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THE INEFFICIENCY OF QUASI-*PER SE* RULES: REGULATING INFORMATION EXCHANGE IN EU AND U.S. ANTITRUST LAW

Kenneth Khoo[*] *and Jerrold Soh*[**]

It is well understood that the exchange of information between horizontal competitors can violate competition law provisions in both the European Union and the United States; namely, Art 101 TFEU and Section 1 of the Sherman Act. However, despite ostensible similarities between EU and U.S. antitrust law concerning inter-firm information exchange, substantial differences remain. In this article, we make a normative argument for the U.S. antitrust regime's approach, on the basis that the United States' approach to information exchange is likely to be more efficient than the relevant approach under the EU competition regime. Using economic theories of harm concerning information exchange to understand the imposition of liability in relation to "stand-alone" instances of information exchange, we argue that such liability must be grounded on the conception of a prophylactic rule. We characterize this rule as a form of ex ante regulation and explain why it has no ex post counterpart in antitrust law. In contrast to the U.S. antitrust regime, we argue that the implementation of such a rule pursuant to EU competition law leads to higher error costs without a significant reduction in regulatory costs. As a majority of jurisdictions have competition law regimes that resemble EU competition law more closely than U.S. antitrust law, our thesis has important implications for competition regimes around the world.

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INTRODUCTION

Rapid technological innovation over the past few decades has led to an exponential increase in the ability of firms to store, transmit, and process information. Hilbert et al. estimate that from 1986 to 2007 the world's capacity for bidirectional telecommunication has grown by almost twenty-eight percent per year. [1] In contemporary commerce, firms often rely on live, readily accessible data and information from other firms in making important business decisions.[2]

For antitrust specialists, the exchange and use of information between horizontal competitors demands additional scrutiny,[3] as it is closely related to the competitive structure of the market in which these firms compete.[4] The relationship is an involved one—information exchange has ostensibly conflicting effects on the level of competition in a given market.[5] For example, while the existence of competitive markets is consistent with the free exchange of information between firms and consumers, it is also uncontroversial that the exchange of price-sensitive information may facilitate collusion between competing firms.[6] This complex relationship mirrors

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[1] Martin Hilbert & Priscila López, *The World's Technological Capacity to Store, Communicate and Compute Information*, 332 SCIENCE 60, 63 (2011) (illustrating in a table how the compound annual growth rate of telecommunications has grown by twenty-eight percent a year).

[2] For example, institutional investors often rely on readily available information from financial data providers to determine their portfolio compositions. *See* Eugene F. Fama et al., *The Adjustment of Stock Prices to New Information*, 10 INT'L ECON. REV. 1, 20 (1969) (noting empirical evidence that investors act on the information implications of a stock split almost immediately after the announcement date, supporting the conclusion that stock prices adjust very rapidly to new information).

[3] In this paper, we will use the terms "competition law" and "antitrust" as equivalent synonyms for each other. However, when referring to the European Union we will preference the "competition law" term over "antitrust;" the reverse will hold true for the U.S. regime. *See* ALISON JONES & B.E. SUFRIN, EU COMPETITION LAW: TEXT, CASES AND MATERIALS 3 (6th ed. 2016) (noting that in general parlance competition law is often called by its American name, "antitrust law"). Our article also focuses on "stand-alone" instances of information exchange. As will be explained, such initiatives should be distinguished from instances where the trier of fact uses information exchange (that may or may not come in the form of inter-firm communications) as an evidentiary tool to infer an agreement or concerted practice under either U.S. antitrust or EU competition law. We do not deny the validity of the latter. *See infra* Part II.E.1.

[4] *See* MASSIMO MOTTA, COMPETITION POLICY: THEORY AND PRACTICE 150 (2004) (emphasizing the role of information exchange in improving the observability of prices and quantities, and the sustainability of collusion).

[5] In this paper, we use the term "information exchange" as an equivalent synonym for "information sharing." Both terms refer to bilateral or multilateral conduct, as opposed to facilitating practices that may comprise instances of unilateral behavior (such as unilateral invitations to collude). *See* ANDREW I. GAVIL ET AL., ANTITRUST LAW IN PERSPECTIVE: CASES, CONCEPTS, AND PROBLEMS IN COMPETITION POLICY 396–97 (2002) (noting the distinction between unilateral practices that might facilitate coordination as opposed to practices that are adopted by agreement). A "facilitating practice" is "an activity that makes it easier for parties to coordinate price or other behavior in an anticompetitive way." *See* PHILLIP AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW 1407B (2nd ed. 2003). A facilitating practice makes tacit collusion more likely to occur, and makes tacit collusion more effective. *See id.* Judge Posner first coined the term in Richard A. Posner, *Information and Antitrust: Reflections on the Gypsum and Engineers Decisions*, 67 GEO. L.J. 1187, 1196–97 (1978). It has subsequently enjoyed extensive use by U.S. antitrust scholars, lawyers, and judges.

[6] *See generally* Matthew Bennett & Philip Collins, *The Law and Economics of Information Sharing: The Good, the Bad and the Ugly*, 6 EUR. COMPETITION J. 311, 315, 320 (2010) ("Well-informed and confident

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the approach that both the European Union (EU) and United States (U.S.) antitrust regimes have adopted. While many forms of information exchange between competitors are pro-competitive and unlikely to infringe antitrust law, other types of information exchange will raise competition concerns and may amount to violation of the law.[7] However, despite ostensible similarities between EU and U.S. antitrust law concerning inter-firm information exchange, the two regimes diverge substantially regarding the liability imposed upon firms for information exchanges. Firms face a far greater risk of liability for such exchanges under the EU competition regime as compared to its U.S. counterpart. Under the EU competition regime, many forms of information exchange are subject to a presumption of illegality, which may be difficult for the firm laboring under the presumption to rebut.[8] In contrast, under the U.S. antitrust regime, most forms of information exchange are subject to a "rule of reason" analysis that places the burden of establishing anti-competitive effects on the party alleging illegality.[9]

This divergence should not come as a surprise. For many years, antitrust scholars have noted that relative to the U.S., EU competition law tends to err on the side of over-enforcement.[10] A common reason given is that unlike U.S. antitrust law, EU competition law endorses a far more pluralistic approach in determining the legitimate objectives that it should pursue.[11] One such objective is the concept of "ordoliberalism," where competition is seen as an end in itself and not merely as a tool to achieve economic efficiency.[12] For example, an ordoliberal regime would err on the side of preventing "Type II" errors as opposed to "Type I" errors[13]—conduct that

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consumers can play a key role in promoting vigorous competition between firms. . . . The primary way in which information sharing can harm consumers is if it has the effect of facilitating coordination. Specifically, it can play a role in allowing firms to engage in, and sustain, tacit or explicit coordinated behaviour.").

[7] This is discussed in more detail later in *infra* Part I.

[8] *Infra* Part I.A.2.

[9] *Infra* Part I.A.1.

[10] JONES & SUFRIN, *supra* note 3, at 45–46 ("The Commission and the EU Courts have been subjected to much criticism over the years for failing to take a sufficiently economically rigorous approach to the application of the provisions and for instead adopting a 'form-based approach.' This means prohibiting certain agreements or conduct as a matter of course because they are presumed to be anti-competitive, without examining their actual or likely effects in the particular case.").

[11] Ioannis Lianos, *Some Reflections on the Question of the Goals of EU Competition Law*, *in* HANDBOOK ON EU COMPETITION LAW: SUBSTANTIVE ASPECTS 1, 32 (Ioannis Lianos & Damien Gerardin eds., 2013) (noting that the current state of case law of the European courts casts doubt on the appeal of the theory of a unitary objective and may indicate that EU competition law adheres to goals pluralism).

[12] Wernhard Möschel, *Competition Policy from an Ordo Point of View*, *in* GERMAN NEO-LIBERALS AND THE SOCIAL MARKET ECONOMY 142, 142 (Hans Willgerodt & Alan T. Peacock eds., 1989) ("[C]ompetition policy is primarily oriented to the goal of securing individual freedom of action, from which the goal of economic efficiency is merely derived.").

[13] "Type I" errors ("false positives") refer to the error costs following from wrongful convictions, while "Type II" errors refer to the costs following from wrongful acquittals. *See* Arndt Christiansen & Wolfgang Kerber, *Competition Policy with Optimally Differentiated Rules Instead of "Per Se Rules vs Rule Of Reason,"* 2 J. COMPETITION L. & ECON. 215, 216 (2006).

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potentially harms the competitive process is prohibited even if such conduct can lead to positive welfare efficiencies.[14]

Nevertheless, perhaps as a response to various problems associated with goal pluralism in competition law,[15] EU competition law has moved towards a monist regime focusing on economic welfare. In recent years, as part of a series of reforms which the European Commission (EC) terms the "modernization" of EU competition policy,[16] the EC has promoted the view that EU competition policy should focus on enhancing economic efficiency, which it believes will promote consumer welfare. This effort to stray away from a pluralistic conception of competition policy to an efficiency-based, U.S. style conception[17] of the objectives of competition policy has resulted in significant convergence in antitrust enforcement across both sides of the Atlantic.[18] Given the aforementioned shift in goal prioritization, the normative case for continuing divergence in the regulation of information exchange across the two regimes is, at best, weak.

In this article, we put forth arguments for why the U.S. antitrust regime's approach toward information exchange is likely to be more economically efficient as compared to the relevant approach under the EU competition regime.[19] Drawing on industrial economics literature, we use key economic theories of harm that concern inter-firm information exchange to elucidate a conceptual basis for the imposition of liability in relation to "stand-alone" instances of information exchange. We argue that

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[14] *See* Case 6/72, Europemballage Corp. & Continental Can Co. v. Comm'n, 1973 E.C.R. 215 (where the ECJ held that Art 102 was not only aimed at practices that may cause damage to consumers directly, but also those practices that may impact the functioning of an "effective competition structure"); Case C-95/04 P, British Airways v Comm'n, 2007 E.C.R. I–2331 (where the court reiterated the same).

[15] *See* Pinar Akman, *Searching for the Long-Lost Soul of Article 82 EC*, 29 OXFORD J. LEGAL STUD. 267, 268 (2009) (noting that ordoliberal ideas are essentially inconsistent with the "consumer welfare" approach).

[16] The "modernization" of EU competition law refers to the major reform in the enforcement of EU competition law that accompanied the enactment of Regulation 1/2003 in 2004. These reforms attempt to bring EU competition law in line with modern economic thinking on efficiency and consumer welfare, and encompass changes in the interpretation and application of substantive competition law. The modernization reforms are also known as the "more economic" approach. *See* Philip Lowe, Director-General, Directorate General for Competition, European Comm'n, *Consumer Welfare and Efficiency — New Guiding Principles of Competition Policy?* (Mar. 27, 2007), http://ec.europa.eu/competition/speeches/text/sp2007_02_en.pdf.

[17] Modern day U.S. antitrust policy remains predominantly concerned with the enhancement of economic efficiency and welfare. *See* Joshua D. Wright & Douglas H. Ginsburg, *The Goals of Antitrust: Welfare Trumps Choice Symposium*, 81 FORDHAM L. REV. 2405, 2406 (2012) ("The promotion of economic welfare as the lodestar of antitrust laws to the exclusion of social, political, and protectionist goals transformed the state of the law and restored intellectual coherence to a body of law Robert Bork had famously described as paradoxical. Indeed, there is now widespread agreement that this evolution toward welfare and away from noneconomic considerations has benefitted consumers and the economy more broadly.").

[18] *See* BEN VAN ROMPUY, ECONOMIC EFFICIENCY: THE SOLE CONCERN OF MODERN ANTITRUST POLICY? NON-EFFICIENCY CONSIDERATIONS WITHIN ARTICLE 101 TFEU 2 (2012) ("Times have changed. In recent years, the Commission promotes the view that EU antitrust policy should focus on enhancing economic efficiency, which it believes will promote consumer welfare. This new conception of the objectives of antitrust policy was developed in the US.").

[19] *See supra* note 16. In line with the aforementioned convergence in goal prioritization across both the U.S. and EU competition regimes, we adopt economic efficiency as our normative yardstick.

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such liability must be grounded on the conception of a *prophylactic* rule, which aims to prevent or reduce the probability of *future* economic collusion from arising.[20] We characterize this rule as a form of *ex ante* regulation where liability may be imposed independently of any actual occurrence of economic harm. We also explain why it has no *ex post* counterpart in antitrust law.

Given this characterization of the existing rules, we argue that as compared to its Sherman Act[21] counterpart, the enforcement of prophylactic rules through the statutory medium of Art 101 in the Treaty on the Functioning of the European Union (TFEU) is particularly problematic.[22] Article 101 TFEU and Section 1 of the Sherman Act have been read to encompass two distinct bases of liability[23]—the laws target both *ex post* collusion and the *ex ante* facilitation of such collusion.[24] However, the relatively higher risk of Type I errors associated with *ex ante* regulation has not been internalized by the EU competition regime, with the Court of Justice of the European Union (CJEU)[25] categorizing many information exchange practices as "object-type" infringements that are presumed to harm the competitive process without consideration of how information exchanges should be optimally regulated.[26] We contend that the increase in error costs following from such formalistic rules is likely to outweigh any countervailing decrease in administrative costs. Compounding the problem is the likelihood of arbitrariness in any legal dichotomy separating information exchange practices into object-type infringements and "effect-type" infringements. We posit that these problems arise in EU competition law because of the bifurcated nature of Art 101 TFEU, which results in a disjuncture between liability following a firm's conduct and the economic effects flowing from that conduct.[27]

To the best of our knowledge, our explanation of the problems associated with the implementation of *ex ante* regulation through bifurcated legislation is novel.

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[20] *See infra* Part II.

[21] Sherman Act, 15 U.S.C. § 1 (2012).

[22] *See* Consolidated Version of the Treaty on the Functioning of the European Union, May. 9, 2008, 2008 O.J. (C 115) 47 [hereinafter TFEU]. Article 101 of the TFEU prohibits cartels and other agreements that could disrupt competition in the European Economic Area's internal market. It plays a similar role to section 1 of the Sherman Act in the United States. *See* Alison Jones, *The Journey Toward an Effects-Based Approach under Article 101 TFEU—The Case of Hardcore Restraints*, 55 ANTITRUST BULL. 783, 785 (2010).

[23] Sherman Act, *supra* note 21, § 1.

[24] Both facilitating practices and explicit collusion are targeted by Art 101 TFEU and section 1 of the Sherman Act. *See infra* Part III. As for the distinction between *ex post* and *ex ante* measures in antitrust, see MOTTA, *supra* note 4, at 190, who distinguishes between interventions which target existing collusive practices (*ex post* measures) and interventions which help prevent collusive practices (*ex ante* measures). *See also* Steven Shavell, *Liability for Harm Versus Regulation of Safety*, 13 J. LEGAL STUD. 357, 357 (1984) and *infra* Part II.

