful counterpart, on the other, is often so thin as to be invisible.[49] Consequently, error casts a long shadow over Section 2 litigation, in which, by many accounts, juries have recently made enormous and costly mistakes.[50]

Finally, Section 7 of the Clayton Act condemns those mergers that "may [tend] substantially to lessen competition," another form of words that can hardly be described as self-explanatory.[51] Even if it were clear what it might mean to "lessen competition" in the abstract, the adverb "substantially" would inevitably cause con-

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45. *See id.*; Einer Elhauge, *Defining Better Monopolization Standards*, 56 STAN. L. REV. 253, 255 (2003).

46. *See* United States v. Grinnell Corp., 384 U.S. 563, 570-71 (1966); Elhauge, *supra* note 45, at 257, 265 n.38.

47. *See* MILTON HANDLER ET AL., TRADE REGULATION: CASES AND MATERIALS 210 (4th ed. 1997); Gregory J. Warden, *Market Delineation and the Justice Department's Merger Guidelines*, 1983 DUKE L.J. 514, 530-31.

48. *See* Elhauge, *supra* note 45, at 265-70.

49. The Supreme Court has displayed sensitivity to this fact. *See, e.g.*, Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447, 458-59 (1993).

50. *See* LePage's, Inc. v. 3M, 324 F.3d 141, 169 (3d Cir. 2003) (upholding over a sharp dissent a $68 million jury verdict that 3M violated the antitrust laws by employing volume-based bundled rebates); Conwood Co. v. U.S. Tobacco Co., 290 F.3d 768, 781-82 (6th Cir. 2002); *see also* Joshua D. Wright, *Antitrust Law and Competition for Distribution*, 23 YALE J. ON REG. 169, 205-06 (2006).

51. Clayton Act, 15 U.S.C. § 18 (2006).

fusion. Admittedly, and to their credit, DOJ and the FTC have for the past twenty-five years published, revised, and frequently explained their Merger Guidelines, which were drafted in part to provide the business community with a modicum of clarity about what to expect from agency merger analysis.[52] But the point here is that the guidelines were—and remain—necessary because in large measure the statutory language governing mergers is so vague as to be inadequate, and thus it creates yet another potential source of error.

The vagueness of the antitrust statutes might not matter so much if courts and agencies could call upon an analytical methodology that would eliminate or significantly reduce the possibility of error inherent in the statutory text. But no such methodology exists. Indeed, in many ways the "rule of reason," briefly described above, compounds the problem of error. The Supreme Court requires a court that engages in complete rule-of-reason analysis to inquire into the

> facts peculiar to the business to which the restraint is applied; its condition before and after the restraint was imposed; the nature of the restraint and its effect, actual or probable. The history of the restraint, the evil believed to exist, the reason for adopting the particular remedy, the purpose or end sought to be attained, are all relevant facts.[53]

Notably, rule-of-reason analysis provides the dominant mode for assessing claims under all three of the statutes discussed above. Most Section 1 cases receive full rule-of-reason treatment.[54] Many Section 2 cases—those involving behavior not covered by a conduct-specific test—are also analyzed by the full-blown rule of reason.[55] And all contested mergers are subject to a version of it as well.[56]

52. *See* Hillary Greene, *Guideline Institutionalization: The Role of Merger Guidelines in Antitrust Discourse*, 48 WM. & MARY L. REV. 771, 775-77 (2006) (exploring the evolution of the Merger Guidelines).

53. *See* Chicago Bd. of Trade v. United States, 246 U.S. 231, 238 (1918).

54. Piraino, *supra* note 28, at 1760.

55. *See* Mark S. Popofsky, *Section 2, Safe Harbors, and the Rule of Reason*, 15 GEO. MASON L. REV. 1265, 1270 (2008).

56. *See* U.S. DEP'T OF JUSTICE & FTC, *supra* note 30, at 3.

To see the difficulties inherent in the model, and why they provoke concerns about error, imagine a relatively simple Section 2 private claim that survives a motion to dismiss, withstands a motion for summary judgment, and goes through trial. And envision as well that the claim charges a presumed monopolist[57] with having entered into a five-year exclusive dealing arrangement with a particularly efficient distributor—Walmart, let's say—which accounts for 30 percent of all sales in the relevant market. The plaintiff offers evidence that the exclusive contract has foreclosed its access to Walmart's shelves, which it claims will hurt not just the plaintiff but consumers as well.

This claim poses several difficulties for the trier of fact. In the first place, the nature of the proof is likely to be that, even if the monopolist has realized cost savings or other quantifiable benefits from its contract with Walmart in the short term and passed them on to consumers, in the long run its strategy will erode its rival's scale economies, or prevent them from materializing. In that fashion, the plaintiff would argue, the monopolist will force the rival to exit the market. Then, the monopolist will reduce output and raise prices to consumers in the unspecified future—some time after the exit occurs, assuming that entry barriers effectively deter new rivals from competing with the dominant firm, and that nothing else material has happened to change the product mix or consumer tastes. Short-term consumer benefit—definite and measurable—must be weighed against a complex scenario that might, but might not, produce harm of some undetermined amount at some unknowable time in the future. Because of the intertemporal nature of the claim—benefits now, perhaps bigger harms later—this "calculation" can be no more than a guess, and guesses are often erroneous.

Intertemporal effects arise in a whole host of antitrust scenarios. All vertical restraints, including tying arrangements and bundled discounts, produce consumer benefits now, and the potential for consumer harm later. Predatory pricing produces consumer benefits in the first phase but potential harm in the last phase. Every refusal by a dominant firm to license its valuable intellectual property (IP) to smaller rivals, to share with them a supposedly "essential" facility, or to cooperate with them so as to enable them

57. We will extend the simplicity to avoid a dispute about the status component of the offense.

to become or remain competitively "viable," will inevitably produce harm in the first phase but is also likely to generate benefits—in the form of safeguarded incentives to invent and invest in the future—in later ones. So, too, with mergers: increased concentration now might threaten higher prices in the short run, but might generate enough synergies or efficiencies to drive prices down or improve quality over time.

But intertemporal effects resist measurement. When those effects arise in an antitrust dispute, the trier of fact may well be able to assess the effects that have already occurred, but it can do no more than speculate about the relevant future consequences. The information gap is unbridgeable. In every case requiring an intertemporal comparison, and there are many such cases, one of the points of comparison will be both unknown and unknowable. Each one of these cases, therefore, is fertile ground for error.

Of course, if antitrust analysis could somehow structure itself so as to avoid "measuring" the future, the likelihood of judicial or regulatory error would be greatly reduced. Indeed, if it could stick to assessing the measurable past, that analysis would be a much simpler exercise. Simpler, but hopelessly incomplete.[58] In antitrust thinking, static, backward-looking analysis is disfavored, and for good reason. It has been supplanted by a dynamic approach that looks to the future effects of current behaviors and tries to imagine the full range of market responses to the business conduct at issue—not simply those of consumers but also those of rivals, fringe firms, new entrants, and investors.[59] This dynamic approach is so widely accepted and performed that one cannot realistically contemplate an antitrust methodology divorced from concerns about future competitive effects.[60] But dynamic analysis and error inevitably go hand in hand.

While errors caused by the problems of intertemporal measurement are the most intractable, they are hardly the only kind of error to arise regularly under rule-of-reason analysis. Imagine the earlier exclusive-dealing example but remove the intertemporal quality of

58. *See, e.g.*, Thomas O. Barnett, *Maximizing Welfare Through Technological Innovation*, 15 GEO. MASON L. REV. 1191, 1199 (2008).

59. *See* Richard J. Gilbert & Steven C. Sunshine, *Incorporating Dynamic Efficiency Concerns in Merger Analysis: The Use of Innovation Markets*, 63 ANTITRUST L.J. 569, 569-70 (1995).

60. *See* Scherer, *supra* note 15, at 998, 1001-02.

the supposed consequences. Picture instead that once again the conduct in question produced both harms and benefits—harms to consumers in product market A but benefits to consumers in product market B. And imagine as well that all of the harms and benefits have already and fully occurred, and that each side provides an expert economist to testify as to their magnitude. The decision for the trier of fact thus involves "simply" an intermarket comparison of harms and benefits. Suppose now that the plaintiff's economist testifies that the harms in market A over the relevant five-year time period amounted to $12,000,000.00, while the defendant's economist testifies that the benefits in market B came to $12,000,000.50. On this calculus, which represents the rule of reason fully deployed, the jury would have to find for the defendant. But who could feel confident that such a finding might not be erroneous?

We have assumed thus far that the triers of fact—the district court judges and juries—are not themselves a source of error, though they face daunting and irresolvable measurement problems that would baffle the brightest among us. But if the brightest of us can only guess about the competitive effects of conduct with intertemporal consequences or multimarket repercussions, the average person in the jury box and the average federal trial judge can do no better—and might occasionally do worse.[61] And who would fault them for doing so? Antitrust trials are lengthy, complicated affairs with massive amounts of evidence, which require jurors to make sense of novel business behavior and its implications for consumers, and in the process, sort out the conflicting testimony of well-credentialed economic experts.[62]

Over the last twenty-five years, the Supreme Court seems implicitly, and sometimes expressly, to have recognized the enormous

61. *See* Michael R. Baye & Joshua D. Wright, Is Antitrust Too Complicated for Generalist Judges? The Impact of Economic Complexity & Judicial Training on Appeals 1-2 (Jan. 27, 2009) (unpublished manuscript, *available at* http://ssrn.com/abstract=1319888).

62. *See* Robert W. Meserve, *Jury Instructions in Criminal Antitrust Cases: A Compilation of Instructions Given by United States District Courts, 1923-1964*, 79 HARV. L. REV. 870, 872 (1966) (book review); *see also* Leegin Creative Leather Prods., Inc. v. PSKS, Inc., 551 U.S. 877, 917 (2007) (Breyer, J., dissenting) ("The Court's invitation to consider the existence of 'market power,' for example, invites lengthy time-consuming argument among competing experts, as they seek to apply abstract, highly technical, criteria to often ill-defined markets." (citation omitted)); Spencer Weber Waller, *Prosecution by Regulation: The Changing Nature of Antitrust Enforcement*, 77 OR. L. REV. 1383, 1421 (1998).

difficulties and risks of entrusting complicated antitrust claims to lay juries. *Matsushita Electric Industrial Co. v. Zenith Radio Corp.* made it more difficult for antitrust plaintiffs to survive a motion for summary judgment, reversing the judicial bias against such motions created in *Poller v. CBS*,[63] and required plaintiffs to show that their claim makes "economic sense."[64] Higher barriers for plaintiffs facing summary judgment motions are very likely to reduce the number of cases that reach trial, and thus likely to reduce the possibility of trial error.[65] More recently, *Bell Atlantic Corp. v. Twombly* announced new and more rigorous pleading requirements for antitrust plaintiffs—requirements deemed necessary to protect defendants and courts from the significant costs of discovery—in cases in which the complaint fails to allege facts that plausibly suggest an antitrust violation.[66] It too can be seen in part as a response to (1) the uncertainty attendant upon trial outcomes in antitrust cases, and (2) the concerns that the high costs of discovery and fears of large and erroneous jury verdicts can induce defendants to pay relatively large amounts to settle nonmeritorious suits.

Finally, this discussion has thus far assumed that the language of economics and its use in court make no independent contribution to antitrust error. But that assumption is heroic. Most antitrust cases hinge on market "definition," a term that is at once fundamental to antitrust analysis and terribly imprecise.[67] If the "market" is improperly defined in an antitrust case—and market definition is hotly contested in most cases of consequence[68]—then the outcome of that case will almost certainly be incorrect. Many cases arising under Section 2—all those dealing with price-to-cost ratios—focus on the defendant's "costs," another term that is simultaneously fundamental and imprecise. As many have noted, "cost" is an accounting term, not necessarily an economics one.[69] It is a moving

63. 368 U.S. 464, 467 (1962) (holding that summary judgment should be used sparingly in antitrust cases).

64. 475 U.S. 574, 587 (1986).

65. Though, of course, *Matsushita* opens the door to greater incidences of error at the summary judgment stage.

66. 550 U.S. 544, 548-49 (2007).

67. *See* Robert Pitofsky, *Antitrust in the Next 100 Years*, 75 CAL. L. REV. 817, 825 (1987).

68. *See, e.g.*, FTC v. Whole Foods Mkt., Inc., 548 F.3d 1028, 1036-41 (D.C. Cir. 2008); United States v. Microsoft, 253 F.3d 34, 51-56, 80-82 (D.C. Cir. 2001); United States v. Oracle Corp., 331 F. Supp. 2d 1098, 1107-09 (N.D. Cal. 2004).