[25] The CJEU comprises both the Court of Justice (ECJ), and the General Court (GC) (formerly known as the Court of First Instance (CFI)). In competition cases the ECJ hears appeals from the GC. *See* JONES & SUFRIN, *supra* note 3, at 97 (setting out the structure of the court).

[26] As we will explain later, "object-type" infringements in the EU competition regime are analogous to "*per se*" infringements in the U.S. antitrust regime. However, a defendant firm facing an allegation of an object-type infringement may be able to rebut the presumption of illegality with the requisite evidence. *See infra* Part III.

[27] *See infra* Part III.E.

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Although issues with Art 101 TFEU have been canvassed in prior work,[28] this article is the first to formally characterize the conceptual basis for these problems. Identifying *why* they arise puts us in a position to propose a targeted solution. Our examination of the rules regarding information exchange also has general implications for the use of economic reasoning in antitrust. While we support the extensive use of economics in contemporary antitrust as a methodological tool, our article highlights the limits of economic analysis in the face of interpretative constraints.[29] Indeed, a central corollary of our paper is that a "rule of reason" type of analysis as pursued by the U.S. antitrust regime is normatively more desirable from an efficiency perspective for the regulation of facilitating practices in competition law.[30] As the competition regimes in a majority of jurisdictions resemble EU competition laws more closely than U.S. antitrust laws, our thesis has important implications for competition regimes around the world.[31]

The article proceeds as follows. Part I reviews the role of Art 101 TFEU and section 1 of the Sherman Act in regulating information exchange and discusses an important distinction between "economic" and "legal" collusion. It then distinguishes stand-alone instances of information exchange from instances where information exchange is used as an evidentiary medium to infer collusion. Part II characterizes the conceptual basis for imposing liability with regard to stand-alone instances of information exchange. It argues that such liability must be grounded on the conception of a prophylactic rule, and discusses several implications that follow from this characterization. In Part III, we provide an extended critique of the EU competition regime's approach with regard to information exchange that follows from our observations in Parts I and II. Part IV concludes.

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[28] *See generally* OKEOGHENE ODUDU, THE BOUNDARIES OF EC COMPETITION LAW (2006).

[29] By "interpretative constraints," we refer to the notion that the CJEU is not free to disregard the wording of treaty provisions where it sees fit. *See* Gunnar Beck, *The Macro Level: The Structural Impact of General International Law on EU Law: The Court of Justice of the EU and the Vienna Convention on the Law of Treaties*, 35 Y.B. EUR. L. 484, 490 (2016) ("Article 31 makes clear that the text must be the starting point of judicial interpretation and that the words in the text must be given their ordinary meaning.").

[30] *See infra* Part III.A.

[31] Anu Bradford et al., *The Global Dominance of European Competition Law over American Antitrust Law* 20 (Jul. 2, 2019), https://ssrn.com/abstract=3339626 ("[T]here has been a large increase in the proportion of laws that resemble the EU. In 1960, 0% of countries had language resembling the new EU competition law. But by 2010, 51% of countries had laws that resemble the EU. In contrast, 22% of countries had laws that resembled the US in 1960, but that number had dwindled to 10% in 2010.").

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I. ANTITRUST AND INFORMATION EXCHANGE

In this part, we set out the theoretical foundations for our subsequent analysis. We first explore two definitions of collusion in law and in economics, noting an important distinction between the two where tacit collusion is concerned. We go on to explain economic theories of harm behind instances of information exchange, drawing attention to their nature as facilitating practices. Finally, we argue that both the U.S. and EU competition regimes establish independent grounds on which liability for stand-alone instances of information exchange may be established.

A. The Legal Definition of Collusion

Where exchanges of information between competitors amount to anti-competitive infringements in EU competition law or U.S. antitrust law, liability must be established under the respective provisions regulating horizontal relationships between firms, namely section 1 of the Sherman Act and Article 101 of the TFEU respectively.[32]

1. Section 1 of the Sherman Act

Section1 of the Sherman Act prohibits "every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States."[33] The literal wording of the Sherman Act is, however, untenable insofar as "every" contract that restrains trade would be unlawful.[34] As Justice Brandeis noted in *Board of Trade v. United States*,[35] restraint is the very essence of every contract—read literally, section 1 would outlaw a substantial body of private contract law.[36] The literal reading of the Sherman Act thus raises an intractable conundrum, since it is contract law that ensures the enforceability of commercial agreements and enables competitive markets to function effectively.[37]

The U.S. courts have responded to the problems associated with such textualism by re-interpreting the statute's broad mandate in line with the common law tradition. As Justice Stevens said in *National Society of Professional Engineers v. United States* (*NPSE*):

[32] As we will discuss in Part II, the conceptual basis for the imposition of liability for (stand-alone) instances of information exchange is quite different from that of the imposition of the same for instances of explicit collusion.

[33] Sherman Act, *supra* note 21, § 1.

[34] *See* GAVIL ET AL., *supra* note 5, at 102–03 ("A prohibition of 'every' agreement that restrained trade would encompass a full range of common, competitively insignificant or beneficial business arrangements, including most business partnerships and joint ventures, no matter how much they affect competition.").

[35] Bd. of Trade v. U.S., 246 U.S. 231, 238 (1918).

[36] *See also* Nat'l Soc'y. of Prof'l Eng'rs v. U.S. (*NPSE*), 435 U.S. 679, 688 (1978).

[37] *See* Alan Schwartz & Robert E. Scott, *Contract Theory and the Limits of Contract Law*, 113 YALE L.J. 541, 548 (2003) ("The creation of a contract law has become an important priority in many countries that have made a new (or renewed) commitment to markets, for there is a consensus that a good contract law is a necessary condition for a modern commercial economy.").

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> Congress … did not intend the text of the Sherman Act to delineate the full meaning of the statute or its application in concrete situations. The legislative history makes it perfectly clear that it expected the courts to give shape to the statute's broad mandate by drawing on common-law tradition. The Rule of Reason, with its origins in common-law precedents long antedating the Sherman Act, has served that purpose. It has been used to give the Act both flexibility and definition, and its central principle of antitrust analysis has remained constant. Contrary to its name, the Rule does not open the field of antitrust inquiry to any argument in favor of a challenged restraint that may fall within the realm of reason. Instead, it *focuses directly on the challenged restraint's impact on competitive conditions*.[38]

The U.S. courts went on to develop two complementary categories of antitrust analysis. While not explicitly carved out by the wording of the Sherman Act, the "*per se*" category covers "agreements whose nature and necessary effect are so plainly anticompetitive that no elaborate study of the industry is needed to establish their illegality."[39] In contrast, the "rule of reason" category is associated with "agreements whose competitive effect can only be evaluated by analyzing the facts peculiar to the business, the history of the restraint, and the reasons why it was imposed."[40]

For our purposes, the context in which information exchange is examined under the Sherman Act is important for two reasons. First, in *United States v. United States Gypsum Co.*,[41] the Court held that information exchanges in and of themselves should not be subject to *per se* condemnation:

> The exchange of price data and other information among competitors does not invariably have anticompetitive effects; indeed such practices can in certain circumstances increase economic efficiency and render markets more, rather than less, competitive. For this reason, we have held that such exchanges of information do not constitute a *per se* violation of the Sherman Act. A number of factors including most prominently the structure of the industry involved and the nature of the information exchanged are generally considered in divining the

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[38] *NPSE*, 435 U.S. at 688 (emphasis added).

[39] *Id. See also* GAVIL ET AL., *supra* note 5, at 181 (noting that if an agreement falls into a recognized *per se* category, liability is established once such an agreement is proved. In essence, anticompetitive effects are presumed and all defenses (i.e. attempts to demonstrate reasonableness) are precluded.).

[40] NPSE, 435 U.S. at 688. *See also* GAVIL ET AL., *supra* note 5, at 284–85 (explaining that the rule of reason is a flexible rule that integrates "burden-shifting"—the plaintiff bears the initial burden of putting forth evidence tending to demonstrate anticompetitive effects (creating a presumption of liability), but that burden can be satisfied in a variety of ways. In turn, the defendant may have a burden to rebut that presumption of harm either by undermining the evidence that supports the presumption or by adducing evidence tending to show that the conduct will have no effects or will be procompetitive. The form in which such an inquiry is carried out depends on the circumstances of the case at hand.). *See infra* Part III.

[41] U.S. v. United States Gypsum Co., 438 U.S. 422 (1978).

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> procompetitive or anticompetitive effects of this type of interseller communication.[42]

The rule applies even when competitors agree to exchange information on future prices—while the agreement would likely amount to an antitrust violation, it is nevertheless not illegal *per se* and would be judged by a reasonableness standard.[43] The second reason follows from the first. For an alleged violation of antitrust law that does not invoke *per se* illegality, the scope of evidence that the defendant is allowed to raise in rebutting the plaintiff's case is very wide. Provided that the defendant's rebuttal is directed at the issue of competitive effects, there are few, if any, limitations on the type of evidence that the defendant is allowed to adduce.[44] As we will explain in the following section, EU competition law departs from the aforementioned positions in U.S. antitrust law.

2. Art 101(1) and Art 101(3) TFEU

Unlike section 1 of the Sherman Act, Art 101 TFEU has a bifurcated structure, comprising two components dependent on each other.[45] First, Art 101(1) TFEU *prima facie* prohibits "agreements between undertakings, decisions by associations of undertakings, and concerted practices which may affect trade between Member States and which have as their *object* or *effect* the prevention, restriction or distortion of competition within the common market."[46] Art 101(1) TFEU itself requires that an agreement or concerted practice must first be proven and thereafter shown to have some anti-competitive object *or* effect.[47] However, unlike the Sherman Act, substantive analysis of firm conduct under Art 101 is not limited to the objects or effects analysis

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[42] *Id.* at 441 n.16 (citations omitted).

[43] OECD Directorate for Financial and Enterprise Affairs, Competition Committee, Information Exchanges Between Competitors Under Competition Law, DAF/COMP (2010)37, at 11 (Jul. 11, 2011) (*prepared by* Antonio Capobianco, OECD Secretariat) (noting that exchanges of information on future pricing intentions carry the greatest risk).

[44] However, U.S. courts have made clear that ruinous competition, like reasonable prices, would not constitute a cognizable defense. *See* U.S. v. Trenton Potteries Co., 273 U.S. 392 (1927). Similarly, *NPSE* reaffirmed that defenses rooted in the premise that competition could lead to undesirable results (in the form of lower quality engineering services) were not cognizable. *See NPSE*, 435 U.S. 679 (1978). Beyond these limitations, however, the specific requirements of burden shifting remain unaddressed. Gavil et al. justify these exceptions on the basis that they did not tend to diminish the likelihood that the (net) anticompetitive effects would occur, but instead sought to excuse them. GAVIL ET AL., *supra* note 5, at 253. *Cf.* the equivalent approach in the European Union where the defendant not only has to establish specific benefits under Art 101(3), but also has the burden of establishing other requirements like that of allocating consumers a fair share of the benefit, and the requirement that the agreement does not contain any indispensable restrictions. *See infra* Part III.C.

[45] Alison Jones & William E Kovacic, *Identifying Anticompetitive Agreements in the United States and the European Union: Developing a Coherent Antitrust Analytical Framework*, 62 ANTITRUST BULL. 254, 278 (2017) ("This structure means that the question of how restrictions of competition are identified at the Article 101(1) stage profoundly influences the role and scope of Article 101(3).").

[46] TFEU, *supra* note 22, art. 101(1) (emphasis added).

[47] Numerous EU cases have established that the words "object or effect" are disjunctive conditions. *See, e.g.,* Case C-56/65, Société Technique Minière v Maschinenbau Ulm, 1966 E.C.R. 235, 249; Case C-234/89, Delimitis v Henninger Bräu, 1991 E.C.R. I–935, ¶ 13; Joined cases T-374/94, T-375/94, T-384/94 and T-388/94, European Night Services v Comm'n, 1998 E.C.R. II–3141, ¶ 136.

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in Art 101(1). The second stage of the analysis is found in Art 101(3) TFEU, which excludes from the scope of Art 101(1) any agreement that provides specific benefits, allows consumers a fair share of the benefit, does not contain any indispensable restrictions, and does not eliminate competition in a substantial part of the products in question.[48]

The bifurcated structure of Art 101 has led to extensive debate regarding the appropriate role for each part. Jurists, competition authorities, and courts alike have struggled to find the right balance between the application of Art 101(1) and Art 101(3).[49] One major issue that arises from a literal reading of Art 101 is the ostensible requirement to conduct some kind of economic assessment when applying Art 101(1). Like section 1 of the Sherman Act, a presumption of illegality is drawn from conduct that "reveals in itself a sufficient degree of harm to competition law." Such conduct is said to have its "object" the restriction of competition.[50] This quasi-*per-se* rule has a rule of reason counterpart as well—conduct that does not fall under the "object" limb of Art 101(1) would be analyzed under the "effect" limb instead. However, applying a full-blown rule of reason approach to effect-type cases where anti-competitive and pro-competitive effects are balanced raises the obvious objection that Art101(3) would be rendered redundant.[51]

A number of proposals have been made to reconcile Art 101(1) and Art 101(3).[52] One approach is to adopt a broad interpretation of Art 101(1) that encapsulates many agreements within its scope.[53] Under this approach, any detailed analysis of the anti-competitive and pro-competitive aspects of the agreement would be conducted under Art 101(3). Art 101(1) would thus serve a merely jurisdictional function; rigorous substantive assessment is completed under Art 101(3). A second approach is to conduct a more detailed analysis when determining whether an agreement restricts competition under Art 101(1), while limiting the scope of Art 101(3) to exempt agreements that are *prima facie* anti-competitive but nevertheless have demonstrable policy benefits.[54] A third approach associates categorical forms of efficiency with the two limbs.[55] For example, Art 101(1) could be concerned with allocative efficiency related to deadweight losses arising from restrictions of output, while Art 101(3) could be limited to issues of productive and dynamic efficiency

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[48] TFEU, *supra* note 22, art. 101(3).

[49] *See* JONES & SUFRIN, *supra* note 3, at 183 ("The bifurcated structure of Article 101 has, to some extent, complicated its interpretation and led to uncertainty as to the correct role for, and analysis required by, each part.").

[50] *See* Case C-67/13 P, Groupement des Cartes Bancaires v Comm'n (*Cartes Bancaires*), 2014 EUR-Lex CELEX 62013CJ0067 ¶ 57 ("[T]he essential legal criterion for ascertaining whether coordination between undertakings involves such a restriction of competition 'by object' is the finding that such coordination reveals in itself a sufficient degree of harm to competition.").

[51] GIORGIO MONTI, EC COMPETITION LAW 30 (2007) ("[A]n economic welfare interpretation of Article [101](1) would mean either that Article [101](3) is irrelevant (in which case the advocates of a rule of reason fail to offer a solution which is compatible with the legal text).").

[52] JONES & SUFRIN, *supra* note 3, at 183 (explaining the three major approaches to reconciling articles 101(1) and 101(3) TFEU).

[53] *Id.*

[54] *Id.*

[55] *Id.*

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independent of allocative efficiency concerns.[56] Indeed, this third approach is commonly invoked in merger regulation, where firms concede losses in static efficiency while arguing that productive and dynamic efficiency gains outweigh static inefficiencies from output reduction.[57]

The appropriate reconciliation of these approaches is beyond the scope of this article. For our purposes, we only point out that all of them have problems.[58] The first approach, for example, raises the specter of over-enforcement. Under Art 101(3), a defendant firm bears the burden of proof, not only of establishing the "specific benefits" under Art 101(3), but also other requirements such as allocating consumers a fair share of the benefit, and the requirement that the agreement does not contain any indispensable restrictions.[59] Given the significant difficulty of discharging one's burden of proof under Art 101(3), some pro-competitive behavior will likely be wrongly condemned as anti-competitive under Art 101(1).[60]

The treatment of information exchanges under the TFEU lies in stark contrast to the U.S. regime approach. Contemporary EU competition law prohibits certain instances of information exchange as object-type infringements, essentially regulating them pursuant to a quasi-*per se* rule.[61] As we will discuss in Part IV, this departure has significant implications on economic efficiency.

Despite the structural differences between section 1 of the Sherman Act and Art 101 TFEU, both provisions aim to serve the similar function of differentiating between pro-competitive and anti-competitive concerted conduct.[62] For decades, both the EU and U.S. courts have contended with the difficult substantive task of distinguishing between legal and illegal forms of concerted action.[63] Nevertheless, it is now well

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[56] Odudu first suggested this approach in THE BOUNDARIES OF EC COMPETITION LAW. *See* ODUDU, *supra* note 28.

[57] JONES & SUFRIN, *supra* note 3, at 1163 ("[A]n [efficiency] defence would redeem a concentration which increases concentration and market power, but which results in significant cost savings and economies of scale"); *Id.* at 1166 ("Recital 29 of the EUMR now provides that it is possible that the efficiencies brought forth by the concentration counteract the effects on competition, and in particular the potential harm to consumers, that it might otherwise have . . . as a consequence, the concentration would not significantly impede effective competition.").

[58] Jones and Sufrin note that neither the CJEU nor the EC's interpretative framework equates to any of the three approaches outlined. However, the modern approach most closely resembles the third approach. *Id.* at 184.

[59] TFEU, *supra* note 22, art. 101(3).

[60] *See infra* Part III.C.

[61] *See* Case T-141/94, Thyssen Stahl v Comm'n, 1999 E.C.R. II–347; Case C-8/08, T-Mobile Netherlands BV v. Raad van Bestuur van de Nederlandse Mededingingsautoriteit, 2009 E.C.R. I–4529; Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-operation Agreements, Jan. 14, 2011, 2011 O.J. (C 11) 1 [hereinafter Horizontal Guidelines].

[62] Both section 1 of the Sherman Act and Art 101 TFEU target concerted action as opposed to unilateral conduct. *See* GAVIL ET AL., *supra* note 5, at 279 ("§ 1 of the Sherman Act and Art 101 TFEU . . . attach special significance to conduct involving 'concerted' action. . . . § 1 of the Sherman Act imposes no liability on firms that act alone. . . . Single firm conduct is addressed instead under § 2. . . . Similarly, Art 101 only applies to 'all agreements between undertakings, decisions by undertakings and concerted practices,' whereas Art 102 is directed at single-firm conduct.").

[63] For example, commentators and courts have vigorously debated whether informal coordination between firms should amount to a violation of section 1 of the Sherman Act. *See* GAVIL ET AL., *supra* note 5, at 280–81 (noting that the common nature of the effects of tacit and express collusion triggered

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settled that both jurisdictions prohibit all forms of concerted action that amount to "collusive" conduct.[64] In general, it is known that explicit collusion between undertakings attracts liability in antitrust because of its adverse effects on economic efficiency.[65] The inferential process here is instrumentalist—Art 101 TFEU and section 1 of the Sherman Act aim to prohibit collusion as a form of anti-competitive conduct, but *only* because of its negative effects on economic welfare.[66]

B. The Economic Definition of Collusion

Using antitrust as an instrumental tool to achieve economic welfare raises the difficult question of whether the reverse implication—that liability follows from a reduction in welfare—can be made. If liability is to turn on the welfare effects flowing from a given course of conduct, the definition of collusion could be expanded to encompass any state of affairs whereby certain conduct results in a decrease in welfare vis-à-vis a counterfactual where the conduct does not take place.[67] While this does not reflect the current state of the law in both the European Union and United States,[68] it seems to reflect the economist's view of collusion —here, "economic collusion" refers to the situation where firms in a given industry have prices that are higher than some competitive benchmark.[69] On the other hand, when legal scholars speak of collusion, it is often used as a synonym for concerted action, which implies some form of *communication* between the firms concerned.[70] The economist's definition is notably independent of this requirement. Importantly, "economic collusion" and "legal collusion" are distinct concepts, as each can exist without the presence of the other.[71]

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an extensive debate as to whether tacit coordination fell short of the law's definition of an "agreement"). *See also infra* Part I.C.

[64] By "collusive" conduct, we mean that both section 1 of the Sherman Act and Art 101 TFEU prohibit explicit collusion that involves communication between firms *inter se*. For example, price-setting cartels would violate both section 1 of the Sherman Act and Art 101 TFEU. *See U.S. v. Andreas*, 216 F.3d 645, 645 (7th Cir. 2000); COMP/37.512 *Vitamins* [2003] OJ L6/1 ¶ 554.

[65] MOTTA, *supra* note 4, at 18 (noting that as prices increase, economic welfare decreases as the increase in profits made by the firms do not compensate for the associated reduction in consumer surplus).

[66] We do not deny that competition policy may advance pluralistic objectives. However, the advancement of economic (or more specifically, consumer) welfare remains the predominant objective advanced by both the EU and U.S. regimes. The influence of contemporary industrial economics on competition law and antitrust is particularly apposite here. *See* Akman, *supra* note 15, at 268 (noting that ordoliberal ideas are essentially inconsistent with the consumer welfare approach).

[67] MOTTA, *supra* note 4, at 18.

[68] *See infra* Part III.A.1 and 2.

[69] MOTTA, *supra* note 4, at 138. Note that where firms are competing in price, the competitive benchmark would be the equilibrium price of a game where firms meet only once in the marketplace, a situation where a collusive equilibrium would not be sustainable. In such a setting, any given firm will play a non-cooperative action. *See* HAL R. VARIAN, INTERMEDIATE MICROECONOMICS: A MODERN APPROACH 527–29 (2014).

[70] MOTTA, *supra* note 4, at 138. For now, it is sapient to treat the legal scholar's definition of collusion as a synonym for a "economically collusive agreement or practice that should be outlawed." *Id.* Thus, the legal scholar's definition of collusion used here is a subset of the economist's definition.

[71] For example, a state of tacit collusion amounts to "economic collusion" but not "legal collusion." *See infra* Part I.C. On the other hand, an anti-competitive agreement that is not implemented may amount to legal collusion, but such conduct may not result in economic collusion. *See* JONATHAN FAULL & ALI

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While a mere decrease in economic welfare does not entail antitrust liability, it is important to set out a theoretical framework concerning economic collusion insofar as antitrust attempts to respond to the adverse effects on economic efficiency that result from economic collusion.[72] As we argue below, the differential treatment of distinct forms of economic collusion is critical to our argument that the rule prohibiting information exchange is prophylactic in nature.[73]

Contemporary industrial economics informs the scope of competition law by highlighting the inherent instability of economic collusion even in the absence of laws forbidding anti-competitive practices.[74] Based on game-theoretic oligopoly theory, economists view market play between competitors as a game where competing firms are rational players in the market, attempting to maximize their profits.[75] An equilibrium of the game is defined as a state of affairs where each player plays its best strategy given what the other player plays, such that no player has an incentive to unilaterally deviate from his existing strategy.[76] For example, in the context of oligopolistic markets, each firm (player) may compete by deciding on the particular price it will adopt. Economists have shown that when price-setting firms interact with each other in a static (one-off) setting, each firm will choose to set the competitive price as its dominant strategy, even if few firms are in the market.[77] Although both firms would be better off if every firm set the supra-competitive monopoly price, were this the case, each firm would have an incentive to deviate by instead setting a price below this supra-competitive price to capture the market shares of its competitors.[78] Thus, every firm knows that any price it sets above the supra-competitive price would be undercut by its competitors. In equilibrium, every firm would therefore simply set prices at the competitive level.[79]

However, when firms interact with each other repeatedly, they have an opportunity to retaliate, thereby punishing deviations (i.e., a reduction in price) by other firms in subsequent rounds.[80] A simple example is the "grim trigger" strategy, where a firm commits to reducing its own prices to the competitive level in all subsequent games

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NIKPAY, THE EC LAW OF COMPETITION 206 (2014) (noting that under EU competition law, an agreement is reached even if one or more of the undertakings involved intends to ignore its provisions).

[72] *See supra* note 16.

[73] *See infra* Part I.E.1 and 2.

[74] *See generally* JEAN TIROLE, INDUSTRIAL ORGANIZATION 239–74 (1988).

[75] The theory of collusive equilibria across repeated games was built across several seminal papers in game theory. *See generally* DREW FUDENBERG & JEAN TIROLE, GAME THEORY (1991); John F. Nash, *The Bargaining Problem*, 18 ECONOMETRICA 155 (1950); James W. Friedman, *A Non-cooperative Equilibrium for Supergames*, 38 REV. ECON. STUD. 1 (1971); Dilip Abreu, *On the Theory of Infinitely Repeated Games with Discounting*, 56 ECONOMETRICA 383 (1988).

[76] VARIAN, *supra* note 69, at 524–25.

[77] *Id.* at 527–29.

[78] *Id.*

[79] Although Varian considers competition in quantities, we consider competition in prices (i.e., Bertrand Competition). The game theoretic analysis remains invariant to the mode of competition considered. *Id.* at 512, 527–29.

[80] *Id.* at 531.

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once any competitor has deviated.[81] In other words, all future rounds would be played at the competitive-price equilibrium.[82] A competitor considering whether to deviate in the present round would then have to consider whether the short-term profits from an individual price reduction in the present round would compensate for all the profits it foregoes in all future rounds.[83] If the additional present profits earned from deviating do not outweigh the discounted present value of all foregone future profits, the prospective deviator will be reluctant to deviate, and supra-competitive prices will be maintained as a result.[84] This coordinated maintenance of supra-competitive prices is the essence of economic collusion. An examination of the sustainability of economic collusion is thus based on the so-called "incentive compatibility constraint"—each firm compares the short-term profits it makes from a deviation with the profits it gives up in future when its rivals retaliate.[85] A collusive equilibrium will only arise if the former is lower than the latter.[86]

In light of the above analysis, to successfully collude, competing firms must overcome three obstacles. First, they have to reach a common understanding of the terms of coordination. Second, they should be able to monitor adherence to those terms of coordination.[87] Third, they should be able to effectively punish firms that deviate from the terms of coordination.[88] The first factor relates to the ability of competing firms to reach a collusive equilibrium, while the latter two factors relate to the ability of the competing firms to sustain that collusive equilibrium. The relationship between these factors and information exchange is an important concept that we will return to later in Part ID below.

C: The Posner-Turner Debate—Tacit Collusion and Conscious Parallelism

Differing views over the scope of illegal collusion in competition law culminated in what is now known as the "Posner-Turner" debate in U.S. antitrust law.[89] The debate centered on how competition law should treat the phenomenon of tacit collusion—when a collusive equilibrium arises without any form of communication between firms. Recall that in deciding whether to set a supra-competitive price at any point in time, each firm compares the short-term profits it makes from a deviation with the profits it gives up in the future when its rivals retaliate. Suppose that Firm A unilaterally increases its prices by five percent, and Firm B has to decide whether to follow its

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[81] A "grim trigger" strategy describes the following strategy profile: "Cooperate in the first period and continue to cooperate so long as no player has ever defected. If any player has ever defected, then defect for the rest of the game." FUDENBERG & TIROLE, *supra* note 75, at 111.

[82] *Id.*

[83] *Id.* at 246.

[84] *Id.*

[85] MOTTA, *supra* note 4, at 160.

[86] *Id. See also* FUDENBERG & TIROLE, *supra* note 75, at 246.

[87] In other words, they should be able to detect deviations from the terms of coordination.

[88] We adopt these distinctions from Angela O. González, *Object Analysis in Information Exchange Among Competitors*, 14 GLOBAL ANTITRUST REV. 1, 23 (2012).

[89] *See* Richard A. Posner, *Oligopoly and the Antitrust Laws: A Suggested Approach*, 21 STAN. L. REV. 1562 (1968); Donald F. Turner, *The Definition of Agreement Under the Sherman Act: Conscious Parallelism and Refusals to Deal*, 75 HARV. L. REV. 655 (1962).

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pricing.[90] Even without any form of communication between the two firms, a collusive equilibrium can still arise if Firm B decides to follow suit. This could be a logical commercial response if, for example, Firm B expects that a failure to do so would trigger a costly price war that would reduce its own profits, or if Firm B expects that it can increase its profits with the new (higher) industry price.[91]

Two countervailing tensions informed the debate. On one hand, the influence of Robert Bork's work on antitrust provided great deference to the instrumentalist role of competition law in promoting economic efficiency.[92] Pursuant to this view, scholars like Posner and Kaplow have argued that antitrust law ought to respond to the inefficiencies resulting from tacit collusion.[93] On the other hand, legislators were reluctant to prohibit rational business conduct in the absence of evidence proving some type of explicit communication between two or more firms.[94] The practical realities of antitrust law enforcement ultimately settled the debate in favor of the latter approach. The suggestion that behavioral remedies could be used to address rational responses to the structure of the market was viewed as a solution that was close to impossible to implement.[95] By mandating that firms behave irrationally to avoid infringing competition law, an antitrust authority would have to determine an appropriate competitive benchmark in each case—a herculean task given its lack of information concerning any given industry's costs.[96]

Both the EU and U.S. competition regimes endorsed the latter position that Turner advocated. In accordance with the proposition that tacit collusion alone would not be sufficient to establish liability, EU courts have required further extrinsic evidence of communication to establish an instance of illegal collusion. Following an instance of tacit collusion, a clear market outcome that is often observed is the phenomenon of price parallelism, where firms charge similar prices over time.[97] However, the EU

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[90] This example is similar to the one provided by Motta with regard to the sustainability of tacit collusion. *See* MOTTA, *supra* note 4, at 139–40.