69. *See* Eleanor M. Fox, *The Politics of Law and Economics in Judicial Decision Making:*

target, flexible and manipulable. And, as is widely known, in the case of multiproduct firms, allocating common costs among different products is more a matter of art than of science.[70] None of this is to suggest that antitrust analysis should abandon its focus on markets, or ignore testimony about costs. But it is to say that the fluidity and imprecision of these basic terms create additional possibilities for erroneous judgments.

For these reasons, antitrust law is uniquely vulnerable to error. It ignores this vulnerability at its peril. The inability to reach determinate and objectively verifiable conclusions does not relieve the law or its enforcers from the responsibility for articulating the best answers possible. Part I.C explores how judges, regulators, practitioners, and academics have approached the systemic problems of error and indeterminism in antitrust cases. Part II then seeks to make an informed contribution to the role of error analysis in competition law.

C. Questioning Contemporary Error Analysis

1. Basic Error Analysis

Antitrust's particular vulnerability to mistaken ascriptions of harm compels responsible enforcers to proceed with caution. Aside from this broad mandate though, what specific tenets of theory can guide policymakers? The answer lies partly in the branch of microeconomics concerned with optimal choice in the presence of uncertainty.[71] But how should this methodology, known as decision theory, be employed?[72]

Professor Hylton provides a simple example of how decision theory can inform error analysis in competition law.[73] He posits a

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Antitrust as a Window, 61 N.Y.U. L. REV. 554, 584 (1986).

70. *See* Janusz A. Ordover & Robert D. Willig, *An Economic Definition of Predation: Pricing and Product Innovation*, 91 YALE L.J. 8, 21 n.42 (1981).

71. *See generally* C. Frederick Beckner III & Steven C. Salop, *Decision Theory and Antitrust*, 67 ANTITRUST L.J. 41, 41-43 (1999) (application of decision-making process in antitrust cases).

72. For a general discussion on the role of decision theory in law, see ADRIAN VERMEULE, JUDGING UNDER UNCERTAINTY: AN INSTITUTIONAL THEORY OF LEGAL INTERPRETATION 171-72 (2006).

73. *See* Keith N. Hylton, *The Error Cost Approach to Section 2 Legal Standards*, GLOBAL COMPETITION POL'Y (2009). However, as we explain below, Professor Hylton misstates the

scenario in which lawmakers must choose one of two antitrust standards. The first carries a 25 percent likelihood of a false acquittal and a 20 percent probability of a false conviction; the second has a 20 percent chance of a false acquittal and a 25 percent likelihood of a false conviction. To ground this example in actual doctrine, imagine that the standards state two different tests for illegal monopolization. One might be the "no economic sense test,"[74] while the other could be "the equally efficient competitor test."[75] If the cost of a Type I error is 0.25 and the cost of a Type II mistake is 0.20, then the expected error cost of the first standard is 0.65 and the second is 0.70. The second standard is therefore preferable.[76]

This example provides a useful starting point, though it can be criticized for conflating analysis under conditions of probability with analysis under conditions of uncertainty.[77] In the latter setting, neither the probability nor the magnitude of all relevant effects can be quantified with any expectation of accuracy.[78] When probabilities are known, all outcomes can be calculated and the optimal rule can be identified and objectively verified.[79] Unfortunately, the probable occurrence and economic impact of much of the conduct involved in antitrust disputes are not subject to such quantification. Policymakers are therefore bereft of the relevant information. Unable to judge the probability of Type I or Type II errors, as well as their respective costs, how are judges, enforcement officials, and academics to articulate optimal standards?

Although there could be a variety of conceivable answers, Judge Easterbrook's view has been the most influential in the last two decades.[80] He first suggests that the social costs of false condemnations in antitrust law are apt to be severe.[81] The erroneous rejection of a consumer-welfare-enhancing practice eliminates the benefit

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specificity with which such analysis can be conducted.

74. *See* Gregory J. Werden, *Identifying Exclusionary Conduct Under Section 2: The "No Economic Sense" Test*, 73 ANTITRUST L.J. 413, 413 (2006).

75. *See* Ronald W. Davis, *The Antitrust Division's Report on Section 2: Firm Foundation for Enforcement or a Bridge to Nowhere?*, 23 ANTITRUST 42, 43, 49-50 n.15 (2008).

76. *See* Hylton, *supra* note 73.

77. *See* RICHARD A. POSNER, A FAILURE OF CAPITALISM: THE CRISIS OF '08 AND THE DESCENT INTO DEPRESSION 60 (2009).

78. *See id.*

79. *See id.*

80. *See* Easterbrook, *supra* note 10, at 1-4.

81. *Id.* at 2.

of that conduct for as long as the prohibitive rule persists.[82] As he puts it, "mistakes of law are not subject to competitive pressures."[83] Simultaneously, the erroneous ruling will foreclose beneficial conduct by others who would have employed the same or a closely similar practice but now fear that their procompetitive behavior will be mistakenly condemned as anticompetitive.[84] Second, he posits that, because most forms of collaborative behavior are efficient, a judge who refuses to condemn challenged conduct of that kind is more likely to be right than wrong.[85] Third, he argues that the social cost of a monopoly that is mistakenly allowed to persist is likely to be less than the loss flowing from the improper condemnation of efficient conduct.[86]

This view has proven persuasive to courts and many commentators in the United States, and has led to the adoption of a strong anti-Type I error rule. But it would be a mistake to think that the problems of incorporating error into antitrust analysis require—or are amenable to—a single, objectively verifiable result. David Lewis, the former head of the South African Competition Tribunal, has representatively argued that the U.S. view on error is inapplicable to the antitrust regime in his country.[87] His experience suggests that the basic premises behind the U.S. rule, namely that monopolies are short-lived and markets are self-correcting, do not reflect the historical performance of dominant firms and monopolized

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82. *See* Frank H. Easterbrook, *Comparative Advantage and Antitrust Law*, 75 CAL. L. REV. 983, 986 (1987).

83. *Id.* (emphasis omitted).

84. Easterbrook, *supra* note 10, at 2.

85. *Id.* at 10. This point can be, and has been, extended to cases that involve unilateral behavior as well.

86. *See* Easterbrook, *supra* note 10, at 2-3. Not all scholars accept Judge Easterbrook's position, however. Professor Williamson is the leading advocate of the opposing view, which seeks to encapsulate all available information about each specific case before reaching a conclusion. *See* Oliver Williamson, *Delimiting Antitrust*, 76 GEO. L.J. 271, 280 (1987). He characterizes this analysis as a "legal process" approach, believing it to be superior to the agnostic standard advocated by Judge Easterbrook. *Id.* at 271. A third approach has been championed by Professors Salop and Romaine, who argue that expected error costs should be explicitly addressed by the litigating parties and the court. *See* Steven C. Salop & Craig R. Romaine, *Preserving Monopoly: Economic Analysis, Legal Standards, and Microsoft*, 7 GEO. MASON L. REV. 617, 671 (1999). The result of that analysis would then be incorporated into the applicable liability standard. This view led them to articulate the influential "unnecessarily restrictive conduct" test. *Id.* at 659.

87. *See* David Lewis, Chairperson, S. Afr. Competition Trib., Speech: Chilling Competition 2-4, *available at* http://www.icn-capetown.org.za/Publications/Speeches/lewis13.pdf.

markets in South Africa.[88] Europe has clearly eschewed the cautious approach to intervention championed by the United States.[89] These examples suggest that error rules, like views about dominance and markets, are contingent and reflect national and regional experience and belief as much as, if not more than, they reflect economics.

Notwithstanding international divergence, it remains true that Judge Easterbrook's policy views on error have been enormously influential within the United States. In doubtful cases, the law tends to err on the side of the defendant, permitting the challenged conduct and trusting the market to work out any errors over time.[90] In general, this translates into a relatively noninterventionist antitrust policy that is skeptical of claims of anticompetitive effect. We question whether this particular form of error analysis is appropriate across the board. We believe that a one-size-fits-all bias away from Type I errors is flawed.

2. Debunking Current Error Analysis

The current U.S. approach to error suffers from a number of systemic, though unappreciated, flaws. First, the preference for avoiding Type I errors rests in part on the premise that those errors are (a) more costly, and (b) irreversible. These premises may be mistaken, however, because neither has been subject to empirical testing. And they are certainly contestable. In the first place, even if any single Type I error is always more costly than a single Type II error, what matters is the total social cost of all errors, not the

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88. *Id.* at 3-4.

89. Recent cases in Europe make this clear. *See, e.g.*, Case T-201/04, Microsoft v. Comm'n 2004 E.C.R. II-4463; Eric S. Hochstadt, Note, *The* Brown Shoe *of European Union Competition Law*, 24 CARDOZO L. REV. 287, 316-27 (2002); Matthew Newman, *Intel Fined $1.45 Billion in EU Antitrust Case*, BLOOMBERG NEWS, May 13, 2009, http://www.bloomberg.com/apps/news?pid=20601110&sid=a22oQQl0woQI.

90. This is particularly so in the context of dominant-firm behavior. *See, e.g.*, Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, 540 U.S. 398, 408, 414 (2004) ("We have been very cautious in recognizing ... exceptions [to the right to refuse to deal].... Against the slight benefits of antitrust intervention here, we must weigh a realistic assessment of its costs. Under the best of circumstances, applying the requirements of § 2 'can be difficult' .... Mistaken inferences and the resulting false condemnations 'are especially costly, because they chill the very conduct the antitrust laws are designed to protect....' The cost of false positives counsels against an undue expansion of § 2 liability." (internal citations omitted)); *see also* Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 594 (1986); Ball Mem'l Hosp., Inc. v. Mutual Hosp. Ins., Inc., 784 F.2d 1325, 1333-34 (7th Cir. 1986).

cost of any individual error or the relative costs of any two. If, for every Type I error that courts commit, they make one and only one Type II error, then Type I errors are obviously more costly to society. If, however, for each Type I error, courts make ten of the Type II variety, then the social calculus would certainly differ and might differ by enough to counsel in favor of avoiding Type II errors.[91]

Second, the current default bias assumes that a Type I error causes society to lose *all* the value of the competitive behavior wrongly condemned. But this assumption cannot be true very often, if ever. In the first place, firms foreclosed by judicial error from adopting the very best behavior will adopt the next-best behavior, or may even discover a superior one. The loss to society is the difference in value between the best and the second-best—a difference that can be very small or even positive. Further, it is quite possible that the competitive behavior wrongly condemned will not always be the optimal form of conduct—perhaps that best behavior will not have been previously challenged, identified, or contemplated, and will thus remain available. In those cases, erroneous rulings might push firms from the second-best form of conduct to the best and thus serve to create social gains. Finally, a firm's chosen course of action may not align with the social optimum. For instance, a contemplated merger might promote consumer welfare but be erroneously condemned. Yet vigorous competition amongst incumbent firms to increase share and scale may yield the same efficient economies while providing an extra benefit in the form of price wars, innovation, service competition, and output enhancement.

Third, the present heuristic mistakenly assumes that the harmful effects of Type I errors are apt to be perpetual, as legal rules have long lives and are not subject to erosion by competitive market pressures. It is clear, however, that mistaken legal rules are not irreversible. Stare decisis exerts a relatively weak gravitational pull in the antitrust realm, in part because the Sherman Act is a classic common law statute that leaves it to the judiciary to define optimal

91. In simple mathematical terms, the total social cost of error type equals x multiplied by the total error cost, where x represents the number of times the particular kind of error occurs during the relevant period.

competition policy.[92] Bad precedents—and there have been many[93]—have been reversed left and right.[94] Yes, it has taken many years for reversal to occur in some instances. But there are ways to avoid bad precedent without directly overruling it. The per se rule against product tying—a phenomenon generally regarded by economists as more likely to be efficient than not—has never been overruled, but it has been significantly truncated by requiring a plaintiff to demonstrate that the defendant has monopoly power in the tying market.[95] The rule in *Dr. Miles* that barred resale price maintenance was swiftly circumvented by a series of cases that established a de facto right to engage in such behavior.[96]

Current error analysis oversteps on a fourth basis. The contemporary, pro-defendant bias assumes that markets are always better at correcting Type II errors than courts are at correcting Type I errors. Maybe this is true some of the time, but it does not seem to be true all of the time. Suppose, for example, that the D.C. Court of Appeals had mistakenly allowed Microsoft to disadvantage Netscape and Java.[97] No "nascent" threat to Microsoft's operating system could have gotten off the ground. Yet even now, years into the "post-corrective" period, there is still no effective challenger.[98] Carl Shapiro has written that remedies in this regard—in this case—have proven woefully inadequate because they appear unable to

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92. *See* Leegin Creative Leather Prods. v. PSKS, Inc., 551 U.S. 877, 899 (2007).