[91] *Id.*

[92] Wright & Ginsburg, *supra* note 17, at 2405 ("The economic revolution in antitrust that took hold in the Supreme Court in the late 1970s and the 1980s was brought on at least in part by Robert Bork's analysis of the original understanding of the Sherman Act."). *See also* Robert H. Bork, *Legislative Intent and the Policy of the Sherman Act*, 9 J.L. & ECON. 7 (1966).

[93] Posner, *supra* note 89, at 1575 ("The purpose of section I is to deter collusion by increasing its costs; this suggests that the tacit colluder should be punished like the express colluder. And tacit collusion is voluntary behavior, which should be deterrable by appropriate punishment."); Louis Kaplow, *An Economic Approach to Price Fixing*, 77 ANTITRUST L.J. 343, 448–49 (2011) (criticizing existing antitrust policy that relies on communication as a touchstone of liability). *Cf.* Turner, *supra* note 89, at 666 (noting that it would be unreasonable to interpret the Sherman Act to condemn rational and unavoidable unilateral behavior, even when the economic consequences mirrored that of conspiracy).

[94] Turner, *supra* note 89, at 666.

[95] *See*, for instance, Judge Posner's about-turn in his review of Kaplow's advocacy of his former views. Richard A. Posner, *Review of Kaplow, Competition Policy and Price Fixing*, 79 ANTITRUST L.J. 761, 767 (2014) (Judge Posner opined that he had no "confidence that punishing tacit colluders under antitrust law can produce net social benefits" because there is no "good answer" to the question of what courts should tell firms acting interdependently without communicating to do in order to avoid liability and exposure to damages.).

[96] Turner, *supra* note 89, at 665.

[97] VARIAN, *supra* note 69, at 531–32. However, parallel prices are entirely consistent with competitive behavior, and so additional evidence should be required to establish the existence of an agreement.

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courts have restricted the inferences that the trier of fact may draw from such a market outcome. In particular, collusive activity may only be inferred from evidence of parallel conduct[98] if it constitutes the *sole* plausible explanation for such conduct.[99] In other words, where a finding of collusive activity rests exclusively on observed conduct, parallel conduct cannot be regarded as furnishing proof of collusion where there is another plausible explanation. Such plausible explanations would, of course, include the argument that the parallel conduct was merely a market outcome resulting from the firms involved responding rationally to interdependent market movements.

A clear illustration of this principle is provided in *Ahlstrom Osakeyhtio v. Commission* ("*Wood Pulp II*").[100] In this case, forty wood pulp producers and three of their trade associations were alleged to have infringed Art 101 (then Art 85) TFEU by colluding on price.[101] Although there was explicit evidence that some of the firms belonged to two of the trade associations, the EC went beyond that and found that various firms not involved in the two trade associations had also infringed Art 101 TFEU, an inference from their parallel conduct. In particular, the EC argued that the identical and quasi-simultaneous price announcements made by the firms amounted to parallel conduct that could be explained only by a concerted practice.[102] On appeal, the CJEU annulled this portion of the EC's decision. The CJEU accepted the expert reports the undertakings tendered that the "close succession of price announcements could be explained by the natural operation of the market."[103]

Kaplow, *supra* note 93, at 92 ("[I]t makes no sense to deem parallel pricing . . . as even indicative of oligopolistic price elevation since such activity is ubiquitous and, in particular, characterizes innocent competitive activity.").

[98] It is important to note that evidence of parallel conduct encompasses parallel movements in any parameter of competition (such as output or product quality), not just prices. *See* Horizontal Guidelines, *supra* note 61, ¶ 27 ("[F]or an agreement to have restrictive effects on competition . . . it must have, or be likely to have, an appreciable adverse impact on at least one of the parameters of competition on the market, such as price, output, product quality, product variety or innovation.").

[99] *See* Joined Cases C-89/85, C-104/85, C-114/85, C-116/85, C-117/85 and C-125/85 to C-129/85, Ahlstrom Osakeyhtio v. Comm'n (*Wood Pulp II*), 1993 E.C.R. I–1307, ¶ 71 and Case 48/69, ICI v. Comm'n, 1972 E.C.R. 619, ¶ 65–68 (noting that where collusion is inferred from parallel conduct as the sole plausible explanation for such conduct, the inference of collusion is dependent on extrinsic facts beyond that of the parallel conduct).

[100] *Wood Pulp II*, 1993 E.C.R. I–1307.

[101] *Id.* ¶ 13–15.

[102] *Id.* ¶ 60–61.

[103] In an ordinary instance of tacit collusion, a given firm would respond to its rivals' actions only upon its observation of those actions. This is a process that occurs over a period of time, and is closely related to the transparency of information within the market in question. *See* MOTTA, *supra* note 4, at 150 (Noting that the "detection of deviations is a crucial ingredient for [economic] collusion"). While the EC argued that the close succession of price announcements could be explained only by an illegal concerted practice, in *Wood Pulp II* the ECJ noted that the market for wood pulp had various market features which made it extensively transparent. 1993 E.C.R. I–1307. For instance, rapid information transfer amongst the wood pulp producers could be attributed to the fact that each buyer was in contact with several producers and would have an incentive to reveal prices set by other producers when they were reduced. Furthermore, most wood pulp producers also had downstream operations that purchased some of their input from upstream rivals, and thus would be immediately informed of any price changes by upstream rivals. Common agents who facilitated transactions between buyers and producers worked for numerous producers and expedited the process of price discovery. Hence, it was entirely plausible that tacit

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Similarly, U.S. courts have been exceedingly reluctant to infer liability from evidence of tacit collusion, or conscious parallelism in and of itself. In *Theatre Enterprises*,[104] the Supreme Court considered the conduct of several movie distributors who had collectively refused to allow an exhibitor access to first-run films for showing in a suburban theatre.[105] The defendant distributors denied acting in concert and offered economic justifications as to why each of them had chosen to pursue an identical course of action.[106] Importantly, the defendants alleged that each distributor would maximize profits by limiting access to its downtown theatres, as they offered "far greater opportunities for the widespread advertisement and exploitation of newly released features," thought to be critical in maximizing the overall return from subsequent runs.[107] In sustaining the jury's verdict for the defendants, the Supreme Court noted that "circumstantial evidence of consciously parallel behavior may have made heavy inroads into the traditional judicial attitude towards conspiracy, but 'conscious parallelism' has not read conspiracy out of the Sherman Act entirely."[108] Evidence beyond mere parallel conduct would be required to establish liability.[109]

Baker suggests that the prevailing law on tacit collusion is best rationalized by the argument that an agreement is best understood as a process that involves negotiation and the exchange of assurances, in contrast to only an economic outcome.[110] Thus, judicial definitions of agreements that are commonly used in contract law such as "a meeting of the minds" or a "conscious commitment to a common scheme" would be overinclusive, since they would encompass the conduct of consciously parallel interaction among oligopolists.[111] Indeed, it is easy to characterize any form of "follower-leader" behavior as a common understanding—the first price increase by a firm is an offer, and those that follow are acceptances.[112] Each firm observes the others' actions in determining the price it wishes to set.

If mere tacit collusion does not amount to a violation of antitrust law, what is the appropriate touchstone of liability to establish illegal collusion? Our earlier discussion suggested a possible definition. Illegal collusion must contain some kind of active coordination between the two firms—an element of concerted action, which in turn implies that some form of communication between the firms concerned must

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collusion explained the behavior of the firms that were not involved in the two trade associations. *Wood Pulp II*, ¶ 102–05.

[104] Theatre Enter., Inc. v. Paramount Film Distrib. Corp., 346 U.S. 537 (1954).

[105] *Id.* at 538.

[106] *Id.* at 539–40.

[107] *Id.* at 540.

[108] *Id.* at 541.

[109] *Id. See also* Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 227 (1993) (Justice Kennedy stated that "tacit collusion, sometimes called oligopolistic price coordination or conscious parallelism, describes the process, not in itself unlawful, by which firms in a concentrated market might in effect share monopoly power, setting their prices at a profit-maximizing, supracompetitive level by recognizing their shared economic interests and their interdependence with respect to price and output decisions.").

[110] Jonathan B. Baker, *Identifying Horizontal Price Fixing in the Electronic Marketplace*, 65 ANTITRUST L.J. 41, 47–51 (1996).

[111] *Id.* at 47 n.20.

[112] *Id.* at 41, 47.

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exist.[113] Indeed, in situations where antitrust authorities are attempting to establish the existence of an agreement, they tend to rely on evidence of documentation establishing the agreement between the firms, or on conduct that allows an agreement to be directly inferred from that conduct.[114] As the exchange of information between horizontal competitors necessarily entails communication between the firms, it is to the latter concept that we now turn.[115]

D: How Information Exchange Facilitates Collusion—Theories of Harm

Consider a typical instance of a naked price-fixing agreement amongst several firms.[116] In order to sustain a collusive equilibrium in relation to a common price, the firms in question would have to first achieve unanimous consensus in selecting a particular price to set.[117] Where explicit communications between firms take place, cartel price-setting usually proceeds by way of negotiation. Information exchange in this instance serves an enabling function, allowing the firms to agree on a price that would be potentially profitable for all of them.[118] This is particularly important where firms in the industry have differing cost structures, as prices that are profitable for some firms may not be profitable for others.[119]

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[113] MOTTA, *supra* note 4, at 189 ("[T]he legal approach which requests some hard evidence as proof of collusion is sensible practice. . . . [F]irms should be convicted for anti-competitive behavior only insofar as there is proof that they have communicated with each other to sustain collusion."); Kaplow, *supra* note 93, at 448–49 (noting that contemporary antitrust policy relies on communication as a touchstone of liability).

[114] Such communication may extend beyond firms directly communicating to each other (e.g. through electronic mail or post) what market actions should be taken. Indirect or implied communications such as taking reciprocal actions may also suffice in signaling acceptance of and/or participation in the collusion. *See* VARIAN, *supra* note 69, at 531–32. For example, in Case C-277/87, Sandoz Prodotti Farmaceutici v. Comm'n 1990 E.C.R. I–45, the ECJ held that the tacit acceptance of a term that prohibited exports by a number of customers could be inferred from renewed orders placed without protest on the same terms.

[115] In this paper, we focus on bilateral or multilateral communications as encapsulated by the term "information exchange," as opposed to communication that takes place pursuant to unilateral practices. *See supra* note 5.

[116] A naked price-fixing agreement is one that is not part of or ancillary to a legitimate business arrangement that is unrelated to the suppression of competition. *See* Joseph J. Simons, *Fixing Price with Your Victim: Efficiency and Collusion with Competitor-Based Formula Pricing Clauses*, 17 HOFSTRA L. REV. 599, 599 (1989) (noting that "the distinguishing feature of naked price-fixing lies in the absence of any integration of operations; it is this absence that prevents this naked restraint from having any likely output-increasing or efficiency-enhancing qualities and is the reason for holding such restraints illegal *per se*.").

[117] González, *supra* note 88, at 34 (noting that if firms are not capable of reaching a consensus regarding the optimal equilibrium and there is a lack of compromise on this aspect, the coordination scheme will probably not be adopted in the first place). *See also* Kai-Uwe Kühn, Carmen Matutes & Benny Moldovanu, *Fighting Collusion by Regulating Communication Between Firms*, 16 ECON. POL'Y 169, 181 (2001) ("[I]n games with multiple equilibria it cannot be assumed that in the absence of communication about planned conduct, players can figure out what the rival will play. How can one firm be sure that the other will play the 'right' equilibrium strategy or be sure that the other firm understands that it understands what should be played?").

[118] Kühn et al., *supra* note 7, at 181.

[119] MOTTA, *supra* note 4, at 147 (noting that asymmetry amongst firms makes it harder to sustain a collusive equilibrium). *See also* Leslie Lamport, Robert Shostak & Marshall Pease, *The Byzantine*

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In the absence of communication, it is still possible for each firm to independently select an equilibrium price that would be considered by every other rival firm as being the optimal outcome from a collective point of view.[120] This is indeed the situation where tacit collusion between firms is spontaneously formed—by definition, firms do not have to communicate to engage in tacit collusion. As the preceding section has shown, this would be perfectly legal under existing competition laws. Nevertheless, this is likely to be a relatively infrequent occurrence. Firms in real-world markets are prone to having heterogeneous cost structures, product lines, and expectations of future customer demand.[121] As such, each firm is likely to select an equilibrium price that is optimal vis-à-vis its own unique circumstances, but sub-optimal in relation to the competing firms as a collective whole. Following this, a collusive equilibrium would be unsustainable—prices will eventually converge to the one-shot, non-cooperative equilibrium price.[122] Any process attempted by such a firm to avoid this outcome might prove to be exceedingly costly. For example, if a firm were to increase its own price in an attempt to persuade its competitors to adopt a new collusive equilibrium price, it would lose market share in any adjustment period.[123] On the other hand, if a firm were to decrease its own price to try to coordinate on a lower price, such a move might be understood as a deviation and trigger a price war.[124] Such problems are avoided when firms engage in the exchange of relevant information.[125]

As examined above, achieving a common consensus on a unique equilibrium is only one of the three main obstacles that firms must surmount to successfully collude. Even if firms are able to reach an initial agreement on a particular equilibrium price to be set, they will not be able to sustain the stability of the collusive equilibrium over time if they are not capable of detecting and punishing deviations.[126] Consider a setting where a given firm cannot observe the prices charged by its rival firms. Where market demand levels are also unobservable, a firm would not know if the lower demand that it observes is attributable to a negative shock in demand or to a price reduction by a rival that has acquired some or all of its sales.[127] In response, a firm would have to adopt

Generals Problem, 4 ACM TRANSACTIONS ON PROGRAMMING LANGUAGES AND SYSTEMS 382 (1982) (noting that the well-known multi-party coordination problem—that price fixing will be easier in industries where firms have similar cost structures—explains to some extent the concern of that antitrust authorities); MARC IVALDI ET AL., EUROPEAN COMM'N, THE ECONOMICS OF TACIT COLLUSION FINAL REPORT FOR DG COMPETITION 4–5 (2003) (outlining these concerns).

[120] MOTTA, *supra* note 4, at 140 (noting that firms do not necessarily have to talk to each other for a collusive outcome to be sustainable).

[121] *Id.* at 141 ("If firms cannot communicate with each other, they can make mistakes, and select a price which is not jointly optimal for the firms, and might be difficult to change.").

[122] VARIAN, *supra* note 69, at 530–31.

[123] MOTTA, *supra* note 4, at 141 (noting that if a firm believes the "right" price for the industry is higher and increases its own price to signal it, it will lose market share in the adjustment period).

[124] *Id.*

[125] *Id.*

[126] González, *supra* note 88, at 28. ("If firms are not capable of detecting and punishing deviations, they will be unable to maintain the internal stability of their collusive behavior which will then breakdown sooner rather than later.").