93. *See, e.g.*, Albrecht v. Herald Co., 390 U.S. 145, 151-53 (1968) (prohibiting maximum resale price maintenance), *overruled by* State Oil v. Khan, 522 U.S. 3 (1997); United States v. Von's Grocery, 384 U.S. 270, 272-74, 277-78 (1966) (prohibiting a merger that would have resulted in a mere 7.6 percent market share because there was then a trend toward concentration in the market); Dr. Miles Med. Co. v. John D. Park & Sons, 220 U.S. 373, 404-09 (1911) (finding minimum resale price maintenance illegal), *overruled by Leegin*, 551 U.S. at 907.

94. *See Leegin*, 551 U.S. at 907 (overruling *Dr. Miles*); State Oil v. Khan, 522 U.S. 3, 18-19, 22 (1997) (overruling *Albrecht*); U.S. DEP'T OF JUSTICE & FTC, *supra* note 30, at 1-3 (articulating the modern view on merger analysis, which rejects the incipiency doctrine as best represented in *Von's Grocery*).

95. *See* Carl Sandburg Vill. Condo. Ass'n No. 1 v. First Condo. Dev. Co., 758 F.2d 203, 210 (7th Cir. 1985).

96. *See* Bus. Elecs. Corp. v. Sharp Elecs. Corp., 485 U.S. 717, 724-27, 731 (1988); Monsanto Co. v. Spray-Rite Serv. Corp., 465 U.S. 752, 761, 763-64 (1984); United States v. Colgate & Co., 250 U.S. 300, 307 (1919) (allowing a manufacturer to cease selling to a dealer, thus rendering *Dr. Miles* almost unenforceable).

97. In fact, the agencies permitted that to happen for a relatively long time.

98. Google's new operating system Chrome has recently entered the market, however.

restore the competition lost by virtue of Microsoft's misconduct.[99] If the market plus remedies could not wash out the competitive harm caused by Microsoft, how can the market do it unaided in all other cases?

These objections—the ones we have just stated—have not been coherently set forth in the "error" discussion to date. Nor are the most recent events that implicate error analysis comforting. As this Part has explained, many antitrust disputes require courts or agencies to analyze behavior whose consequences are uncertain and thus immeasurable. Error is very much at the heart of modern competition law, whether one wishes to acknowledge it or not. We now seek to locate our criticisms in context of recent events. In particular, we consider the recent debacle involving the Justice Department's release and swift retraction of a report that focused on the problem of error.[100]

3. The Section 2 Report Debacle

In an important sense, the Justice Department's September 2008 report on Section 2 enforcement was animated by the problem of error.[101] The agency conducted an in-depth analysis of the legal principles that govern unilateral conduct by dominant firms. The report explored the potential for error inherent in applying that body of law and recommended the adoption of a "disproportionality" test that would reduce that potential.[102] It concluded that only where "anticompetitive effects are shown to be substantially disproportionate to any associated procompetitive effects" would antitrust enforcement be appropriate.[103] In other words, close cases —where Type I errors are more likely—would be resolved in favor of defendants. Although this report was very controversial, drawing scathing criticism from the FTC for its pro-defendant bias,[104] it was an earnest effort to approach the problem of error with rigor.

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99. *See* Carl Shapiro, *Microsoft: A Remedial Failure*, 75 ANTITRUST L.J. 739, 740-41 (2009).

100. *See* U.S. DEP'T OF JUSTICE, *supra* note 1; Press Release, U.S. Dep't of Justice, *supra* note 6.

101. *See* U.S. DEP'T OF JUSTICE, *supra* note 1.

102. *Id.* at 45-46.

103. *Id.* at ix.

104. *See* Press Release, FTC, *supra* note 5.

The report no longer exists. The new Justice Department wasted little time in revoking the document, claiming that it would have served to radically reduce antitrust oversight.[105] In particular, Ms. Varney rejected the disproportionality standard, believing the proper question simply to be whether the anticompetitive effects of a practice outweigh its procompetitive consequences.[106]

Of course, Ms. Varney's view is technically correct. But in practice, she is attempting the impossible. Under the rule of reason, one must identify and weigh the various effects, actual and anticipated, of a practice and define the legality of the conduct depending on the outcome of that process.[107] The inquiry's accuracy depends on correctly quantifying all the relevant consequences of the challenged practice. Ms. Varney's approach assumes away the recurring and fundamental problem of quantifying effects that have not yet occurred or that are otherwise impossible to measure. Her misunderstanding is confirmed by her assertion that, unlike her predecessors, she and her staff can "separate the wheat from the chaff."[108] Those comments suggest that, on her watch, there will be no erroneous determinations in enforcement decisions and that, hence, there is no need for error rules. But Ms. Varney's contention is unsupportable. The problem of error is systemic and fundamental. It will not go away, because it cannot. An antitrust policy built on an imaginary, error-free world would be self-destructive.

We can do better than pretend that mistaken judgments can be avoided. An intelligent approach to the problem of error might well start with a skeptical view of rivals' complaints. But a pro-defendant bias need not evolve into an aversion to Type I errors in all cases. The theoretical justifications for preferring Type II errors are grounded in assumptions that do not always hold true. In certain types of cases, the likely social costs of false negatives may exceed the cost of false positives, particularly when adjusted for probability. In others, courts should display greater sensitivity to the factors that justify an aversion to Type I errors, especially in cases initiated

105. *See* Press Release, U.S. Dep't of Justice, *supra* note 6.

106. *See* Varney, *supra* note 13, at 8-9.

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

108. Varney, *supra* note 13, at 6.

by private plaintiffs, in which the threat of false negatives looms large.[109] Part II attempts to derive more nuanced error rules.

II. REVISITING ERROR ANALYSIS IN U.S. ANTITRUST LAW

A. Rules and Standards

We begin with a preliminary observation: for the past three decades, U.S. antitrust law has been jettisoning rules in favor of standards.[110] How does this phenomenon implicate the law's vulnerability to mistaken aspersions of guilt or innocence?

The answer is counterintuitive. One focused on the importance of error in antitrust analysis might applaud this contraction in the use of rules. After all, will not all-encompassing assessments of different practices minimize the incidence of error? And would not inflexible, bright-line rules yield an unacceptable propensity for mistaken determinations of liability? The more it scrutinizes the challenged conduct, the more likely the court or agency is to reach the correct result. In short, full-blown rule-of-reason analysis must be preferable to categorical presumptions, which are in turn supe-

109. It should be noted that thus far we have not talked of what actually constitutes an anticompetitive effect. This seemingly prosaic issue in fact masks a Pandora's box of intricate questions, unsettled law, and indeterminate analysis. Some illustrative challenges include: Do prolonged price increases constitute antitrust harm, absent a showing of a restriction in output? Over what time frame should price and output effects be considered for the purpose of declaring them anticompetitive? Can negative repercussions today be offset by potential gains tomorrow, thus rendering an otherwise anticompetitive practice innocuous? Can factors other than price effects constitute objectionable outcomes, against which antitrust can and should be employed? Can increasing concentration ever result in anticompetitive outcomes? These questions represent but a fraction of the issues underlying the question of antitrust harm. But the issue is fundamental, for unless antitrust adheres to an identifiable lodestar, it is impossible to define false positives and negatives. *See generally* Hon. Richard D. Cudahy & Alan Devlin, *Anticompetitive Effect*, 95 MINN. L. REV. (forthcoming 2010), *available at* http://ssrn.com/abstract=1573634 (discussing and attempting to clarify anticompetitive effect).

110. For instance, prohibitions on resale price maintenance, product tying, below-cost pricing, and price squeezes have all been abandoned. *See supra* note 92-94. Even the wisdom of the quintessential rule of per se illegality, the absolute prohibition against horizontal price-fixing, is now being questioned in some settings. *See* Randal C. Picker, *Take Two: Stare Decisis in Antitrust—The Per Se Rule Against Horizontal Price-Fixing* 14-16 (Univ. of Chi. Law Sch. John M. Olin Law & Econ. Working Paper 2d Series, Working Paper No. 398, 2008), *available at* http://ssrn.com/abstract=1113513.

rior to per se condemnation. Thus, the Supreme Court's retraction of rules should be applauded.[111]

Yet, it is not so simple. While we conclude that rule-of-reason analysis is more appropriate in certain instances—namely those where the risk of error is slight—the greater the uncertainty associated with the challenged behavior, the greater the case for an appropriately biased rule or presumption. There is little to gain and much to lose in asking a court to engage in an exhaustive market-specific analysis of conduct with indeterminate long-run effects.[112] The rule of reason, as applied to such behavior, often involves intertemporal comparisons and necessarily relies on calculations that are inherently imprecise. In such circumstances, mistakes are inevitable. If one deems a practice to possess a far higher proclivity for procompetitive than for anticompetitive effects, then stringent judicial review is normatively desirable only if it carries a very low likelihood of error. Put differently, standards work best when the larger inquiry that they allow can turn up decisive information—at reasonable cost. But when intertemporal comparisons are involved, especially those involving the long term, decisive information is never available, at any cost, and thus the larger inquiry will necessarily be both very expensive and utterly futile.

Nor do we advocate the reintroduction of per se rules, however. Rather, appropriately constructed presumptions should generally direct antitrust analysis. We find that the likelihood, magnitude, and presence of error are far from homogeneous across case types and business behaviors. Different forms of conduct are likely to give rise to distinct risks of error, even if those risks cannot be precisely quantified. As a result, there is good reason for antitrust law to develop unique standards or rules for each.[113] Part II.B attempts to

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111. It bears noting, however, that although the Court has indeed jettisoned a variety of pro-plaintiff rules in favor of standards, it has simultaneously espoused a limited number of pro-defendant rules. In particular, the Court has clarified that a firm has a highly limited duty to deal with its rivals. *See* Pac. Bell Tel. Co. v. LinkLine Commc'ns Inc., 129 S. Ct. 1109, 1119 (2009); Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, 540 U.S. 398, 408-09 (2004).

112. *See, e.g.*, Fred S. McChesney, *Talking 'Bout My Antitrust Generation*, REGULATION, Fall 2004, at 51.

113. It is impossible to articulate a general standard that can reliably guide the courts and agencies in their assessment of all forms of commercial behavior. Any attempt to devise a universal standard is bound to result in failure. This is due to the infinite complexity and variety of economic factors at play in all cases. The only logically consistent rule that has ever

demarcate the appropriate error analysis that should be applied to the small number of business practices most likely to generate error.[114]

B. Constructing Behavior-Specific Error Rules

We illustrate our error analysis by briefly exploring a variety of controversial business practices—controversial because their competitive effects are much debated.[115] We analyze the likely incidence of Type I and II errors under each heading, and the cost of such errors if they do arise. Through this analysis, we consider whether the law's current one-size-fits-all treatment is appropriate. We find that the contemporary focus on avoiding Type I errors, though often justified, should not enjoy ubiquitous application. Cases exist in which the prospect of a significant benefit is so attenuated, and the magnitude of that gain so trivial vis-à-vis the expected harm, that the direction of the current default presumption should be revisited. Nevertheless, we find that the default error rule of favoring false negatives over false positives provides prudent guidance for much

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been advocated involves eliminating antitrust enforcement altogether. *See* Milton Friedman, *The Business Community's Suicidal Impulse*, 21 CATO POL'Y REP. 6, 7 (1999). But garden-variety standards are apt to be of limited use in this context as well. No one has ever been able to craft a broad standard that provides even remotely useful or reliable means for conducting analysis of unilateral behavior. Monopolization standards have been aptly characterized as contradictory, intellectually vacuous, and circular. *See* Elhauge, *supra* note 45, at 255. For a more in-depth analysis by one of the authors, see Alan Devlin, *Analyzing Monopoly Power Ex Ante*, 5 N.Y.U. J.L. & BUS. 153, 163-71 (2009).

114. If one wishes to adopt a broad guide to judging monopolization claims, the only useful metric is to embrace a categorical presumption of legality. This is what the Justice Department did in its 2008 Report, though we believe that the presumption it championed —namely, no enforcement proceeding unless "anticompetitive effects are shown to be substantially disproportionate to any associated procompetitive effects"—sets the bar too high for agency enforcement. *See* U.S. DEP'T OF JUSTICE, *supra* note 1, at ix. As explored below, the probability of some business practices bearing negative effects is greater than others. Accordingly, a near-preclusive presumption, broadly applied, may find incongruous and inappropriate application with respect to certain forms of conduct. We believe the best road forward is to devise conduct-specific error rules and standards, rather than to attempt the Sisyphean task of constructing a useful "macro" standard that will provide meaningful guidance across all, or even most, forms of commercial conduct. Part II.B indicates how representative forms of commercial behavior should be analyzed.

115. We do not seek to treat these forms of conduct in exhaustive detail, for each could demand a full article in itself.

conduct, especially that which concerns the unilateral behavior of dominant firms.

1. Merger Analysis

Amongst the diverse practices discussed in this Article, merger policy may be one of the most vulnerable to error. In all other cases, courts are required to cast judgment upon various forms of past conduct. Price-fixing, refusals to deal, product tying, vertical restraints, predatory pricing, reverse payments, and other forms of potentially objectionable behavior are assessed under the antitrust laws after their occurrence. Although some mergers are challenged post-consummation,[116] most are subjected to forward-looking analysis that attempts to predict the impact of the relevant acquisition on future competition.[117] This feature of merger review is one of design, not accident. Section 7 of the Clayton Act is meant to arrest anticompetitive acquisitions in their incipiency, before they mature into full-fledged restraints of trade.[118] Given the daunting epistemological limitations encountered by judges and juries attempting to weigh the past, present, and future effects of *prior* conduct, one need hardly strain to understand why *prospective* merger analysis is even more problematic. The propensity of such analysis to result in erroneous determinations is axiomatic.

Most mergers of note are subject to mandatory pre-merger filing requirements established by the Hart-Scott-Rodino Act and enforced by the agencies.[119] In assessing whether a proposed acquisition may result in a substantial lessening of competition, the FTC and DOJ look to a variety of factors. These include market definition, the impact of the merger on concentration in the identified market, whether that concentration is likely to facilitate unilateral or coordinated anticompetitive effects, and whether entry into the market in response to presumptive post-merger price increases will be

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116. *See* Scott A. Sher, *Closed But Not Forgotten: Government Review of Consummated Mergers Under Section 7 of the Clayton Act*, 45 SANTA CLARA L. REV. 41, 41 (2004).

117. *See* Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc., 429 U.S. 477, 485 (1977) (noting that Section 7 is "a prophylactic measure, intended 'primarily to arrest apprehended consequences of intercorporate relationships before those relationships could work their evil'" (quoting United States v. E.I. du Pont de Nemours & Co., 353 U.S. 568, 597 (1957))).

118. *See E.I. du Pont*, 353 U.S. at 589.

119. *See* 15 U.S.C. §§ 1311-1314 (2006); 18 U.S.C. § 1505 (2006).

timely, likely, and sufficient to bring prices down to pre-merger levels.[120] In certain instances, efficiencies will be incorporated into the calculus, if they are likely to be passed onto consumers, merger-specific, and sufficiently potent to prevent post-merger price increases.[121] The analysis has become increasingly sophisticated, with the agencies relying on econometric studies of the market and the merging parties' impact upon the market and one another.[122]

Although it would be unfair to deem the merger review process random, there is no denying that the various steps outlined in the agencies' merger guidelines involve probabilistic and inexact calculation.[123] Moreover, some of the terms employed are susceptible to multiple interpretations, and there is typically little direct evidence of how the market would operate in the post-merger world. Despite the undoubted expertise of the FTC and DOJ, the merger review process is rife with potential for error.

Within the context of mergers, a Type I error occurs when an acquisition that would not create a substantial lessening of competition is prohibited. Conversely, a Type II error arises when an anticompetitive merger is approved. The general U.S. bias in favor of the latter would therefore aim to approve proposed acquisitions in cases where enforcers could not ascertain their likely competitive effects with a satisfactory degree of certainty.

Interestingly, merger assessment is one of the few areas of competition policy where the law does not display a significant aversion to Type I errors. Although the government must establish that a merger will violate Section 7, the agencies face a lower threshold of proof than they do with respect to claims of unilateral misconduct by dominant firms. They need not show that a merger will carry a dangerous probability of anticompetitive effect, or that such effect is a near certainty, but must demonstrate only that such effect is likely.[124] It has been emphasized that the Clayton Act "is concerned

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120. *See* U.S. DEP'T OF JUSTICE & FTC, *supra* note 30, at 3, 30-32.

121. *See* Paul L. Yde & Michael G. Vita, *Merger Efficiencies: Reconsidering the "Passing-On" Requirement*, 64 ANTITRUST L.J. 735, 735 (1996).

122. *See* RICHARD A. POSNER, ANTITRUST LAW 157-58 (2d ed. 2001).

123. *See* U.S. DEP'T OF JUSTICE & FTC, HORIZONTAL MERGER GUIDELINES § 9 (2010) (recognizing "that precise and detailed information may be difficult or impossible to obtain").

124. *See* Brown Shoe Co. v. United States, 370 U.S. 294, 323 (1962). The FTC has been held to an even lower evidentiary standard to obtain an injunction and proceed to an administrative hearing on the merits. *See* FTC v. Whole Foods Mkt., Inc., 548 F.3d 1028 (D.C. Cir.

with probabilities, not certainties."[125] And in Section 7 cases, courts generally prohibit merging parties from demonstrating that the supply-side efficiencies generated by their combination will likely outweigh any harm to consumer welfare. So-called "Williamson mergers" are not presently countenanced, absent consumer pass-on.[126] In addition, it falls to the merging parties to present evidence that post-consummation entry will remedy any potential anti-competitive effect.[127] In short, the government does not have to go as far to make its case under Section 7 as it does under Section 2.

To conduct error analysis intelligently, one must weigh the market's likely reaction to false positives and negatives, respectively. The primary concern with Type I errors is that they perpetuate a loss that the market cannot undo. That critical assumption does not hold true in merger clearance. If a Type I error occurs, then by definition the planned combination was efficiency-enhancing or, at the very least, efficiency-neutral. But mergers provide merely one route to achieve optimal scale in a market. Internal growth will generate precisely the same economies, as will certain joint ventures. If a company wishes to merge in order to realize cost efficiencies, but is prohibited from doing so, it will seek to expand market share as a second-best option. The social cost arises from the fact that these benefits will be achieved somewhat later than would have been possible through merger, but the fact remains that the market can self-correct in reaction to Type I errors in this setting.[128] And the process of expanding within a market will generally benefit consumers, as the relevant company increases output and decreases price to expand share. This glaring point of distinction goes some way to justifying a greater proclivity for Type I errors in merger analysis than in other contexts.

But there is a complicating factor. The role of error analysis in merger cases is in some respects unique because erroneous sanction

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2008); *see also* Jessica Fricks, Note, FTC v. Whole Foods Markets*: A New FTC Preliminary Injunction Standard?*, 8 DEPAUL BUS. & COM. L.J., 173 *passim* (2010).

125. *See, e.g.*, Tenneco, Inc. v. FTC, 689 F.2d 346, 362 (2d Cir. 1982).

126. *See* Oliver E. Williamson, *Economies as an Antitrust Defense: The Welfare Tradeoffs*, 58 AM. ECON. REV. 18, 18-20 (1968); Yde & Vita, *supra* note 121, at 735.

127. *See* United States v. Baker Hughes, Inc., 908 F.2d 981, 982-83 (D.C. Cir. 1990).

128. It is notable too that many mergers raising antitrust questions turn out to be inefficient and are undone. *See, e.g.*, Richard Perez-Pena, *Time Warner Plans To Spin Off AOL, Ending Huge Deal That Failed*, N.Y. TIMES, May 28, 2009, at B4.

decisions can be revisited. If agencies commit a Type II error, and allow a merger to go ahead that results in anticompetitive effects, the law permits them to revisit and condemn that merger after it is consummated.[129] As the Supreme Court has made clear, the government has the right to act under Section 7 any time an acquisition threatens to create a prohibited effect.[130] The benefit of such ex post analysis is that the court is free to look at post-merger evidence of the acquisition's actual effect on competition.[131] Unfortunately, the evidentiary capability of such backward-looking analysis is limited in that it is typically of use only to the plaintiff.[132]

If the government can show that merger-specific output restrictions occurred in a setting that was not vulnerable to prompt self-correction through entry, a violation of Section 7 follows.[133] But courts rarely allow defendants to point to an absence of post-consummation anticompetitive effect. This is because potential defendants could simply abstain from increasing price, pending initiation of the government's suit.[134] Only where a defendant would have no control over the relevant effect will such evidence be admitted in its favor.[135] A third party's plans to enter the market post-consummation would be a good example.

Thus, merger analysis may be atypically error-prone, but the costs of error are probably slighter, more avoidable, and more evenly balanced than in most other settings. As Type I and Type II errors in this context can plausibly be seen as relatively slight, and because there is no compelling a priori reason to expect one to be worse than the other, one ought perhaps to revert to Bayesian priors.[136] In this regard, it may be preferable to err on the side of Type I errors, by declining to approve mergers whose competitive effects appear worrisome. If scale or scope efficiencies are indeed at play, incumbent firms will expand market share and achieve a bit later what the prohibited merger would have yielded a bit sooner. Moreover, evidence of such efficiencies may become more apparent

129. And, of course, parties can propose to merge again later as well.
130. *See* United States v. E.I. du Pont de Nemours & Co., 353 U.S. 586, 597 (1957).
131. *See* United States v. Gen. Dynamics Corp., 415 U.S. 486, 506 (1974).
132. *See* Lektro-Vend Corp. v. Vendo Co., 660 F.2d 255, 276 (7th Cir. 1981).
133. *Id.*
134. *Id.*
135. *Id.*
136. *See* RICHARD A. POSNER, HOW JUDGES THINK 67 (2008).

and thus be used to support a second merger review, where the first resulted in a denial for want of proof of efficiencies.

This approach may be thought of as superior to erring on the side of Type II errors and challenging wrongfully approved mergers after the fact. This is because an earlier sanction decision grants the parties a shaky foundation upon which to conduct investment, as they know that the agencies may come knocking on the door years later if they decide they dislike the earlier merger. Ultimately ex post attacks on consummated mergers, in addition to disturbing the expectations of the merging parties, may impose painful social costs. These include undoing efficiencies and the administrative cost inherent in restructuring merged entities.

For these reasons, error analysis—despite not yielding determinative answers—suggests an unusual openness to false positives. As Part I explored, the market is not always incapable of correcting Type I errors, nor are such errors necessarily greater than false negatives when aggregated. Merger policy provides a good example of why these oft-unappreciated considerations are important.

2. "Pay-for-Delay" Agreements

In recent years, there has been a wave of controversial agreements in the pharmaceutical industry. Incumbent brand-name drug manufacturers have been paying generic-producing rivals to stay out of their markets, pending expiration of their patents.[137] With the exception of the Sixth Circuit,[138] the courts have thus far found these arrangements to be generally legal, believing that they fall within the term of the exclusionary grant conferred by the patent.[139] But the FTC has long condemned the practice—called "reverse payments"—in forceful terms, alleging that it is plainly anticompetitive and results in massive wealth transfers from consumers to pioneer drug producers.[140] In a rare instance of interagency

137. *See, e.g.*, C. Scott Hemphill, *Paying for Delay: Pharmaceutical Patent Settlement as a Regulatory Design Problem*, 81 N.Y.U. L. REV. 1553, 1553, 1557 (2007).

138. *In re* Cardizem CD Antitrust Litig., 332 F.3d 896, 908 (6th Cir. 2003).

139. *See In re* Ciprofloxacin Hydrochloride Antitrust Litig., 544 F.3d 1323, 1333 (Fed. Cir. 2008); *In re* Tamoxifen Citrate Antitrust Litig., 466 F.3d 187, 216 (2d Cir. 2006); Schering-Plough Corp. v. FTC, 402 F.3d 1056, 1076 (11th Cir. 2005); Valley Drug Co. v. Geneva Pharm., Inc., 344 F.3d 1294, 1312-13 (11th Cir. 2003).