[127] Edward J. Green & Robert H. Porter, *Noncooperative Collusion Under Imperfect Price Information*, 52 ECONOMETRICA 87, 91–92 (1984); MOTTA, *supra* note 4, at 150 (providing a stylized simplification of the demand uncertainty modeled by Green and Porter).

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a strategy which probabilistically accounts for both possibilities. Green and Porter have shown that the optimal response to such falling prices involves a period of retaliation where the firm launches a price war for a limited amount of time before reverting to the collusive price.[128] Should each firm behave in the same manner, its strategic response would invariably wrongly "penalize" rival firms, even in the instance where no firm has actually deviated from the collusive price.[129] The collusion begins to unravel. Again, these costly strategies are averted when firms commit to sharing strategic information that increases the transparency of prices in the relevant market.[130]

This discussion motivates two key theories of harm underlying information exchange.[131] First, information exchanges may help firms reach mutual understanding and consensus of possible terms of collusion (the "formation" theory).[132] As we have argued above, firms need not have explicit agreement on the specific prices or quantities in order to achieve a collusive equilibrium—information exchange on future prices or quantities may be sufficient to create such an equilibrium. Secondly, information exchanges may increase the internal stability of an already existing collusive equilibrium by making it easier for the participants to detect and punish deviations (the "internal stability" theory).[133] A common thread here is that the harm to social welfare does not directly follow from the information exchange *per se*. Rather, the implicit assumption here is that the exchange *facilitates* the formation or maintenance of a collusive equilibrium, and it is that collusive equilibrium that is ultimately responsible for the economic harm.[134] This observation has important implications, which will be discussed in Part II below.

E: Information Exchanges as Facilitating Practices—"Stand-alone" Infringements of Art 101 TFEU and the Sherman Act

Our analysis thus far has outlined the mechanism by which information exchange facilitates the formation and maintenance of a collusive equilibrium.[135] We have also suggested that, notwithstanding its adverse effects on economic efficiency, both EU

[128] *See generally* Green & Porter, *supra* note 127.

[129] *Id.* at 93 (noting that despite the fact that firms know that low prices may reflect demand conditions rather than overproduction by competitors, it is rational for them to participate in reversionary episodes where they play the non-cooperative equilibrium price).

[130] González, *supra* note 88, at 29 (noting that targeted punishment contributes to the avoidance of costly and unnecessary price wars).

[131] *See generally* Horizontal Guidelines, *supra* note 61, ¶ 62–63.

[132] *Id.* ¶ 62.

[133] *Id.* ¶ 63. Furthermore, information exchange may also increase a cartel's external stability by allowing participants to share information and collectively target potential entrants (the "external stability" theory) through strategic behavior. Finally, and in a related vein, information exchanges may place non-participants at such a significant competitive disadvantage that market entry is foreclosed (the "foreclosure" theory). This could occur, for example, in markets where data forms a critical factor input. Firms without access to the incumbents' shared data exchange could face prohibitively higher costs of entry. We do not discuss these theories of harm in this paper as such exclusionary foreclosures of competition also attract liability under Art 102 TFEU. *See id*. ¶ 64–66.

[134] *See infra* Part II.

[135] *See supra* Part I.D.

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and U.S. antitrust law permit tacit collusion for practical reasons.[136] This leads us to a conceptual crossroads—what is the basis for imposing liability with regard to stand-alone instances of information exchange? That is, when is barring information exchange appropriate in the absence of evidence that such exchange has actually facilitated explicit collusion? Does caselaw establish an independent, *sui generis* ground on which liability for information exchange may be established, or is this dependent on an inference of a separate anti-competitive agreement?

1. The Evidentiary Role of Information Exchange in Establishing an Agreement

Every instance of explicit collusion will necessarily involve inter-firm communication. Insofar as inter-firm communication takes the form of information exchange,[137] one could posit that information-exchange merely serves an *evidentiary* function in proving the existence of explicit collusion.[138] Extensive caselaw in both the European Union and United States supports such a proposition. Indeed, the U.S. antitrust regime has a long-standing tradition of inferring an agreement under section 1 of the Sherman Act from instances of information exchange, especially in situations when evidence of inter-firm communication is coupled with further evidence of price parallelism.[139] In *American Column & Lumber Co. v. United States*,[140] members of a hardwood lumber mill trade association were alleged to have conspired to fix prices pursuant to an "Open Competition Plan" whereby member firms provided detailed information about their businesses. Each firm provided daily reports of all sales actually made, monthly production and inventory reports, and current price lists to the association.[141] There was evidence that prices of hardwood lumber subsequently rose.[142] The majority of the Supreme Court inferred an agreement under section 1 of the Sherman Act on this basis, holding that the association had indeed "conspired to fix prices."

> The "Plan" is, essentially, simply an expansion of the gentleman's agreement of former days, skillfully devised to evade the law. To call it open competition because the meetings were nominally open to the public, or because some voluminous reports were transmitted to the Department of Justice, or because no specific agreement to restrict trade or fix prices is proved, cannot conceal the fact that the fundamental purpose of the "Plan" was to procure

[136] *See supra* Part I.C.

[137] As mentioned above, we focus on bilateral or multilateral communications as encapsulated by the term "information exchange," as opposed to communication that takes place pursuant to unilateral practices. *See supra* Part I.D.

[138] In other words, practices involving information exchange may provide a basis for inferring an explicit agreement to fix prices. GAVIL ET AL., *supra* note 5, at 397.

[139] Gavil et al. note that many cases like American Column & Lumber Co. v. U.S., 257 U.S. 377 (1921) were primarily concerned with whether a price-fixing agreement could be inferred from instances of information exchange. GAVIL ET AL., *supra* note 5, at 414.

[140] 257 U.S. 377 (1921).

[141] *Id.* at 391–97.

[142] *Id.* at 409. *Cf.* Maple Flooring Mfrs.' Ass'n v U.S., 268 U.S. 563 (1925) (where there was no evidence that the information exchange raised prices).

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> "harmonious" individual action among a large number of naturally competing dealers with respect to the volume of production and prices, without having any specific agreement with respect to them . . . .[143]

Where evidence of price parallelism exists, the evidentiary bar for inferring an agreement is even lower—the plaintiff need not prove the subject of the communication.[144] *A fortiori*, any evidence of communication that amounts to information exchange would be valid for the purposes of inferring an agreement. In *United States v. Foley*,[145] for example, several defendant realtors were alleged to have conspired to fix real estate commissions in a given geographical area. The evidence established that the prevailing commission rate in that area was six percent of the sales price, but shortly after a meeting where the defendants had an opportunity to discuss prices each of the defendants substantially adopted a seven percent commission rate.[146] Furthermore, evidence was adduced to establish that some defendant realtors had made complaint calls where any failure to increase commission rates by other defendant realtors was questioned at length.[147] While characterizing the defendants' conduct as an instance of reciprocal information exchange would have been difficult, the Fourth Circuit nevertheless held that the jury's inference of an agreement was valid.[148]

The evidentiary role of information exchange in the European Union is more nuanced. The EC's guidelines note that where information exchange takes place as part of another horizontal agreement or concerted practice, the competition assessment "should be carried out in the context of the assessment of the horizontal co-operation agreement itself."[149] Nevertheless, the CJEU has not been consistent in distinguishing whether the basis of liability for information exchange was due to the fact that the exchange facilitated a *separate* concerted practice or agreement to fix uniform prices, or whether the information sharing was prohibited as a concerted practice in its own right. In *Suiker Unie v. Commission*,[150] several firms in the European sugar market had collectively entered into an arrangement in which exports were channeled into specific geographical markets and diverted from others. Other sugar dealers were also pressured

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[143] *American Column & Lumber*, 257 U.S. at 410–11.

[144] *See* GAVIL ET AL., *supra* note 5, at 360 ("Historically, the opportunity to communicate prior to an increase in industry prices . . . has been [an] important plus factor relied upon by the courts to infer an agreement on price in a parallel pricing case."); *Id.* at 367 ("The mere fact of communication may support inferring an agreement without evidence of what was discussed, as may the opportunity to communicate without evidence that communication actually took place.").

[145] 598 F.2d 1323 (4th Cir. 1979).

[146] There was no direct evidence that the defendants had actually discussed prices at the meeting, beyond evidence that Foley announced that his firm was changing its commission rate from six percent to seven percent. *Id.* at 1332 ("Testimony as to what was said by various persons in the ensuing discussion is greatly in conflict, but there was evidence from which the jury could find that each of the individual defendants and a representative of each corporate defendant not represented by one of the individual defendants expressed an intention or gave the impression that his firm would adopt a similar change.").

[147] *Id.* at 1333.

[148] *Id.* at 1334.

[149] Horizontal Guidelines, *supra* note 61, ¶ 56.

[150] Suiker Unie v. Comm'n, 1975 E.C.R. 1663.

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to adopt this policy.[151] *Suiker* was a case that involved market division—thus, the firms would have been subject to a quasi-*per-se* presumption so long as an agreement or concerted practice to divide the sugar market was established.[152] Naturally, the applicants disputed the existence of the concerted practice. It was in this context that the CJEU held that:

> The criteria of coordination and cooperation laid down by the case-law of the court, which in no way require the working out of an actual plan, must be understood in the light of the concept inherent in the provisions of the treaty relating to competition that each economic operator must determine independently the policy which he intends to adopt on the common market including the choice of the persons and undertakings to which he makes offers or sells.
>
> Although it is correct to say that this requirement of independence does not deprive economic operators of the right to adapt themselves intelligently to the existing and anticipated conduct of their competitors, *it does however strictly preclude any direct or indirect contact between such operators*, the object or effect whereof is either to *influence the conduct on the market of an actual or potential competitor* or to *disclose to such a competitor the course of conduct which they themselves have decided to adopt or contemplate adopting on the market*.[153]

On one view, *Suiker* illustrates that information exchanges in the form of "direct or indirect contact" between operators can be seen as independent concerted practices that may amount to anti-competitive infringements of Art 101 TFEU.[154] On another view, *Suiker* merely stands for the proposition that information exchanges may serve an evidentiary function of proving that some other concerted practice exists, such as a concerted practice to fix prices and share markets as in *Suiker*.[155] The fact that the arrangement was held to have as its object an anti-competitive purpose points towards the latter view.[156] Under this view, the presumption of illegality arose from the fact that the concerted practice objected to was that of the market sharing arrangement (an object-type infringement) rather than the information exchange *per se*. In further

[151] *Id.* ¶ 127–130.

[152] The notion of "quasi-*per-se*" rules will be elaborated on in Part III.B.

[153] Suiker, 1975 E.C.R. ¶ 173–174 (emphasis added). The wording in these paragraphs have been cited in numerous subsequent cases involving information exchange.

[154] *See infra* Part II.E.2.

[155] That firms have the "right to adapt themselves intelligently to the existing and anticipated conduct of their competitors" mirrors the basis for why mere tacit collusion is not illegal—competition law should not require that firms behave "irrationally" to avoid an infringement. Suiker, 1975 E.C.R. ¶ 174. On the other hand, "direct or indirect" contact with competitors to influence their conduct or to disclose one's own conduct is to be distinguished from tacit collusion (i.e. the former right). *See generally infra* Part I.C.

[156] It was not until more than thirty years later in Case C-8/08, T-Mobile Netherlands BV v. Raad van Bestuur van de Nederlandse Mededingingsautoriteit, 2009 E.C.R. I–4529 that the CJEU established that a "stand-alone" instance of information exchange could amount to an object-type infringement of Art 101(1) TFEU.

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support of this view, the CJEU in *Suiker* held that "the object and effect of the said practices [in Suiker] which *limit or control markets and also share markets* within the meaning of Article 85(b) and (c) was to interfere with competition."[157] This reinforces the notion that the instances of information exchange were merely used to infer the existence of a separate concerted practice of market-sharing.

2. Stand-alone Instances of Information Exchange

Suppose that some competitor firms engage in information exchange, but that no evidence establishes a separate collusive agreement. Is such a practice prohibited by antitrust law? It is now well-established in both U.S. antitrust and EU competition law that these stand-alone instances of information exchange may be prohibited and enjoined by both the courts and antitrust authorities.

In the United States, information exchange may be challenged as a stand-alone unreasonable restraint of trade under contemporary antitrust law. However, not until the late 1960s did the Supreme Court return to the issue of whether an information exchange could itself constitute a violation of section 1 of the Sherman Act. In *United States v. Container Corp. of America,* [158] several defendant competitors periodically requested of each other verification of prices which they had most recently charged to a specific customer. [159] Importantly, the arrangement among the defendants was reciprocal—each defendant furnished the data with the expectation that its rivals would comply with requests for similar data when made.[160] The Court held that the concerted action in *Container* was best understood as an agreement to exchange price information.[161] As to whether the agreement had actually harmed competition, Justice Douglas held that "the exchange of price data tend[ed] toward price uniformity,"[162] and hence concluded that "stabilizing prices as well as raising them [was] within the ban of [section 1 of the Sherman Act]."[163] Justice Fortas concurred by noting that:

> The obvious effect was to "stabilize" prices by joint arrangement—at least to limit any price cuts to the minimum necessary to meet competition. In addition, there was evidence that, in some instances, during periods when various defendants ceased exchanging prices exceptionally sharp and vigorous price reductions resulted.

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[157] Suiker, 1975 E.C.R. ¶ 195 (emphasis added). Reference may also be made to AG Mayras' opinion in Suiker, 1975 E.C.R. at 2060 (Opinion of Advocate-General Mayras). There, the AG relied on ICI v Comm'n, 1972 E.C.R. ¶ 66 for the proposition that parallel conduct may "amount to strong evidence of [a concerted practice] if it leads to conditions of competition which do not correspond to the normal conditions of the market, having regard to the nature of the products, the size and number of the undertakings, and the volume of the said market." Note that Article 85 of the EEC Treaty is the predecessor of Art 101 TFEU.

[158] 393 U.S. 333 (1969).

[159] *Id.* at 335.

[160] *Id.*

[161] *Id.* at 340.

[162] *Id.*

[163] *Id.* at 337.

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> On this record, taking into account the specially sensitive function of the price term in the antitrust equation, I cannot see that we would be justified in reaching any conclusion other than that defendants' tacit agreement to exchange information about current prices to specific customers did in fact substantially limit the amount of price competition in the industry. That being so, there is no need to consider the possibility of a *per se* violation.[164]

Justice Fortas' concurrence was important in establishing that the defendants' "tacit agreement to exchange information about current prices to specific customers" was in itself an antitrust violation insofar as it facilitated coordination on prices, ultimately limiting the amount of price competition in the industry.[165] Critically, there was little evidence of price parallelism or price uniformity in the industry, thus defeating any argument that the agreement to exchange information about prices was used as a plus factor to infer a separate agreement to fix prices.[166]

In the European Union, the doctrinal position has been clarified—it is now clear that an instance of information exchange may amount to an independent infringement of Art 101(1) TFEU. In *Thyssen Stahl v Commission*,[167] several firms in the steel beams market explicitly agreed to continue fixing prices and sharing the market after a government-sanctioned quota system was abolished.[168] As part of the arrangement, the firms also set up an information exchange to share commercially sensitive data.[169] Following *Suiker*, the court could have considered the information exchange purely as evidence of a concerted practice to fix prices. Instead, the information exchange was characterized as a stand-alone infringement on top of the price fixing and market sharing arrangements.[170] This was a significant development for three reasons. First, the EC itself had sought to retract its assessment of the information exchange as a stand-alone infringement.[171] However, the Court of First Instance (CFI), with which the European Court of Justice (ECJ) later agreed, found that the EC was not entitled to

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[164] *Id.* at 340.