140. *See, e.g.*, *Paying Off Generics To Prevent Competition with Brand Name Drugs: Should*

divergence, in 2006, the DOJ and FTC adopted diametrically opposed positions on the legality of reverse payments in separate briefs filed with the Supreme Court.[141] This divergence has recently come to an end, as the new Justice Department has advised the Second Circuit that it now considers reverse-exclusionary agreements to be potentially illegal.[142] Congress is considering whether to prohibit the practice by legislative fiat.[143]

Antitrust analysis of these agreements is difficult, particularly in light of the fact that horizontal market-sharing agreements are usually per se illegal.[144] Such arrangements are viewed as having such a low propensity for long-run benefit and such a large probability of immediate and potential harm that they can safely be condemned. Some Type I errors may occur, but they are likely to be so sporadic that concerns of judicial economy should normally prevail. Market-sharing agreements are therefore condemned without further inquiry, thus minimizing false negatives, which seems appropriate given the extremely low risk of false positives.[145]

Reverse payments in the pharmaceutical industry involve patent protection, which complicates analysis. As there is yet no settled view of the liability issues, no single approach to error analysis of this conduct has emerged. Nevertheless, these arrangements are classic candidates for rules, as opposed to standards. The circumstances at issue in every reverse payment case are likely to be similar. In most cases, the question will be whether a facially valid and infringed patent grants its owner the right to pay a potential

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It Be Prohibited?: Hearing Before the S. Comm. on the Judiciary, 110th Cong. 6-9 (2007) (statement of Jon Leibowitz, Comm'r, FTC); Jon Leibowitz, Comm'r, FTC, Concurring Statement of Commissioner Jon Leibowitz: *Federal Trade Commission v. Watson Pharmaceuticals et al.* 1 (Feb. 2, 2009), *available at* http://ftc.gov/speeches/leibowitz/090202watsonpharm.pdf. Notably, in January 2010, the agency released a study finding that pay-for-delay agreements cost U.S. consumers $3.5 billion per year. *See* FTC, PAY-FOR-DELAY: HOW DRUG COMPANY PAY-OFFS COST CONSUMERS BILLIONS 1-2 (2010), *available at* http://www.ftc.gov/os/2010/01/100112payfordelayrpt.pdf.

141. *See* Brief for the United States as Amicus Curiae at 8, FTC v. Schering-Plough Corp., 548 U.S. 919 (2006) (No. 05-273), *available at* http://www.usdoj.gov/atr/cases/f216300/216358.pdf.

142. *See* Diane Bartz, *Justice Dept. Says Reverse Payments Illegal*, REUTERS, July 6, 2009, http://www.reuters.com/article/rbssHealthcareNews/idUSN0628839320090707.

143. *See* Preserve Access to Affordable Generics Act, S. 369, 111th Cong. § 29(a) (2009).

144. *See* United States v. Sealy, Inc., 388 U.S. 350, 357-58 (1967).

145. *See id.* at 357; Timken Roller Bearing Co. v. United States, 341 U.S. 593, 596, 598-99 (1951).

infringer to stay out of the market during the term of the patent. The specific market will change from case to case, but the economic effects of the chosen rule will not.

In formulating the better rule, one must consider the nature of Type I and Type II errors, as well as the perceived probability of each arising under the different per se rules. One must also ask how the market will react to such mistaken determinations. In particular, can the market find a way to self-correct in the presence of false positives?

The kind of error at issue differs from those previously discussed in this Article. The danger in reverse-payment cases is first that a court will permit the practice in circumstances in which a *Markman* hearing[146] or trial would reveal that the patent was either not infringed or invalid (a Type II error). Alternatively, a court might condemn such an agreement in circumstances when the patent would have been proved both valid and infringed (a Type I error). This danger is unique, because error analysis usually focuses on the expected frequency and magnitude of mistaken determinations of anticompetitive effect, not patent validity. In the case of reverse payments, anticompetitive effect is necessarily present. They involve, after all, market-sharing agreements whose effects are well-known and have always been condemned as per se illegal. The only issue is whether those invidious effects are subsumed within the lawful monopoly inherent in a patent grant.

Perhaps the most important question, therefore, in reverse payment cases is whether the relevant patents are likely to be found valid and infringed. Empirical evidence suggests that patentees' chances of success in such proceedings are mixed. Recent studies have found that challenged patents are invalidated at rates between 42 and 50 percent.[147] In 2006, Professor Paul Janicke and LiLan Ren

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146. *See* Markman v. Westview Instruments, Inc., 52 F.3d 967, 976-78 (Fed. Cir. 1995).

147. *See* John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 205 (1998) (observing that nearly 50 percent of all litigated patents are struck down); Donald R. Dunner et al., *A Statistical Look at the Federal Circuit's Patent Decisions: 1982-1994*, 5 FED. CIR. B.J. 151, 154-56 (1995); Jean O. Lanjouw & Mark Schankerman, *Protecting Intellectual Property Rights: Are Small Firms Handicapped?*, 47 J.L. & ECON. 45, 59 (2004) (finding that win rates are close to 50 percent in patent cases); Glynn S. Lunney, Jr., *Patent Law, the Federal Circuit, and the Supreme Court: A Quiet Revolution*, 11 SUP. CT. ECON. REV. 1, 37-38 (2004) (finding that patent owners succeed about 30 percent of the time at the Federal Circuit and suggesting that the availability of injunctive relief explains the departure from a 50 percent success rate); Kimberly A. Moore, *Judges, Juries,*

found that once validity, noninfringement, and enforceability are considered, "accused patent infringers have been winning patent infringement suits at a rate of three to one."[148] Although there may be an element of selection bias present in such studies, the results are telling nonetheless.

Whether reverse-exclusionary agreements are to be approved or condemned thus turns on how likely pharmaceutical patents are to be valid. The empirical evidence suggests that it may be questionable to presume that the patent underlying a reverse-exclusionary agreement is valid. This would weigh strongly against a rule allowing pay-for-delay settlements in all cases. But neither does the empirical evidence suggest that pharmaceutical patents are more likely than not to be invalid.

One way to resolve the dilemma is to look to the text of the Patent Act.[149] Congress decreed that all patents issued by the U.S. Patent & Trademark Office are to enjoy a presumption of validity.[150] Of course, the preceding empirical evidence questions the normative basis for such a presumption. But if a court cannot discern through a hearing that the subject patent appears invalid or unlikely to be infringed, then that determination in conjunction with the presumption of validity suggests the legality of the reverse payment.[151]

The rule we counsel, which is the one adopted by the majority of courts that have considered reverse payments,[152] will inevitably result in some Type II errors. It is worth considering how the market is likely to react to such erroneous determinations, and to

and Patent Cases—An Empirical Peek Inside the Black Box, 99 MICH. L. REV. 365, 385 (2000) (taking a sample of 1151 cases over the period from 1983-1999 and finding that patentees won 58 percent of cases).

148. *See* Paul M. Janicke & LiLan Ren, *Who Wins Patent Infringement Cases?*, 34 AIPLA Q.J. 1, 3 (2006).

149. *See* 35 U.S.C. §§ 101-102, 119, 161, 172 (2006).

150. *See id.* § 282.

151. Congress is currently considering a bill that would prevent pioneer drug manufacturers from entering into agreements with generic producers, which would result in the transfer of anything of value from the former to the latter. If enacted, this would prohibit all forms of settlement in this environment. But, as Judge Richard Posner has commented, "[s]omething is wrong" with a patent system that would require a patentee to litigate all claims of invalidity or noninfringement to decision. *See* Asahi Glass Co. v. Pentech Pharm., Inc., 289 F. Supp. 2d 986, 991-94 (N.D. Ill. 2003).

152. *See, e.g.*, *In re* Ciprofloxacin Hydrochloride Antitrust Litig., 544 F.3d 1323, 1334-37 (Fed. Cir. 2008); *In re* Tamoxifen Citrate Antitrust Litig., 466 F.3d 187, 208, 209 & n.22, 210-13 (2d Cir. 2006); Schering-Plough Corp. v. FTC, 402 F.3d 1056, 1066-68 (11th Cir. 2005).

compare that reaction with its likely response to the false positives that would accompany the preclusive rule supported by the enforcement agencies.

If a court—or Congress—condemns a reverse-exclusionary arrangement when the patent would have been found valid and infringed, the effect is in some respects analogous to a taking.[153] The economic effects are straightforward. By imposing such costs on a worthy inventor, the law diminishes the incentives to invent and commercialize that animate the patent system. If this mistaken determination is applied to all cases as a rule, that is, a per se ban on reverse payments, the result will be a systemic reduction in incentives to innovate. In the pharmaceutical markets, in which innovation rather than price is the key to long-term social value, such harm may be severe.[154]

How will the market react to such a Type I error? The only plausible alternative is for pioneer drug makers to enter into settlement agreements without paying for delay. But without an ability to make such a payment, what else of value can the brand-name producer offer the generic producer that would induce it not to enter? Not much. The first ANDA-filer to submit a paragraph-IV certification commits an act of infringement but does not engage in active sales.[155] Damages are therefore nominal. In such a setting, a generic entrant has comparatively little to gain, and a lot to lose in terms of foregone profit from generic sales, in settling without receiving a large financial incentive. And patentees have little reason to provide such capital without a quid pro quo, the obvious candidate for which is delay.[156] Thus, absent a right to "pay for delay," pioneer drug manufacturers may not be able to settle these lawsuits. The market would therefore not seem capable of correcting Type I errors that systemically undercompensate deserving patentees by wrongly denying them an ability to pay potential infringers not to infringe.

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153. The distinction, of course, is that far from receiving market value for its property, the patentee bears the full cost of defending its patent's validity and establishing its proper claim construction. This is a cost for which the patentee will not be compensated.

154. *See generally* Barnett, *supra* note 32, at 859-61.

155. *See In re* Cardizem CD Antitrust Litig., 332 F.3d 896, 901 (6th Cir. 2003) (summarizing the Abbreviated New Drug Application filing, certification, and thirty-month stay provisions for generic drug makers and pioneer patentholders).

156. *See Asahi*, 289 F. Supp. 2d at 991-94.

There is consequently much to fear from Type I errors in this setting, at least if one posits the close relationship between innovation and exclusivity—the so-called Schumpeterian competition of creative destruction.[157] The market can react to Type II errors in a different way. If pay-for-delay agreements are allowed when based on facially valid and infringed patents, the result will be patentee overcompensation. A per se legal rule would transform a probabilistic property right into a certain one, permitting brand-name pharmaceutical companies to derive greater value than contemplated by the patent bargain.[158] Some patents that would have been found invalid or not infringed will continue to enjoy exclusive force. Generic drugs that would otherwise have entered the market promptly will be delayed until the expiration of the pioneer patent. Consumers will therefore lose as a result.[159]

Putting aside the presumption of patent validity, which tilts the balance of the debate toward permissibility, comparative error analysis would support Type II errors over Type I with regard to reverse payments. The cost of the former is limited—generic entry will eventually occur, and patentee overcompensation, imperfect as it is, will at least incentivize innovation, which is the ultimate source of long-run consumer welfare. Type I errors threaten to dilute the crucial incentives to invent and commercialize that underlie the pharmaceutical industry.

That Type I mistakes are more costly might suggest that the optimal rule for reverse payments is per se legality. The alternative rule—automatic illegality—may be considered inferior under the preceding error analysis. Nevertheless, it does not follow that the former rule is the correct one. Society is not forced to choose between two extreme alternatives. Yes, individual Type I errors are likely to be more harmful than Type II mistakes, but that fact would dictate the optimal rule only if we had to operate in an environment of complete uncertainty. With respect to reverse payments, however,

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157. There is an important, though never-ending, debate among scholars concerning the question of whether competition or monopoly is the best driver of long-run innovation. *See, e.g.*, Jonathan B. Baker, *Beyond* Schumpeter vs. Arrow*: How Antitrust Fosters Innovation*, 74 ANTITRUST L.J. 575, 577-89 (2007).

158. For one of the author's larger view on this point, see Alan Devlin, *The Stochastic Relationship Between Patents and Antitrust*, 5 J. COMPETITION L. & ECON. 75, 77-81, 106-09 (2009).

159. *See supra* note 140 and accompanying text.

we do have some valuable information that may allow us to craft more nuanced rules.

Specifically, society can greatly reduce the incidence of false negatives (allowing reverse payments when the underlying patent is invalid or not infringed) by accepting some slightly larger incidence of false positives (banning reverse payments when the underlying patent is valid and infringed). To achieve this, courts should err on the side of permissibility and prohibit reverse agreements only when serious questions arise as to the patent's validity or reach, or when the agreement has effects beyond the scope of the patent.[160] Each of these determinations will bear some prospect for error by mistakenly condemning what should have been a valid exclusionary right. And each such false positive is more harmful than each mistaken determination in the opposite direction. But a per se rule will result in a number of Type II errors that swamp Type I mistakes. A more scrutinizing approach would entertain greater risk of the latter to facilitate a disproportionate reduction in false negatives. Thus, the socially optimal rule does not turn on a simple determination that Type II errors are to be preferred to Type I, but on a more complex inquiry into the relationship between the two.

Pursuant to this more nuanced error analysis, we believe that the optimal approach is to allow pay-for-delay settlements when the patent appears valid and infringed and when the agreement does not create a negative external effect, such as frustrating potential entry by third-party generic manufacturers. This approach, which declines to allow all reverse payments, would result in some false positives in application. But the concomitant reduction in Type II errors is likely to swamp the occasional effect of a reverse agreement wrongly condemned, given the former's expected relative frequency and cumulative impact.

160. It is appropriate to ban a pay-for-delay settlement when the agreement appears to exceed the scope of the patent, such as in *In re Cardizem*, in which the first ANDA-filer agreed not to license the 180-day period of first-mover exclusivity. *See In re Cardizem*, 332 F.3d at 902, 907-08.

3. Refusals To Supply

Refusals to supply cast the tension between the long run and short run into critical relief, creating a quandary for antitrust enforcers. Requiring a dominant firm to share its IP or physical "essential facility" with rivals may facilitate "viable" competition by allowing those rivals to compete on an equal basis with the monopolist. In the short term, this competition will surely result in lower prices and hence greater consumer welfare. These unequivocal effects make interoperability, compulsory licensing, and other interventionist remedies extremely tempting to antitrust enforcers who dislike prevailing monopoly conditions. But the intervention comes at a possible cost. Economics indicates that compulsory licensing reduces the value of invention to a successful innovator, and therefore diminishes the incentive to innovate in the first place.[161] An antitrust regime that insists upon an unconcentrated market structure may myopically foreclose dynamic efficiency that is of far greater long-term value to consumers than short-term price competition. Of course, in order to identify the optimal rate of intervention in monopoly markets, enforcers must be capable of measuring and comparing the beneficial short-run effects of interoperability against future costs from distorted incentives.

Once again, determinations of liability with respect to a monopolist's refusal to supply are highly vulnerable to error. False positives will condemn a dominant firm for refusing to license its IP, physical infrastructure, or other form of property when social welfare would be maximized by respecting the firm's licensing decisions. False negatives would permit a monopolist to exclude rivals when licensing would promote long-run consumer welfare. Here, we believe that the prevailing U.S. rule is the correct one. Under modern antitrust law, a property owner has an almost absolute right to exclude others.[162] The law therefore avoids Type I errors and accepts some Type II mistakes.

161. *See* Yannis S. Katsoulacos, *Optimal Legal Standards for Refusals To License Intellectual Property: A Welfare-Based Analysis*, 5 J. COMPETITION L. & ECON. 269, 282-83 (2009); Aaron K. Perzanowski, *Rethinking Anticircumvention's Interoperability Policy*, 42 U.C. DAVIS L. REV. 1549, 1558-60 (2009).

162. *See* Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, 540 U.S. 398, 407-09 (2004); *In re* Indep. Serv. Orgs. Antitrust Litig., 203 F.3d 1322, 1325-28 (Fed. Cir. 2000); Image Technical Servs., Inc. v. Eastman Kodak Co., 125 F.3d 1195, 1214-20 (9th Cir. 1997).

The process of innovation is not yet fully understood, but a powerful correlation seems to exist between strong property rights and commercial invention.[163] When a company refuses to share its intellectual or physical property with a rival, it exercises the power to exclude, which defines a property right. By intruding upon that right, antitrust authorities wade into dangerous waters. If a successful innovator cannot reap the fruits of its invention, the crucial incentives that drove that innovation yesterday may be absent tomorrow. The cost of such an outcome is apt to be far larger than the short-run monopoly prices associated with exclusivity. As the Supreme Court emphasized in *Trinko*, incursions into even a monopolist's property are to be undertaken rarely and only when regulators have confidence that the harm to incentives will be outweighed.[164] As the Court aptly pointed out, the propensity for error that plagues this inquiry usually forecloses any prospect of antitrust liability for a refusal to deal.[165]

We have explained elsewhere why interoperability is rarely an appropriate antitrust response to monopoly conditions.[166] But a duty to deal might reasonably be imposed when it would not appear to injure long-run incentives disproportionately vis-à-vis the short-run gain sought to be achieved. One situation that might fall under this category would be when a dominant company used to deal with a rival but subsequently ceases to do so for a reason that cannot be tied to a change in the market. In such a case, the prior course of dealing presumably existed because it was mutually beneficial. A subsequent refusal to deal, if it effectively eliminates a competitor's ability to compete and thus harms consumers, may result in short-run losses that are to be measured against an attenuated risk to future incentives. Such was the situation in *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, in which the Court found a dominant ski operator liable under Section 2 for cutting off a long-standing cooperative arrangement with the owner of a rival mountain.[167] In

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163. *See, e.g.*, Glynn S. Lunney, Jr., *Patents and Growth: Empirical Evidence from the States*, 87 N.C. L. REV. 1467, 1470-79, 1486-89, 1516-17 (2009).

164. *See Trinko*, 540 U.S. at 408-09.

165. *See id.*

166. *See* Alan Devlin, Michael Jacobs & Bruno Peixoto, *Success, Dominance, and Interoperability*, 84 IND. L.J. 1157, 1161, 1179-200 (2009).

167. 472 U.S. 585, 589-95, 601, 605-11 (1985). Even this rule can be questioned, however, given that it creates a disincentive for dominant companies to begin cooperating with rivals

this setting, the risk of a serious Type I error is much reduced by demonstrable evidence that prior courses of dealing were mutually profitable. Denying dominant firms their right to exclude in such a context is distinctly less likely to carry with it a risk of a significant diminution in incentives.

4. Predatory Pricing

Courts must often make crucial distinctions between procompetitive and anticompetitive conduct. But in many circumstances the two are difficult to distinguish. Nowhere is this tension more obvious than with respect to predatory pricing. At its most basic level, antitrust policy is designed to spur vigorous price competition.[168] Low prices are good prices. One would thus expect claims of excessive price-cutting to be met with skepticism. And indeed they are.[169] But although most instances of below-cost selling are apt to be irrational, given their weak ability to yield or maintain a monopoly,[170] the economic literature suggests that predatory pricing could be a rational tactic in some circumstances,[171] particularly when dominant firms set prices below their costs in an effort to eliminate new competitors in their incipiency.[172]

The potential for error is palpable in the sphere of predatory pricing. The relevant metric by which to judge the optimality of price is marginal cost.[173] Under perfect competition, the two will be

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in the first place. And the precedent established in a narrow case can easily mutate into support for more invasive intervention in the future. In *Trinko*, the Court characterized *Aspen* as being "at or near" the outer boundaries of Section 2 liability, a result that strikes us as entirely correct. *See Trinko*, 540 U.S. at 409.

168. *See* Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co., 549 U.S. 312, 319 (2007); Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 224, 226 (1993).

169. *See, e.g.*, Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 594 (1986) ("[C]utting prices in order to increase business often is the very essence of competition. Thus, mistaken inferences in cases such as this one are especially costly, because they chill the very conduct the antitrust laws are designed to protect.").

170. *See* POSNER, *supra* note 122, at 208-11.

171. *See, e.g.*, Patrick Bolton et al., *Predatory Pricing: Strategic Theory and Legal Policy*, 88 GEO. L.J. 2239, 2241, 2243-50 (2000).

172. *See* POSNER, *supra* note 122, at 208-11.

173. *See* Phillip Areeda & Donald F. Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 HARV. L. REV. 697, 700-03, 716 (1975).

equal.[174] It is widely agreed that no firm, even a monopolist, should be punished for reducing price below that of a rival, as long as that price is equal to or above its own marginal cost.[175] This holds true even if the dominant firm can efficiently adopt an above-marginal-cost price that is below the marginal cost of its rivals, and thus force them from the market.[176] Unfortunately, marginal cost is effectively impossible to calculate in practice.[177] Hence, the first source of concern for courts in predatory pricing cases: how are they to tell whether a given price is below or above cost for purposes of the rule?

Academics and the judiciary have struggled to formulate an appropriate proxy for marginal cost. The best candidate yet devised is long-run average cost, which is calculable. This measure was derived from the Areeda-Turner test, which uses short-run average variable cost as a surrogate for marginal cost.[178] Pricing above short-run average variable cost is per se lawful,[179] except perhaps in the Ninth Circuit, which has held that prices in excess of average total cost are not immune from antitrust scrutiny.[180]

Notwithstanding these accepted principles, constructing an appropriate measure of cost is a complex undertaking that is obviously subject to error. An erroneous determination that a defendant's price is below its short-run average variable cost can lead to a wrongful conviction. Courts seek to minimize this risk by relying on increasingly sophisticated evidence, typically provided by expert economists.

But calculating the relationship between price and cost in a particular case is only part of the battle. A finding that a dominant

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174. *See* Glynn S. Lunney, Jr., *Copyright's Price Discrimination Panacea*, 21 HARV. J.L. & TECH. 387, 398 (2008).

175. *See* Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 223 (1993) ("[W]e have rejected ... the notion that above-cost prices ... inflict injury to competition cognizable under the antitrust laws.").

176. *See* Einer Elhauge, *Why Above-Cost Price Cuts To Drive Out Entrants Are Not Predatory—and the Implications for Defining Costs and Market Power*, 112 YALE L.J. 681 (2003).

177. *See* United States v. AMR Corp., 335 F.3d 1109, 1116 (10th Cir. 2003).

178. *See* Areeda & Turner, *supra* note 173, at 716-18.

179. *See, e.g.*, Barry Wright Corp. v. ITT Grinnell Corp., 724 F.2d 227, 234-35 (1st Cir. 1983); MCI Commc'ns v. AT&T Co., 708 F.2d 1081, 1114 (7th Cir. 1983); Ne. Tel. Co. v. AT&T Co., 651 F.2d 76, 91 (2d Cir. 1981); *In re* Int'l Tel. & Tel. Corp., 104 F.T.C. 280, 403-04 (1984).

180. *See* Transamerica Computer Co. v. IBM Corp., 698 F.2d 1377, 1388 (9th Cir. 1983), *cert. denied*, 464 U.S. 955 (1983). It is questionable that this opinion survives *Brooke Group*, however.

firm did indeed set price below cost should not—and in the United States does not—by itself result in an antitrust violation.[181] Companies regularly set price below cost for a wide variety of legitimate reasons.[182] All firms, monopolists or otherwise, may rationally introduce a new product at below-cost prices to induce customer switch-over and rapid uptake. This phenomenon is apt to be particularly common in network industries, in which strong positive externalities in consumption are present.[183] Companies may give certain products away for free for promotional purposes, or may include certain goods in a bundle—perhaps at no additional cost to the consumer—to render the tying product more attractive to the marginal purchaser. And rivals may simply engage in all-out price wars that result in their making sub-marginal-cost sales in a bid to capture market share and the attendant scale economies. Only rarely will below-cost pricing create dangers for long-term consumer welfare.[184]

A blanket prohibition of below-cost selling would result in an unacceptable number of Type I errors, as consumer-friendly price cuts would be condemned in circumstances in which no long-term threat to economic efficiency exists. Importantly, the market would not be able to create a desirable solution to false positives. A ban on sub-marginal-cost selling would simply prevent companies, especially large and efficient ones, from engaging in fierce price competition. Fearful of being found liable under the antitrust laws, companies would temper their behavior and raise prices, at significant cost to consumers.

If a rule was appropriate, then it would be one of per se legality. Indeed, this position has been promoted by the Chicago School, which characterized predatory pricing as inherently irrational.[185] On its view, a predator would first have to suffer losses on an

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181. *See* Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 222-24 (1993); C. Scott Hemphill, Note, *The Role of Recoupment in Predatory Pricing Analyses*, 53 STAN. L. REV. 1581, 1582-85 (2001).

182. *See* Bolton et al., *supra* note 171, at 2281-82.

183. *See* STAN J. LIEBOWITZ & STEPHEN E. MARGOLIS, WINNERS, LOSERS, AND MICROSOFT: COMPETITION AND ANTITRUST IN HIGH TECHNOLOGY 14-16, 109-12 (2001); Bolton et al., *supra* note 171, at 2281-82.

184. *See* POSNER, *supra* note 122, at 208-09.