[165] *Id.*

[166] "Plus factors" refer to economic outcomes and firm conduct that go beyond parallel conduct in the inference of explicitly coordinated action (as opposed to unilateral conduct). William E. Kovacic et al., *Plus Factors and Agreement in Antitrust Law*, 110 MICH. L. REV. 393, 405 (2011).

[167] Case C-194/99, Thyssen Stahl v Comm'n, 2003 E.C.R. I–10885 [hereinafter Thyssen, ECJ].

[168] *Id.* ¶ 3–7.

[169] The facts of this case are stated in more detail in the lower court decision. Case T-141/94, Thyssen Stahl v Comm'n, 1999 E.C.R. II–347 (Court of First Instance) [hereinafter Thyssen, CFI] ¶ 173–79 (describing the various committees through which the firms involved continued to share confidential information even after the quota system was abolished). Recall that the CJEU comprises two separate court levels, first being the General Court (formerly known as the Court of First Instance), and an appellate court (the European Court of Justice). JONES & SUFRIN, *supra* note 3, at 97.

[170] Thyssen, CFI, ¶ 392 ("It must therefore be concluded that, in recitals 263 to 272 of the Decision, the information exchange systems in question were regarded as being separate infringements of Article 65(1) of the Treaty. In so far as they seek to alter this legal assessment, the arguments submitted by the Commission . . . at the hearing must therefore be rejected."); Thyssen, ECJ, ¶ 77–90 (rejecting the firms' argument that CFI erred in characterising the information exchange as a separate infringement).

[171] Thyssen, CFI, ¶ 384.

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make such a retraction on appeal.[172] Second, the CFI held, and the ECJ affirmed, that the information exchange was a concerted practice that "appreciably reduced the decision-making independence of the participating producers by substituting practical cooperation between them for the normal risks of competition."[173] Third, the characterization of the information exchange as a stand-alone infringement was practically significant in this case because it increased the number of separate infringements for which the parties could be fined, thus increasing the parties' total liability.[174]

The opinion of Advocate General (AG) Stix-Hackl[175] accompanying *Thyssen*[176] is particularly relevant because it distinguishes between the ancillary or evidentiary role of information exchanges in establishing other breaches of competition law and stand-alone infringements of competition law.

> Information exchange systems will be anti-competitive *in se* if their anti-competitive nature results from the systems themselves, and thus independently of whether the information obtained through them was used for other "classic" breaches of competition, such as price-fixing agreements and market-sharing.[177]

Further, AG Stix-Hackl noted that information exchanges leading to the removal of uncertainty between competitors should be distinguished from the restriction of decision-making independence among competitors.[178] In her view, this distinction was important because establishing the former did not necessarily lead to the latter.

> In the case of an information exchange system constituting a separate infringement, the demerits of the act, according to the Court's case-law, lie in the fact that the risk of uncertainty intrinsic to free competition is partially or wholly removed. However, the demerits of "classic"

[172] *Id.* ¶ 77, 392; Thyssen, ECJ, ¶ 77–90 (rejecting the firms' argument that CFI erred in characterising the information exchange as a separate infringement).

[173] Thyssen, CFI, ¶ 406, 410; Thyssen, ECJ, ¶ 89 ("[T]he Court of First Instance was entitled to hold, in paragraph 406 of that judgment, that the decision-making independence of the undertakings participating in those systems had been appreciably reduced.").

[174] Thyssen, CFI, ¶ 385 ("This question [of whether the information exchange constituted a separate infringement] is important not only for the legal analysis of the conduct at issue but also for determining whether the imposition of a separate fine for that conduct was justified").

[175] Case C-194/99 P, Thyssen Stahl v Comm'n, Opinion of Advocate-General Stix-Hackl, 2003 E.C.R. I–10821.

[176] Advocate-Generals of the CJEU are formally appointed members of the court with "the same institutional status as judges." *See* Albertina Albors-Llorens, *Securing Trust in the Court of Justice of the EU: The Influence of the Advocates General*, 509–528, 510 (2012) *in* CATHERINE BARNARD, MARKUS GEHRING, & IYIOLA SOLANKE (EDS.), THE CAMBRIDGE YEARBOOK OF EUROPEAN LEGAL STUDIES VOLUME 14 (2011–2012). However, they do not perform a judicial function. Instead, their primary role is to assist the court by, *inter alia*, writing non-binding opinions on cases before the CJEU. *See generally id.*

[177] *Id.* ¶ 112.

[178] *Id.* ¶ 199–201.

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> infringements of competition, such as price fixing or market-sharing, lie in a separate disruption of free competition, namely the restriction placed on the decision-making independence of participating undertakings. Consequently, one can proceed on the premise that there has been a "consumption" of the demerits of the first action (removal of the risk attached to lack of knowledge) when the second action is committed (restriction of operational freedom) *only if, in the particular case, nothing more remains of the demerits of the first action such as to justify a separate penalty.*[179]

In other words, instances of information exchange would amount to stand-alone infringements of Art 101 TFEU even if they were not parasitic upon any ancillary price-fixing arrangement or other cartel facilitated by the exchange. According to AG Stix-Hackl, this would arise where the "risk of uncertainty typical of competition . . . is reduced in such a way by [the information exchange such that] the restoration of free competition … appears scarcely conceivable."[180]

In the next part of our article, we argue that a stand-alone instance of information exchange is best grounded on the conception of a prophylactic rule. Further, we characterize this rule as a form of *ex ante* regulation and explain why it has no *ex post* counterpart in antitrust law.

II. THE EX-ANTE REGULATION OF INFORMATION SHARING: A PROPHYLACTIC RULE

In Part I.D. we posited that competition law attempts to respond to the adverse effects on economic efficiency that result from economic collusion. However, pursuant to the Posner-Turner debate, we have seen that an *ex post* remedy to economic collusion arising from tacit collusion is difficult to implement.[181] These difficulties are substantially attenuated from an *ex ante* point of view.[182] As Sullivan, et al. point out:

> [O]ligopolistic interdependence, without collusion, [used in the legal sense, i.e. without communication] is not unlawful, even in instances where the effect is supracompetitive prices and returns… [However, i]n instances of interdependent pricing in which the oligopolists act concertedly to bring about or maintain the industry conditions which make interdependent pricing feasible, there is no inhibition to the application of Section 1. . . . When the concerted exchange of price information facilitates interdependent pricing, the concerted exchange is itself unlawful, not because it constitutes price fixing (which, in reason, it does not) *but because, given the structural conditions of the market, it makes it possible or easier for the oligopolists to engage in interdependent pricing, conduct which is lawful if it occurs without*

[179] *Id.* ¶ 200 (emphasis added).

[180] *Id.* ¶ 202.

[181] *See supra* Part I.C.

[182] *Id.*

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> *concerted facilitation*, but which is always harmful to competition… Precisely because interdependent pricing hurts competition, much as does cartelization, any concerted conduct by competitors that facilitates such pricing also hurts competition. *And unlike interdependent pricing itself, such facilitating conduct is both avoidable by oligopolists and remediable by courts.*[183]

This is the crux of the rule that prohibits information exchange. Unlike the case of tacit collusion alone, information exchange involves an *overt act* on the part of firms that is not only avoidable by firms, but also practically remediable through the instrument of antitrust. The arguments that Turner raised earlier do not apply here—unlike injunctive relief in response to tacit collusion that would involve courts in price-regulation for which they are severely ill-equipped, injunctive relief here would target a specific species of conduct that firms would be able to consciously avoid.[184]

At the same time, the overt acts involved in information sharing may be distinguished from the acts involved in conventional cartels such as price fixing and market sharing, in that the latter (but not the former) relates to coordinating or setting market variables like price and quantity—variables that directly affect efficiency and welfare.[185] In this light, it is sapient to note that information exchange is a member of a larger class of conduct forming what is collectively known as "facilitating practices." A facilitating practice is an activity that makes it easier for parties to coordinate price or other behavior in an anti-competitive way. Importantly, facilitating practices make tacit collusion more likely, and make existing instances of tacit collusion more effective.[186]

A rule prohibiting certain facilitating practices is *prophylactic*—it aims to prevent or reduce the probability of *future* economic collusion from arising.[187] Even if the rule is infringed, economic collusion will not necessarily result or be ongoing. The infringement of the rule merely conveys the fact that the firms in question have engaged in a course of conduct that would provide them with strategic advantages if they were to choose to collude in the future. In the context of stand-alone instances of information

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[183] LAWRENCE A. SULLIVAN ET AL., THE LAW OF ANTITRUST: AAN INTEGRATED HANDBOOK 255–56 (3d ed. 2014) (emphasis added).

[184] Turner, *supra* note 89, at 669 (arguing that Congress did not intend the courts to act as price regulators for all businesses posessing substantial monopoly power. Turner also suggests that an injunction that prohibits defendants from "further conspiring to fix prices" would be hopelessly vague, and that compliance would demand "irrational behavior.")

[185] MOTTA, *supra* note 4, at 18.

[186] Posner, *supra* note 5 (defining facilitating practices).

[187] *Cf.* Ghezzi and Maggiolino's view that market parallelism "still forms the second building block of any concerted practice in the form of 'firms' planned use of the strategic data acquired through an exchange," Federico Ghezzi & Mariateresa Maggiolino, *Bridging EU Concerted Practices with U.S. Concerted Actions*, 10 J. COMPETITION L. & ECON. 647, 663 (2014) with the earlier view in the 1970s that market parallelism was once "the crucial element of the notion of concerted practices." *Id.* at 649 In our view, market parallelism was never required as an element in establishing a concerted practice. In fact, it takes on an even more diminished role for facilitating practices due to the prophylactic nature of the rule. This further suggests that the "parallelism plus" rule (which entails the finding illegal behavior whenever price parallelism is accompanied by a facilitating practice) adopted by U.S antitrust law is difficult to justify since it is the facilitating practice that renders the firm culpable, and not the parallel behavior *per se*. *Id.* at 665.

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exchange, the prophylactic nature of the rule is immediately apparent—an infringement here is independent of any ancillary price-fixing arrangement or other cartel facilitated by the said exchange. Furthermore, some cases have established that the failure to use information acquired from the exchange of price-sensitive information does not amount to a substantive defense,[188] as it is the exchange of such information that is problematic in and of itself.[189]

Our characterization of the rule as being prophylactic raises several preliminary points that will be considered in turn. First, unlike a rule prohibiting collusion where economic harm has to be either proven or presumed, a prophylactic rule prohibiting information exchange guards against the risk or potential for economic harm.[190] Thus, the chain of causation with regard to economic harm under a prophylactic rule is likely to be far more remote as compared to the chain of causation under a rule where economic harm has to be proven. Consider the inferential process involved in establishing anti-competitive liability under a typical rule of reason case. If the plaintiff alleging liability is able to establish that the anti-competitive effects outweigh the pro-competitive effects following the defendant's conduct, he discharges his burden of proof and the firm is held liable under antitrust law.[191] The inferential process is explicit—evidence of anticompetitive harm is used directly to establish anti-competitive harm. In contrast, under a prophylactic rule, the plaintiff alleging liability may only have to establish that the conduct has occurred.[192] Unlike under a *per se* rule where the anti-competitive harm is inferred, however, a further inference is required to establish economic harm. As mentioned earlier, no *actual* economic harm is inferred from the fact that the conduct has occurred. Rather, the conduct merely increases the probability that economic harm could occur. It is this probabilistic inference that makes the chain of causation more remote under a prophylactic rule. Consequently, the increased remoteness of a prophylactic rule with regard to economic harm raises the frequency of false positives, where pro-competitive behavior is wrongly condemned as

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[188] *See, e.g.,* Joined Cases C-204/00 P, C-205/00 P, C-211/00 P, C-213/00 P, C-217/00 P and C-219/00 P, Aalborg Portland AS v. Comm'n, 2004 E.C.R. I–123, ¶ 85.

[189] Thus, we argue that market outcomes such as high prices in a given industry, or parallel conduct amongst firms in the industry that ostensibly evidence the existence of a collusive equilibrium, should have little to no probative value in establishing a facilitating practice. Instead, a facilitating practice should be inferred from proven conduct, evidenced by e-mail messages, memos, or other recorded evidence exhibiting the alleged communications. This is in line with the orthodox view in antitrust policy that communication between firms *inter se* remains the touchstone of liability when collusive conduct is a concern. *See generally* Kaplow, *supra* note 93; MOTTA, supra note 4.

[190] *See* Matthew Conaglen, *The Nature and Function of Fiduciary Loyalty* 121 LAW. Q. REV. 452 (2005) (applying a similar concept to the rules concerning fiduciary loyalty).

[191] This characterization of the rule of reason is a tad simplistic, as most antitrust cases are decided pursuant to a structured, burden-shifting framework that turns on the strength and weight of the evidence regarding the adverse effects of the alleged conduct. *See* GAVIL ET AL., *supra* note 5, at 256. However, we argue that a burden-shifting framework provides the means to determine whether anti-competitive effects outweigh pro-competitive effects in a given case. Indeed, several cases suggest that this is the end goal. *See, e.g.,* Law v. Nat'l Collegiate Athletic Ass'n, 134 F.3d 1010, 1019 (10th Cir. 1998) ("Ultimately . . . the harms and benefits must be weighed against each other in order to judge whether the challenged behavior is, on balance, reasonable.").

[192] *See supra* Part I.E.2 (where we note how stand-alone instances of information exchange may be prohibited under contemporary antitrust law). *See also* our later discussion concerning object-type infringements regarding information exchange under EU competition law. *Infra* Part III.C.

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anti-competitive behavior.[193] As we will discuss in Part III, the presumption of illegality associated with the object limb in Art 101(1) worsens the problems associated with such false positives.