185. *See* ROBERT BORK, THE ANTITRUST PARADOX 149-55 (1993); Richard A. Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925 (1979) (describing the basic features of the Chicago School).

increasing volume of sales in order to monopolize a market, and would then have to increase and maintain price at supracompetitive levels long enough to render the operation profitable. But the presence of monopoly profits would entice entry, which would deny the predator the ability to recoup losses. Knowing this ex ante, few companies would embark on a predatory pricing campaign.[186]

Such skepticism has permeated through to substantive doctrine. The Supreme Court has characterized predatory pricing as a practice "rarely tried, and even more rarely successful."[187] But the Court has sensibly eschewed translating that skepticism into a bright-line rule. Post-Chicago economic models conclude that below-cost pricing may be a rational method of excluding an equally or more efficient competitor in certain, narrow circumstances.[188] If correct, these models suggest that a rule of per se legality would carry a propensity for Type II errors and would immunize below-cost predation that poses a significant threat to long-term competition.[189] A per se legal rule would allow such monopolists to perpetuate their position against potentially superior opposition. Although dominant firms' ability to exclude entry in the long run would be limited, given the availability of capital to enter markets in which monopoly power is present, the delay created by below-cost predation is itself objectionable.

The law reacts to this fact by injecting a requirement that the plaintiff prove a "dangerous probability of recoupment," in addition to the existence of below-cost pricing, for a violation of Section 2 to follow.[190] This standard, which unquestionably tilts the balance toward the defendant in predatory pricing suits, seeks to ensure that mistaken determinations of sub-marginal-cost pricing will not result in false convictions. It also ensures that actual instances of below-cost pricing will not be condemned unless there is good reason

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186. *See* BORK, *supra* note 185, at 149-55.

187. Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 589 (1986).

188. *See* McChesney, *supra* note 9, at 1414-15.

189. As noted above, theory indicates that predatory pricing is likely to be rational only when a company already holds a monopoly and seeks to eliminate fringe rivalry. *See* POSNER, *supra* note 122, at 208-09.

190. Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co., 549 U.S. 312, 319-20 (2007). This, of course, is in addition to the required showing of monopoly power in all monopolization cases taken under Section 2. The requirement of significant market power immunizes behavior by fringe firms, as they cannot unilaterally impact the market in a negative way.

to believe that the conduct will result in economic distortions that the market will not correct.[191] In practice, this translates into a requirement that the market in which the predation takes place be characterized by significant entry barriers that will prevent the arrival of timely, likely, and sufficient competition.

We find the law's approach to predatory pricing to be most sensible. Given the grave potential for Type I errors in this area, and the unacceptable cost of such errors were they to materialize, the courts are right to erect significant obstacles for plaintiffs who allege such behavior. Nevertheless, the propensity for Type II errors persists. Because a standard can be formulated that largely excludes the possibility of serious errors of both the false negative and positive varieties, a rule in either direction is likely inferior.

5. Vertical Distribution Contracts, Integration, and Product Tying

Vertical restrictions, integration, and product tying—all closely related phenomena—have long confounded the courts. These practices implicate the manner in which a manufacturer arranges for its goods to be delivered to consumers and, in the case of tying, how sellers present those goods to purchasers. As one might imagine, vertical contracts, integration, and tie-ins are common in developed economies.[192] Yet, for a variety of reasons, antitrust has long taken a dim view of such conduct.

All three forms of behavior—vertical restraints, integration, and product tying—are generally good candidates for the basic error treatment in which the law seeks to avoid Type I errors. This is primarily due to the voluminous empirical and theoretical literature that indicates that such behavior is more often than not pro-

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191. *See* Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 222-27 (1993) (discussing market power, below-cost pricing, and what characterizes a "dangerous probability" of recoupment).

192. *See* U.S. DEP'T OF JUSTICE, *supra* note 1, at 77; David S. Evans & Michael Salinger, *Why Do Firms Bundle and Tie? Evidence from Competitive Markets and Implications for Tying Law*, 22 YALE J. ON REG. 37, 39-42 (2005); Bruce H. Kobayashi, *Two Tales of Bundling: Implications for the Application of Antitrust Law to Bundled Discounts* 1-4 (George Mason Univ. Sch. of Law, Law and Economics Working Paper Series, Paper No. 05-27, 2005), *available at* http://ssrn.com/abstract_id=796432.

competitive.[193] But it is also because the required comparisons are not only intertemporal much of the time, but are also intermarket.[194] Resale price maintenance has implications for both inter- and intrabrand competition, but these effects are rarely comparable. Assessing the net welfare costs of vertical integration involves a trade-off between definite short-run efficiency and possible long-run loss through diminished competition or foreclosure caused, in the unknowable future, by rivals' higher costs.[195] Bundling and requirements contracts necessitate the consideration of tying and tied markets, as well as the short- and long-run effects of the conduct in each. And all involve some consideration of future barriers to entry, as well as consumer demand.[196]

These factors are neither commensurate nor comparable.[197] As a result, subjecting these arrangements to full-blown rule-of-reason analysis is both wasteful and counterproductive:[198] an inquiry into practices with immeasurable and incomparable effects will be fruitless, irrespective of whether it is cursory or exhaustive. As noted, there is strong theoretical and empirical evidence that these forms of vertical conduct are generally procompetitive.[199] This might suggest the primacy of a rule, but per se legality will certainly result in numerous Type II errors given the economic literature that points to cases in which tying, integration, and vertical restrictions may generate negative effects.[200] When a manufacturer has genuine monopoly power, tie-ins can delay entry by requiring rivals to enter in multiple markets simultaneously.[201] Certain vertical restrictions may raise the cost of entry by denying potential upstream competi-

193. *See, e.g.*, Christian Ahlborn et al., *The Antitrust Economics of Tying: A Farewell to Per Se Illegality*, 49 ANTITRUST BULL. 287, 287-305, 318-29 (2004).

194. *See* Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 397, 403 n.4 (2009) (citing scholarship in support of the "single monopoly profit theory").

195. *See* Posner, *supra* note 185, at 936-38.

196. *See id.* at 933-48 (discussing the similarities and differences of the Chicago and Harvard Schools and barriers to entry).

197. *See* Frank H. Easterbrook, *Vertical Arrangements and the Rule of Reason*, 53 ANTITRUST L.J. 135, 155-56 (1984).

198. *Id.*

199. *See supra* note 193 and accompanying text.

200. *Id.*

201. Recent literature suggests that such monopolists may in fact be able to bypass the "single monopoly profit" constraint. *See* Elhauge, *supra* note 194, at 399-401, 403-20.

tors access to an efficient distribution network. Vertical integration by an upstream monopolist can produce an analogous effect.

Given that courts are vulnerable to Type I errors in this setting, and given the probability and large relative cost of such mistakes, plaintiffs should face a significant burden to establish an antitrust violation. The most obvious appropriate impediment to recovery would be a showing of monopoly power. U.S. law has adopted such a requirement, but its definition of "monopoly" in this setting is too lax. Firms with less than 50 percent market share can be found to occupy a dominant position,[202] but the power over price normally associated with such a share is usually insufficient to create a meaningful threat to competition. As one of the authors has explained elsewhere, a firm engaged in product tying, or another form of vertical behavior, needs a near monopoly to succeed.[203] The courts should also require plaintiffs to show that the impugned conduct has led to an actual reduction in output, or that it has created a dangerous probability of one in the future. In settings in which courts cannot confidently identify the competitive effects of vertical integration, restrictions, or tying arrangements, they should treat the conduct under review as consistent with the antitrust laws.

6. Should Certain Instances of Price-Fixing Be Analyzed Under the Rule of Reason?

We complete our extrapolation of behavior-specific error rules by briefly exploring an area of law in which the pro-Type I-error bias is properly reversed. The relevant question is whether certain instances of horizontal price-fixing should be analyzed under a broad standard rather than a prohibitive rule. As noted above, rules are almost by definition error-prone in that they tend to be either over- or underinclusive.[204] Hence, the per se prohibition of horizontal price-fixing is virtually certain to result in at least some erroneous condemnations of welfare-enhancing price fixes.

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202. *See* Hayden Publ'g Co. v. Cox Broad. Corp., 730 F.2d 64, 69 n.7 (2d Cir. 1984).

203. *See* Alan Devlin, *A Neo-Chicago Perspective on the Law of Product Tying*, 44 AM. BUS. L.J. 521, 530-32 (2007).

204. *See* Michael Abramowicz & John F. Duffy, *Ending the Patenting Monopoly*, 157 U. PA. L. REV. 1541, 1551 (2009).

The case of cartels is interesting because it demonstrates that U.S. antitrust law's predilection toward false negatives is not absolute. In cases in which the long-run benefits of a practice are construed as vague, distant, and improbable, but its immediate negative effects are both serious and likely, the law foregoes inquiry into whether free-market processes might remedy short-run harm. Horizontal collusion regarding price or market allocation is the prime example.

It has long been a threshold principle of competition law that such cartel activity is illegal without regard to reasonableness, intent, or other extenuating circumstances.[205] Such collusion—consistently regarded as the prime evil against which antitrust is directed[206]—leads to output restrictions, price increases, deadweight loss, allocative inefficiency, and diminished aggregate welfare.[207] Collusion not only results in an unwarranted wealth transfer from consumers to producers, but it also diminishes the net wealth of society by reducing the number of transactions that take place in the economy.[208] At their most fundamental level, cartel-driven price increases are tantamount to theft.[209]

Despite these well-established bases for condemning horizontal price-fixing, such arrangements are not necessarily devoid of benefit.[210] Ruthless price competition drives inefficient companies from the market, which is the cost of an efficiency-driven application

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205. *See* Palmer v. BRG of Ga., Inc., 498 U.S. 46, 48-50 (1990) (per curiam); United States v. Trenton Potteries Co., 273 U.S. 392, 401 (1927).

206. *See* Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, 540 U.S. 398, 408 (2004).

207. *See generally* POSNER, *supra* note 122, at 9-32.

208. *See id.* at 22-23; Maurice E. Stucks, *Morality and Antitrust*, 2006 COLUM. BUS. L. REV. 443, 444-48, 476-78.

209. This is the position taken by some Member States of the European Commission when enforcing their laws against cartels. *See* Julian Joshua, *The European Cartel Enforcement Regime Post-Modernization: How Is It Working?*, 13 GEO. MASON L. REV. 1247, 1248 (2006). However, among antitrust enforcers around the world, a "gulf" exists between the criminal-theft view and the economic-phenomena view. *See* Julian M. Joshua et al., *Extradition and Mutual Legal Assistance Treaties: Cartel Enforcement's Global Reach*, 75 ANTITRUST L.J. 353, 359 (2008).

210. Benefits are most likely under so-called "semi-collusion." *See* Russell W. Cooper & Thomas W. Ross, *Sustaining Cooperation with Joint Ventures*, 25 J.L. ECON. & ORG. 31, 34 n.10 (2009); *see also* Robert C. Marshall & Michael J. Meurer, *Bidder Collusion and Antitrust Law: Refining the Analysis of Price Fixing To Account for the Special Features of Auction Markets*, 72 ANTITRUST L.J. 83, 99-100 (2004) (noting that collusion by poorly informed bidders can have social benefits).

of competition law. But in atypical cases of supply shocks, severe recession, or banking crises, otherwise successful, innovative, and dynamic firms may be unable to survive in the presence of unforgiving price-cutting. The failure of such companies would result in reduced employment, lost investment, and enhanced ex post market power. It is conceivable, at least at the level of theory, that efficient firms in a competitive market could enhance their viability, and thus provide some stability to the larger economy, by agreeing to set prices at an appropriate level in a time of severe economic contraction.[211]

Such collusion could be normatively justified in other settings too, including when sellers react collectively to monopsonistic power. In these settings, the dominant manufacturer in a market may be able to drive down the price at which it buys inputs to sub-marginal-cost levels, which would result in downstream and upstream distortions.[212] By agreeing to act collectively, sellers could counteract the purchaser's buying power and bring price closer to the competitive level, with net benefits for society.

Nevertheless, antitrust law properly blinds itself to the possibility of such benefits, and seeks instead to condemn any and all instances of collusion. The law arrives at this conclusion not because it denies the existence of potentially offsetting benefits, but because those gains are apt to arise so infrequently that the law can more efficiently assume that collusion is always harmful. The per se rule is, of course, a cost-saving heuristic.[213] But it is one appropriately skewed in favor of Type I errors. Here the law is willing to accept an isolated number of false positives, correctly observing that the price of a non-per se rule would be an unacceptable number of false negatives.[214]

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211. Of course, the proper price would not be the "monopoly" price, which would serve to exacerbate the recession's effect. A more reasonable price would be one that would stave off insolvency by preventing prices from falling to marginal cost when the affected companies bear considerable sunk costs.