Second, as opposed to *ex post* regulation against existing collusive activity, a prophylactic rule in this context is arguably a form of *ex ante* regulation that aims to deter *future* economic collusion. The *ex ante* nature of the rule is not immediately obvious. Contemporary competition law enforcement is generally seen to be *ex post* in nature, for it primarily establishes and punishes past infringements or infringements that have already begun.[194] However, as Shavell points out, the crux of an *ex ante* rule lies in the fact that liability may be imposed independently of the actual occurrence of harm.[195] This may be contrasted with the situation where liability is imposed *ex post*—in such cases, liability is intrinsically tied to actual or inferred harm that has occurred.[196]

Ex ante regulation in competition law is, of course, not limited to the prohibition of facilitating practices. The obvious example of *ex ante* antitrust enforcement is that of merger review—prospective mergers may be prohibited prior to any consolidation when such mergers are projected to lessen competition.[197] Clearly, in merger review, no actual harm has yet occurred because the merger has not yet taken place. Instead, regulation here is driven by economic theory. There is a strong basis for believing that a reduction in the number of firms or a more symmetric distribution of assets among firms would result in higher prices and a reduced level of social welfare, while also facilitating tacit collusion.[198] Any prohibition of such a prospective merger must thus proceed on this conceptual basis.

It may be argued that *per se* rules in antitrust are prophylactic as well. This follows from how a *per se* presumption of illegality in antitrust is irrebuttable—a defendant cannot adduce evidence of her non-implementation to rebut a presumption of illegality once her participation in the price-fixing agreement has been established by the plaintiff.[199] Thus, an agreement to fix prices is barred under a *per se* rule,

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[193] *See generally* Frank H. Easterbrook, *Airlie House Conference on the Antitrust Alternative: Allocating Antitrust Decisionmaking Tasks*, 76 GEO. L. J. 305 (1987).

[194] *See*, *e.g.,* EUROPEAN COMM'N, WHITE PAPER ON MODERNISATION OF THE RULES IMPLEMENTING ARTICLES 85 AND 86 OF THE EC TREATY (1999) (noting a substantial substitution of the notification system for agreements to an *ex post* control system. A purported aim of the shift is to reduce the burden of notifications and free resources that can be more profitably used in the analysis of more important antitrust cases.).

[195] Shavell, *supra* note 24, at 357 (noting that *ex ante* regulation modifies behavior in an immediate way through requirements that are imposed before, or at least independently of, the actual occurrence of harm).

[196] *Id.*

[197] MOTTA, *supra* note 4, at 192 ("Another *ex ante* instrument to prevent collusion from arising is given by merger control.").

[198] *Id.* at 192. We would also note, for completeness, that a forthcoming merger may be prohibited on the basis that the merged entity would have a unilateral incentive to raise prices. *See* GAVIL ET AL., *supra* note 5, at 675 ("[O]nce merged, the merged firm could raise price without needing to coordinate with any other firms.").

[199] *See* Justice Steven's observations in Arizona v. Maricopa Cty. Med. Soc'y, 457 U.S. 332, 351 (1982) ("The anticompetitive potential inherent in all price-fixing agreements justifies their facial invalidation even if procompetitive justifications are offered for some. Those claims of enhanced competition are so unlikely to prove significant in any particular case that we adhere to the rule of law that is justified in its general application.").

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regardless of whether actual economic harm results from the agreement or not. As Justice Steven noted in *FTC v. Superior Court Trial Lawyers Assn.*:

> The per se rules in antitrust law serve purposes analogous to per se restrictions upon, for example, stunt flying in congested areas or speeding. Laws prohibiting stunt flying or setting speed limits are justified by the State's interest in protecting human life and property. *Perhaps most violations of such rules actually cause no harm.* No doubt many experienced drivers and pilots can operate much more safely, even at prohibited speeds, than the average citizen … *Yet the laws may nonetheless be enforced against these skilled persons without proof that their conduct was actually harmful or dangerous*. In part, the justification for these per se rules is rooted in administrative convenience. They are also supported, however, by the observation that every speeder and every stunt pilot poses some threat to the community… So it is with boycotts and price fixing. Every such horizontal arrangement among competitors poses some threat to the free market.[200]

Nonetheless, *per se* rules are distinguishable from other prophylactic rules insofar as actual economic harm is always inferred from a defendant's conduct in *per se* cases.[201] When no economic harm actually occurs, the inference of economic harm is a mere legal fiction, but the inference is still made out nevertheless. Viewed in this light, antitrust law undertakes a policy reason in prohibiting rebuttals against this inference. It does so because the benefits of permitting such a defense are far outweighed by their administrative costs, in particular, because the defense will be difficult to verify and in any event, has a very low prior probability of being valid.[202] In contrast, under a prophylactic rule prohibiting facilitating practices, no actual economic harm is inferred. Rather, the conduct is prohibited for exogenous reasons independent of actual economic harm.[203]

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[200] 493 U.S. 411, 433 (1990) (emphasis added).

[201] *Id.* at 433–34 (emphasis added).

[202] *See* Jonathan B. Baker, *Per Se Rules in the Antitrust Analysis of Horizontal Restraints*, 36 ANTITRUST BULL. 733, 740 n.29 (1991) (explaining why the Court in *Trenton Potteries* refused to entertain arguments that the rates they had agreed to were "reasonable"). *See also* Justice Marshall's dissent in U.S. v. Container Corp. of America, 393 U.S. 333, 341 (1969) (Marshall, J., dissenting) ("Per se rules … are justified on the assumption that the gains from imposition of the rule will far outweigh the losses and that significant administrative advantages will result. In other words, the potential competitive harm plus the administrative costs of determining in what particular situations the practice may be harmful must far outweigh the benefits that may result. If the potential benefits in the aggregate are outweighed to this degree, then they are simply not worth identifying in individual cases.").

[203] Such reasons would include, for example, the social benefits from the increased deterrence with regard to conduct that could (probabilistically) result in economic collusion. As Kaplow argues, a legal rule that promotes social welfare could very well have social costs that chill beneficial conduct. Nevertheless, it would still be justified if the rule's "deterrence benefits" outweigh its "chilling costs." *See generally* LOUIS KAPLOW, COMPETITION POLICY AND PRICE FIXING 231–32 (2013) (outlining the framework for optimal decision-making for horizontal restraints). In the instance at hand, a prophylactic rule prohibiting facilitating practices would be justified if its attendant benefits outweighed its costs. We discuss these tradeoffs extensively in Part III of our article.

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To state that a facilitating practice like information exchange is subject to a rule of reason or effects-based analysis ostensibly raises a paradox. If a prophylactic rule prohibits conduct independent of actual harm, how then will a plaintiff be able to establish his case that the anti-competitive effects arising from the defendant's conduct outweigh the pro-competitive effects following from the same? With regard to information exchange, the answer lies in the general rule that the plaintiff is only required to prove that the exchange is *likely to* result in adverse economic effects; she is not required to prove *actual* effects. Nevertheless, pursuant to the rule of reason, the analysis must take place in the context of the relevant market and its characteristics.[204] Indeed, the appropriate analysis is exceedingly similar to that of the merger regulation setting, where a counterfactual scenario without the presence of information exchange is compared to a scenario where the information exchange takes place. [205]

In the final part of our article, we posit how the implementation of such prophylactic rules under existing EU competition law lead to higher error costs. We argue that any countervailing reduction in regulatory costs are insignificant as compared to the higher error costs, leading to an inefficient state of affairs as compared to the U.S. antitrust regime.

III. A CRITIQUE OF CONTEMPORARY EU COMPETITION LAW

In this section, we argue that the enforcement of the prophylactic rules against information exchange under Art 101's bifurcated structure results in net inefficiencies, especially when juxtaposed against the rule of reason approach. We outline a formal economic framework for analyzing the costs of competition rules, before critiquing existing EU competition law pursuant to this yardstick.

A. The Optimal Differentiation of Competition Rules

It is well-established in the law and economics literature that in crafting an optimal standard of proof, a social planner faces an inevitable trade-off between accuracy and certainty. [206] This tradeoff has been characterized as a tension between rules and standards.[207] In general, flexible standards that require intensive and context-specific fact-finding inquiries promote accuracy at the cost of legal certainty. In contrast,

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[204] *See supra* note 40 and accompanying text.

[205] *See infra* Part III.E.

[206] Mark A. Lemley & Christopher R. Leslie, *Categorical Analysis in Antitrust Jurisprudence*, 93 IOWA L. REV. 1207, 1256–57 (2008) ("Our discussion [on categorical analysis in antitrust law] fits within a broader framework of legal scholarship on the choice between rules and standards. As that literature suggests, the tradeoff is generally one between certainty and accuracy. If neither costs nor uncertainty were a problem, standards would always be preferable to rules in antitrust cases because they are more likely to achieve the right result. . . . But [standards are] also likely to be more costly than a system of simple rules.") (footnotes omitted).

[207] *See generally* Christiansen & Kerber, *supra* note 13; Lemley & Leslie, *supra* note 206; Jones & Kovacic, *supra* note 45; Jan Broulík, *Preventing Anticompetitive Conduct Directly and Indirectly: Accuracy Versus Predictability*, 64 ANTITRUST BULL. 115 (2018); Louis Kaplow, *On the Design of Legal Rules: Balancing Versus Structured Decision Procedures*, 132 HARV. L. REV. 992 (2019) [hereinafter Kaplow, *Design of Legal Rules*]; Louis Kaplow, *Balancing Versus Structured Decision Procedures: Antitrust, Title VII Disparate Impact, and Constitutional Law Strict Scrutiny*, 167 U. PA. L. REV. 1375 (2019) [hereinafter Kaplow, *Balancing Versus Structured Decision Procedures*].

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categorical, bright-line rules tend to increase error costs, but are easy to administer and provide legal certainty to parties.[208]

To further appreciate the tradeoffs involved in structuring an optimal evidentiary regime, consider a hypothetical spectrum distributed across the intensity of fact finding under a given legal regime. Christiansen and Kerber explain that as the intensity of fact-finding pursuant to a more differentiated rule (e.g. under the rule of reason) is increased, the probability of both wrongful acquittals and wrongful convictions is reduced.[209] However, this reduction of wrongful inferences comes at a cost—as compared to less differentiated rules, differentiation also increases the regulatory costs of enforcement.[210] On the other hand, legal presumptions increase error costs but reduce regulatory costs. For example, a legal presumption in favor of competition authorities[211] would increase the probability of wrongful acquittals, while a legal presumption that gives rise to *de facto* legality[212] would increase the probability of wrongful convictions.

Regulatory costs may be further categorized into two related but distinct subsets. The first subset relates to administrative costs—the practical resources that regulators, litigants, and courts expend on cases under adjudication.[213] For example, administrative costs would include the set-up costs of competition rules, any litigation costs incurred by enforcement agencies and litigants, and general monitoring and compliance costs.[214]

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[208] Lemley & Leslie, *supra* note 6, at 1263 ("Bright-line rules may be acceptable, despite their error costs, because they conserve judicial resources."); Jones & Kovacic, *supra* note 45, at 258–59 ("Excessive reliance on bright-line rules (to condemn or to exculpate) can sacrifice economic benefits generated by practices which pose some competitive dangers but, in important circumstances, serve valuable ends, or render decision takers powerless to act against conduct which has the ability to harm competition. . . . At the same time, bright-line rules can serve important ends (particularly, the attainment of procedural economy) when the rules rest upon a sound understanding, from theory and experience, that the practice in question typically imposes harm (a rule to condemn) or normally has benign or procompetitive effects (a rule to exculpate).").

[209] Christiansen & Kerber, *supra* note 13, at 224 ("Since additional assessment criteria through more differentiated rules can lead to a better identification of pro- and anti-competitive behavior, a higher degree of differentiation will usually imply a reduction of error costs.").

[210] *Id.* ("The costs of ascertaining whether a certain business behavior, such as a merger, is allowed or prohibited can be assumed to rise with increasing degree of differentiation. Hence, the cost curve increases and at an increasing rate. . . .").

[211] In other words, a presumption of illegality. *Id.* at 227 ("The opposite per se rule that prohibits [conduct] B in all cases can lead to large welfare losses due to type II error, because all procompetitive B are forbidden, but the welfare losses through type I error are nil.").

[212] In other words, a presumption of legality. *Id.* ("A per se-rule that permits [conduct] B in all cases would imply that there are no welfare losses by type II error, but perhaps considerable costs due to type I error, since all anticompetitive B are allowed.").

[213] Broulík makes this distinction implicitly. *See* Broulík, *supra* note 207, at 116–17 ("This article focuses on the role of accuracy and predictability in the prevention, reflecting on the under-appreciation of predictability in mainstream antitrust scholarship. Models of optimal antitrust rules, in addition, frequently take into account resources spent by adjudicators and businesses on actual cases. . . . As these costs are moreover immaterial for the argument advanced in this article, they will not be further considered.") (footnotes omitted).

[214] Christiansen & Kerber, *supra* note 13, at 231–32 ("The following four kinds of costs of competition rules can be distinguished: 1. Set-up costs of rules. . . . 2. Information and assessment costs in competition cases. . . . 3. General monitoring and compliance costs. . . . 4. Costs through legal uncertainty.") (emphasis omitted).

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The second subset relates to predictability costs. These costs are incurred by firms in predicting whether their conduct would attract liability under the regime in question.[215]

Given the inherent tension between accuracy and certainty, "optimal differentiation" entails a level of differentiation where the marginal decrease in error costs is just enough to offset the marginal increase in regulatory costs.[216] It is important to note that because a zero cost regime is not possible, the optimal evidentiary regime adopts a level of differentiation that minimizes the sum of both Type I and Type II error costs as well as regulatory costs.[217]

The differing treatment of facilitating practices across the EU and U.S. regimes may be analyzed pursuant to this framework. In the context of EU antitrust law, Christiansen and Kerber illustrate that it is not sufficient to justify a rule of reason approach over a *per se* approach merely by arguing that a certain category of business conduct has both positive and negative economic effects.[218] Rather, the optimal level of differentiation depends, *inter alia*, on the regulatory costs of enforcing such a rule, the relative incidence of cases where such conduct has more positive than negative effects (or vice-versa), and the relative magnitude of the consequences following a wrongful conviction vis-à-vis similar consequences following a wrongful acquittal.[219] Indeed, legal presumptions in favor of competition authorities that focus on the form of the challenged conduct rather than on its actual effects in the market are not necessarily inefficient.[220] Rather, it is overt formalism that gives rise to inefficiency—where the net increase in Type I or Type II error costs outweigh any countervailing reduction

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[215] Broulík, *supra* note 207, at 124 ("Since effectiveness of deterrence is based on expectations of businesses about future adjudicative decisions, it hinges upon predictability."). *See also* Jan Broulík, *Two Contexts for Economics in Competition Law: Deterrence Effects and Competitive Effects* (N.Y. Univ. Sch. Law, Working Paper No.18-16, 2018).

[216] *See generally* Christiansen & Kerber, *supra* note 13 at 228 ("[A]t the optimal degree of differentiation *d**, the marginal regulation costs of additional differentiation equal the marginal reduction of the sum of the error costs.").