212. *See* DENNIS W. CARLTON & JEFFREY M. PERLOFF, MODERN INDUSTRIAL ORGANIZATION 107-10 (4th ed. 2005).

213. *See* Cont'l T.V., Inc. v. GTE Sylvania, Inc., 433 U.S. 36, 50 n.16 (1977).

214. Interestingly, the law's embrace of Type I errors in the case of cartels is not without criticism. Indeed, there is a movement currently afoot to remove certain instances of horizontal price-fixing from the category of per se illegal practices. In a working paper, Professor Picker highlights horizontally imposed vertical rules, which involve distributors agreeing among themselves on a minimum price and persuading the relevant manufacturer

C. Putting Faith in the Agencies? Prosecutorial Discretion as a Facilitator of a Permissive Rule

The preceding discussion indicates that error analysis can and should adopt a more nuanced approach than its current one-size-fits-all heuristic in favor of Type I errors. Different forms of conduct yield distinct tendencies toward false positives and false negatives, the respective costs of which will necessarily be context specific.

The vast spectrum of real-life commercial behavior does not lend itself to reliable analysis by a single test. Courts, enforcers, and academics have struggled to articulate one that judges can use to distinguish procompetitive from anticompetitive conduct.[215] No test yet devised comes close to satisfying this purpose.[216] Nevertheless, there is an important difference between substantive law, which states the necessary elements of a cause of action, and an evidentiary burden. Both aspects of the law provide policy levers for error rules. Given the noncredibility of rivals' protestations of anticompetitive injury and the fact that efficiency-enhancing conduct necessarily injures competitors, there is strong basis for holding private antitrust complainants to a high evidentiary standard. In all instances, those plaintiffs should bear the ultimate burden of demonstrating actual harm or a sufficient likelihood of future anticompetitive effect.

This notion should not be controversial. The great difficulty lies in defining and applying a test that demonstrates a breach of the substantive law. In lieu of such a test, policymakers can create an appropriate obstacle to recovery by establishing a suitable evidentiary burden. Indeed, the Supreme Court has already changed the procedural rules in private antitrust litigation to avoid error and cost.[217] The "substantially disproportionate" test championed

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to impose it. *See* Picker, *supra* note 110, at 9-16. It is not clear to us that such arrangements should fall outside the per se prohibition. As Judge Posner has emphasized, "it makes all the difference whether minimum retail prices are imposed by the manufacturer in order to evoke point-of-sale services or by the dealers in order to obtain monopoly profits." *See* POSNER, *supra* note 122, at 177.

215. *See* Elhauge, *supra* note 45, at 257-68.

216. *See id.* at 266.

217. *See* Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, 540 U.S. 398, 408-09 (2004); Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 587-88, 593-95 (1986).

by the Justice Department's 2008 report has much to commend it.[218] Given the vast limitations encountered in the economic analysis of unilateral behavior by dominant firms, all-encompassing standards are likely to aggravate error, rather than to diminish it. In some circumstances—when the risk and magnitude of Type II errors are deemed attenuated and Type I errors are apt to be both likely and especially costly—per se legal rules may be appropriate. The proffered example was a monopolist's refusal to grant rivals access to its physical or intellectual infrastructure in circumstances in which such access had never been made available before.

Yet, in many cases, the threat of anticompetitive effect is sufficiently real that a preclusive per se rule is inappropriate. Prudent antitrust policy should meet injured rivals' antitrust claims with skepticism.[219] Although it was a controversial conclusion on the part of the Justice Department, we believe that the "substantially disproportionate" test is a generally prudent one to apply to lawsuits initiated by private parties.[220] Crucially, however, the burden is *not* appropriately applied to the enforcement agencies themselves. Unlike those of private litigants, the FTC's and DOJ's allegations of anticompetitive behavior are relatively credible. Efficient behavior in the market will have no adverse impact on the agencies. Moreover, given the agencies' substantive expertise, courts should prove receptive to novel theories of economic harm, even if they do not ultimately accept those theories upon full consideration.

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218. *See* U.S. DEP'T OF JUSTICE, *supra* note 1, at ix, 45-47.

219. In this information-deprived setting, selection bias will surely mean that a majority of the antitrust complaints filed in court should not be countenanced. In a completely information-deprived setting, in which judges have no ability to establish conclusively the long-run commercial impact of a challenged practice, they would reach the right result more often than not—and save substantial litigation costs—by rejecting all claims. In a more realistic setting, in which judges have some ability, albeit limited, to assess the short- and long-run consequences of challenged behavior, the high likelihood of plaintiffs' misplaced incentives justifies a presumption of legality. This presumption can be given various forms, but it must in all cases create an evidentiary burden that requires a plaintiff to establish that anticompetitive effect is considerably more likely than not on the facts of the case. The Justice Department's 2008 report advocated just such a burden.

220. Of course, Part III.A indicated that antitrust analysis of different practices should vary according to the relative risks and magnitude of false positives and negatives likely to be encountered in distinct settings. Thus, the "substantially disproportionate" test ought to be applied in malleable fashion. Nevertheless, this test is better characterized as creating an evidentiary burden, rather than a substantive rule or standard for establishing what is and is not anticompetitive.

By this interactive dynamic, the courts and agencies can test the boundaries of antitrust law and ultimately improve the jurisprudence that defines it. Historically, this system of checks and balances has produced great benefits. The agencies' promotion of economically sophisticated merger doctrine provides the prime example of how they can improve flawed doctrine by influencing the courts over a sustained period of time.[221] Similarly, there are many instances in which the courts have properly prevented the FTC and DOJ from overreaching the confines of sound economics.

Given the self-evident advantages brought by agency flexibility, self-imposed conditions on enforcement actions are of questionable value if they are crafted too restrictively. Although guidelines have excellent educational value for companies that wish to comply with the antitrust laws, and can desirably influence the law, they can carry negative consequences. Draconian conditions can tie the hands of an agency, even in situations in which the risk of error is small. Indeed, the courts typically hold the FTC and DOJ to their guidelines.[222] Thus, the Justice Department's report might have been better placed as a set of guidelines for the courts to follow in cases brought by aggrieved private litigants. The report should have made clear that the Antitrust Division did not intend to hold itself to those demanding evidentiary standards, which would have required it to persuade the court in every case that the likely anticompetitive effect of a practice substantially outweighed any associated benefits.

We therefore counsel an evidentiary asymmetry between cases taken by private litigants, on the one hand, and the enforcement agencies, on the other. One might disagree with this, however, on the basis of trust. Can we really trust the government to bring economically coherent claims of antitrust violations that are in the public interest? The short answer is a qualified "yes," when compared to lawsuits initiated by the injured rivals of a defendant. Of course, the agencies are prone to miscalculation and overreaching, as is any entity subject to imperfect human judgment. They have demonstrably taken a more aggressive stance in some monopoliza-

221. *See generally* Arthur Austin, *Antitrust Reaction to the Merger Wave: The Revolution vs. the Counterrevolution*, 66 N.C. L. REV. 931, 945-62 (1988) (illustrating how the Chicago School has become predominant).

222. *See, e.g.*, Cmty. Publ'rs, Inc. v. Donrey Corp., 892 F. Supp. 1146, 1153-55 (W.D. Ark. 1995).

tion cases than was prudent. And there is no question that the FTC and DOJ can act in politically biased ways, often reflecting the sociopolitical perspective of the executive. This perspective, of course, may or may not mirror the consensus view of economists. It may or may not reflect sound policy. Conceivably, the agencies could operate as an instrument for sociopolitical forces that have interests other than allocative efficiency at heart.

Despite these imperfections, the fact remains that the enforcement agencies bring great expertise to antitrust matters, and can generally be trusted to bring actions that promote the common good. Given the indeterminacy present in economic calculation and the political sensitivity of the conduct ultimately regulated, the administration of competition law does not lend itself to ubiquitous agreement. The agencies' views will routinely run counter to those held by some economists, lawyers, and courts. And they will sometimes run counter to one another. But the fact of disagreement in this complex field should hardly nullify the agencies' expertise or reduce the importance of their roles.

The agencies should continue to advance novel theories of anticompetitive conduct, and the courts should entertain those theories hospitably, even if they ultimately reject them. They ought to consider holding the agencies to a lower burden of persuasion than they would require of private parties. The reciprocal constraints placed by the agencies and courts on one another are likely to yield superior outcomes in the long run. This fact justifies some asymmetry in the reception of antitrust complaints. Ultimately, the judiciary ought to be less concerned about Type I errors in the context of an agency enforcement proceeding.

CONCLUSION

Questions of antitrust liability are often beset with uncertainty, which is highly problematic given the cost of mistakes in either direction. Erroneous condemnation punishes procompetitive behavior, stifles incentives to compete and innovate, and may seriously diminish long-run welfare. Yet mistakenly sanctioning exclusionary, collusive, or predatory behavior yields other costs, most obviously with respect to reduced levels of static and dynamic efficiency. Because the information required to facilitate determina-

tive analysis is presently unavailable, enforcers must rely on some form of error analysis in formulating the best possible liability decisions.

The current mode of antitrust-error analysis reflects Chief Judge Easterbrook's influential article in the 1984 issue of the *Texas Law Review*.[223] His view was straightforward: Type I errors are worse than false negatives because the former are perpetual, whereas the latter will be promptly eroded by the corrective forces of the free market.[224] Judge Easterbrook's position may be thought of as an antithesis, the thesis being the "inhospitability tradition"[225] that had characterized antitrust law throughout the 1950s and 1960s and led to the host of per se rules adopted during that era. The Warren Court's approach to antitrust during this era may fairly be characterized as displaying an implicit preference for Type II errors. Judge Easterbrook reacted intelligently but extravagantly. This Article has argued that it is now time for a synthesis.

We believe error analysis in competition law can be improved by focusing on four grounds. First, Type I errors are not necessarily more harmful to society than false negatives, particularly on a cumulative basis. Second, a false positive need not eliminate the full social value of the conduct wrongly condemned. Second-best options remain open to the affected companies and it is possible that these may in fact produce preferable outcomes in the long run. Third, improper rules of law are not perpetual. Stare decisis is unusually weak in the antitrust realm[226] and swathes of "moth-eaten"[227] precedent have been overruled.[228] Although some of these holdings have been a long time coming, the law has invariably facilitated end

223. *See* Easterbrook, *supra* note 10.

224. *Id.* at 9-17, 39-40.

225. *See* Oliver E. Williamson, *Introduction: Symposium on Antitrust Law and Economics*, 127 U. PA. L. REV. 918, 920 (1979).

226. *See* Leegin Creative Leather Prods., Inc. v. PSKS, Inc., 551 U.S. 877, 899 (2007).

227. *See* Khan v. State Oil Co., 93 F.3d 1358, 1363 (7th Cir. 1996), *rev'd*, 522 U.S. 3 (1997).

228. *See, e.g.*, Albrecht v. Herald Co., 390 U.S. 145, 152-54 (1968) (prohibiting maximum resale price maintenance), *overruled by Khan*, 522 U.S. at 3; Dr. Miles Med. Co. v. John D. Park & Sons, 220 U.S. 373, 394-96, 406-09 (1911) (finding minimum resale price maintenance illegal), *overruled by Leegin*, 551 U.S. 877. The Seventh Circuit Court of Appeals has recognized that another decision, *United States v. Von's Grocery Co.*, 384 U.S. 270, 272-74, 277-79 (1966), which prohibited a merger that would have resulted in a mere 7.5 percent market share because of a trend toward concentration in the market, has effectively been abrogated. *See* United States v. Rockford Mem'l Corp., 898 F.2d 1278, 1282-83 (7th Cir. 1990).

runs around mistaken rules long before they were formally overruled.[229] Fourth, it is not the case that free-market forces will always undo anticompetitive harms within a reasonable time. Indeed, some network-effect-driven markets have shown themselves to be resistant to displacement of the incumbent monopolists.[230]

These considerations lead us to believe that a one-size-fits-all error rule is nonoptimal and that courts and enforcers should deviate from erring on the side of underenforcement in some situations. We explored a variety of challenged business practices and indicated how analysis ought to be conducted with sensitivity to the deficiencies underlying contemporary error rules. Were antitrust enforcers, courts, and academics to be mindful of these nuanced points, we would be less likely to bear witness to damaging instances of divergence of the kind that have recently afflicted the agencies.[231] Increasingly sophisticated error rules would lay a solid foundation for further evolution in antitrust law.

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229. *See supra* note 96 and accompanying text.
230. *See supra* note 99 and accompanying text.
231. *See supra* Part II.B.2.