[217] *Id.* at 223 ("[T]he optimal rule is characterized by the minimum of the sum of welfare losses through wrong decisions (error costs) and regulation costs.") (citing Daniel L. Rubinfeld, *Econometrics in the Courtroom*, 85 COLUM. L. REV. 1048 (1985); Mitchell A. Polinsky & Steven Shavell, *Legal Error, Litigation, and the Incentive to Obey the Law*, 5 J. L. ECON. & ORG. 99 (1989)).

[218] *Id.* at 238 (arguing that, to justify replacing *per se* prohibition of resale price maintenance in favour of a rule of reason approach, "it is not sufficient to show that there are cases in which resale price maintenance can lead to positive welfare effects." Instead, empirical consideration of the positive and negative welfare effects of resale price maintenance "over a range of cases is necessary."). *See also* Denis Waelbroeck, *Vertical Agreements: 4 Years of Liberalisation by Regulation n. 2790/99 after 40 Years of Legal (Block) Regulation*, THE EVOLUTION OF EUROPEAN COMPETITION LAW: WHOSE REGULATION, WHICH COMPETITION? 85 (Hanns Ullrich ed., 2006).

[219] Christiansen & Kerber, *supra* note 13, at 238 ("[T]he following questions have to be answered: 1. . . . [W]hat is the frequency distribution of welfare effects of resale price maintenance? 2. How large is the 'separation effectiveness' of additional criteria that are used in a more differentiated rule, that is, to what extent can their application reduce error costs of type II ('false negatives') and to what extent does it lead to additional error costs of type I ('false positives')? . . . 3. How large are the dangers of distorted decisions by the additional scope for rent-seeking behavior? 4. What are the additional regulation costs, including all kinds of direct and indirect costs?").

[220] In general, a formalistic approach tends to favor rigid rules over more flexible and context-specific standards that weigh competing interests.

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enforcement costs.[221] In the following sections, we will examine the EU competition law regime in accordance with the aforementioned framework.

B. Object-Type Infringements in EU Competition Law

A *per se* rule is undifferentiated—once the existence of the alleged conduct has been proven, an irrebuttable presumption of illegality operates to establish liability. In contrast, a full-blown analysis under the rule of reason would be considerably differentiated[222]—such an analysis would require a detailed examination of the nature of the alleged conduct, the context in which it took place, and the competitive effects flowing from that conduct.[223] At first blush, the approach adopted by the TFEU is similar. Like the *per se* rule, a presumption of illegality is also drawn with respect to object-type infringements.[224] In contrast, where the conduct is determined to fall under the effects limb of Art 101(1), the trier of fact is required to evaluate the competitive effects following the alleged conduct and the context in which it took place. As such, analysis under the effects limb of Art 101(1) appears similar to that of analysis under the rule of reason.

However, the regimes are not identical. Recall the bifurcated nature of Art 101 TFEU[225]—unlike the U.S. antitrust regime, *any* agreement, including object-type agreements, may benefit from a "net economic benefit" defense under Art 101(3).[226] Thus, insofar as a defendant firm has an opportunity to rebut the presumption placed against him under Art 101(1), the object limb of Art 101(1) is not a true *per se* rule.[227] Neither, too, should the effects limb be equated with the rule of reason: while

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[221] In other words, inefficiency arises from overt formalism (i.e. suboptimal differentiation) when Type I error costs outweigh the reduced costs in applying bright-line rules together with the reduction in Type II error costs. *See* Christiansen & Kerber, *supra* note 13, at 228 ("[A]t the optimal degree of differentiation . . ., the marginal regulation costs of additional differentiation equal the marginal reduction of the sum of the error costs.").

[222] *Id.* at 220–21 ("Instead of the dichotomy of per se rules on one hand and rule of reason on the other hand, we want to introduce the notion of a continuum of more or less differentiated rules. As one extreme case, no individual effects are relevant at all under a plain per se rule such as the per se prohibition of resale price maintenance. At the other extreme point of a full-scale rule of reason, a comprehensive analysis of all pro-competitive and anti-competitive effects must be conducted in every particular case.").

[223] Lemley & Leslie, *supra* note 206, at 1214–15 ("[I]n rule of reason cases 'the factfinder weighs all of the circumstances of a case in deciding whether a restrictive practice should be prohibited as imposing an unreasonable restraint on competition.' Under the rule of reason, courts take 'into account a variety of factors, including specific information about the relevant business, its condition before and after the restraint was imposed, and the restraint's history, nature, and effect.'") (citing State Oil Co. v. Khan, 522 U.S. 3, 10 (1997)).

[224] *See supra* Part I.A.2 for details on the objects and effects limb analysis under the TFEU.

[225] *Supra* Part I.A.2

[226] *See* Case T-168/01, GlaxoSmithKline Services Unlimited v Comm'n, 2006 E.C.R. II–2969, ¶ 233; Case T-17/93, Matra Hachette v Comm'n, 1994 E.C.R. II–595, ¶ 85.

[227] Jones & Kovacic, *supra* note 45, at 289 (pointing out that the TFEU approach is conceptually different despite certain similarities. "Although in some cases the EU courts have gone out of their way to stress that that they do no conduct a US-style rule of reason, the appraisal conducted in each does involve some loose form of balancing or consideration of the agreements benefits raised by the defendant against harms at the Article 101(1) stage, the very analysis that the Commission states is reserved for Article 101(3).") (footnote omitted).

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countervailing benefits of an impugned agreement is admissible in weighting the rule of reason, Art 101(1) TFEU focuses solely on anti- and not pro-competitive effects.[228]

Nevertheless, while it is theoretically possible for firms to discharge themselves of liability under Art 101(3) in objects cases, in practice it is difficult to bring agreements found anti-competitive by object within the ambit of Art 101(3).[229] Jones and Sufrin have argued that categorizing agreements exemptible under Art 101(3) as object-type agreements would subvert the objectives underpinning Art 101 because it would "create a risk of infringement for technical reasons… and wrongly [condemn] pro-competitive agreements."[230]

We can therefore situate analysis under *per se* rules, the object limb, and the rule of reason on a spectrum of increasing differentiation.[231] Indeed, the European Union's treatment of certain information exchanges as object-type infringements[232] involves trading off higher error costs (mainly in relation to Type I errors)[233] for administrative and predictive economy. As we will argue in the following sections, this trade-off is suboptimal in the context of the EU competition regime.

C: Object-Type Infringements for Information Exchange – Error Costs

Undifferentiated rules are particularly costly where the categorical distinctions supporting the application of these rules are improperly drawn or where the categorical distinctions are not clearly defined. As Lemley and Leslie explain, optimal categorical analysis in antitrust requires that the categories of prohibited conduct are properly defined pursuant to empirical evidence,[234] and that any categorical analysis does not encroach into a standards analysis such that its clarity is lost.[235] Where these criteria are

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[228] *See supra* Part I.A.2.

[229] Alison Jones, *Left Behind by Modernisation? Restrictions by Object Under Article 101(1)*, 6 EUR. COMPETITION J. 649, 669 (2011) ("[T]he difficulty . . . is that a strong presumption has been created that [object] restraints will not satisfy the conditions of Article 101(3), and the modernisation process may have made it more difficult for those seeking to rebut that presumption.").

[230] JONES & SUFRIN, *supra* note 3, at 209.

[231] Jones & Kovacic, *supra* note 45, at 256 (making the important point that "the difference between rules and standards is a matter of degree, and the line between them can be fine"). We do not take a stance on the relative position of an effects limb analysis vis-à-vis its other counterparts (analysis under the *per se* rule, the object limb, and the rule of reason) on a spectrum of increasing differentiation, although we would opine that it would be *prima facie* less differentiated than the rule of reason, as Art 101's bifurcated structure necessarily constrains the scope of the court's analysis.

[232] As compared to the U.S regime, which examines all information exchanges under the rule of reason.

[233] *See infra* Part III.B.

[234] *See* Lemley & Leslie, *supra* note 206, at 1366 ("Categories should reflect the wisdom of empirical evidence. . . . After courts have seen a particular type of restraint and have condemned it repeatedly under a rule of reason analysis, that category of restraint warrants per se condemnation because courts can 'predict with confidence that the rule of reason will condemn it. . . .'") (citing Arizona v. Maricopa County Med. Soc'y, 457 U.S. 332, 344 (1982)).

[235] *Id.* at 1262–63 ("[W]hile categorical reasoning and per se rules are supposed to increase predictability and consistency, these benefits of categorical analysis have gone largely unrealized. Shifting categories that leave ill-defined categories in their wakes reduce the predictability and clarity of antitrust doctrine. . . . The error costs associated with the categorical approach in antitrust are not offset by administrative savings because, as we have shown, categorical analysis often requires more effort than an inquiry into the actual competitive effects of a challenged restraint. In short, the categorical approach entails both error costs and administrative costs—the worst of both worlds."). Note that Lemley and Leslie also

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not satisfied, inefficiency arises in two forms. In the former, inefficiency arises from an increase in *error* costs. In the latter, inefficiency arises from an increase in *regulatory* costs. We shall discuss both of these inefficiencies in turn.

Can a categorical approach to reviewing instances of information exchange be sustained in accordance with the prevailing empirical evidence? Once the prophylactic nature of a rule prohibiting information exchange is considered, it is easy to see why this criterion is difficult to satisfy. Recall that the chain of causation with regard to economic harm under a prophylactic rule is likely to be more remote and thus more error-prone than the chain of causation under two alternative rules—(i) where actual economic harm has to be proven and (ii) where actual economic harm is inferred under a *per se* rule.[236] Unlike the latter two rules,[237] a probabilistic inference is sufficient to ground liability here—no actual economic harm is necessarily inferred from the primary fact that the conduct has occurred. Therefore, with information exchanges, there is a greater inherent risk that conduct that does not ultimately lead to actual economic harm is wrongly prohibited. Additionally, as we will explain later, it is well established that information exchanges have many pro-competitive effects, further increasing the risk of wrongful convictions.

The ambivalent nature of information exchanges thus limits the accuracy of categorical rules targeted at regulating them. Hence, we are of the opinion that *all* exchanges of information should be evaluated under a rule of reason framework of analysis, as any conceptual attempt to draw a dichotomy between object- and effect-type infringements in Art 101(1) is likely to be artificial and arbitrary. As the CJEU explained in *Cartes Baincares*, the inference of illegality under the object limb in Art 101(1) is premised on how such agreements may "be considered so likely to have negative effects, in particular on the price, quantity or quality of the goods and services, that it may be considered redundant, for the purposes of applying Article 101(1) TFEU, to prove that they have actual effects on the market."[238] This is in line with a common consensus amongst economists that naked cartel activity harms competition and is unlikely to have any countervailing benefits.[239] However, unlike hardcore restrictions of competition, it is not possible to generalize instances of information exchanges as being harmful to economic welfare while also lacking countervailing efficiencies. Thus, it cannot be said that information exchange would be, in the CJEU's own words, "by their very nature" injurious to competition.[240]

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identify additional requirements that we leave aside for this article, such as the requirement that courts do not rely on categories when the plaintiff has direct evidence of anticompetitive effects. *See id.* at 1365.

[236] *See supra* Part II.

[237] To reiterate, under the rule where anti-competitive harm is inferred, the inference of economic harm is a legal fiction, but antitrust law undertakes good policy reasons for prohibiting rebuttals against this inference. *See supra* Part II. Here we essentially argue that there are no such good policy reasons for prohibiting rebuttals with regard to instances of information exchange.

[238] *Cartes Bancaires*, 2014 EUR-Lex CELEX 62013CJ0067 ¶ 51.

[239] *See supra* note 115 (explaining naked cartels).

[240] *Cartes Bancaires*, 2014 EUR-Lex CELEX 62013CJ0067 ¶ 50 ("[C]ertain types of coordination between undertakings can be regarded, by their very nature, as being harmful to the proper functioning of normal competition.") (citations omitted). *See also* T-Mobile Netherlands, 2009 E.C.R. I–4529 ¶ 29 ("The distinction between 'infringements by object' and 'infringements by effect' arises from the fact that certain forms of collusion between undertakings can be regarded, by their very nature, as being injurious to the proper functioning of normal competition.") (citations omitted).

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More importantly, where information exchanges are concerned, the independence[241] of pro-competitive effects from anti-competitive effects has important implications for the existence of a general heuristic distinguishing inherently harmful instances of information exchange from more ambivalent ones.[242] In particular, the relative costs and benefits of information exchanges need not be negatively correlated—higher anti-competitive costs do not necessarily entail lower pro-competitive benefits (and vice-versa). Indeed, the very same information exchanges which ameliorate the sustainability of a collusive equilibrium may also enjoy a plethora of efficiency-enhancing benefits.

Consider the EC's categorization of exchanges of information regarding future strategic intentions of either price or quantity as restrictive of competition by object.[243] According to the EC, a key concern with such information exchanges is their ability to signal desired market outcomes without bearing the risk that such outcomes will not be followed by rivals.[244] For example, a firm can signal its intention to shift the market equilibria to a higher price point by announcing its future intention to do so. If none of its rivals commit to the intention, it can simply reverse its pricing decision *ex post*. On the other hand, if the firm commits to the new price and its rivals do not follow its signal, the firm will lose profits until it is able to reverse this commitment.

Nevertheless, such price announcements also give rise to important benefits in reducing consumer search costs that enhance the competitive process. For example, public announcements of pricing data allow consumers to compare different offers and to select firms with the best offers.[245] Crucially, public price announcements have a commitment value—once prices are announced, customers can act in reliance on them.[246] Thus, there is a cost to the firm in rescinding such a commitment. In light of this, it has been suggested that the EC is unlikely to treat public price announcements as infringements by object.[247] In *Wood Pulp II*, for example, the CJEU held that price

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[241] By "independence," we are referring to the notion that the pro-competitive effects of information exchange may be uncorrelated with their anti-competitive effects.

[242] *See infra* Part III.D.

[243] Horizontal Guidelines, *supra* note 61, ¶ 74 ("Information exchanges between competitors of individualised data regarding intended future prices or quantities should therefore be considered a restriction of competition by object.") (footnotes omitted).

[244] *Id.* ¶ 73 ("Exchanging information on companies' individualised intentions concerning future conduct regarding prices or quantities is particularly likely to lead to a collusive outcome. Informing each other about such intentions may allow competitors to arrive at a common higher price level without incurring the risk of losing market share or triggering a price war during the period of adjustment to new prices. Moreover, it is less likely that information exchanges concerning future intentions are made for pro-competitive reasons than exchanges of actual data.") (footnotes omitted) (citations omitted).

[245] *E.g.,* Peter A. Diamond, *A Model of Price Adjustment*, 3 J. ECON. THEORY 156 (1971) (showing where the optimal response of firms is to charge a monopoly price to consumers facing search costs, despite the presence of price dispersion); Paul Klemperer, *Switching Costs*, THE NEW PALGRAVE DICTIONARY OF ECONOMICS 125 (Steven N. Durlauf & Lawrence E. Blume eds., 2008) (showing where firms are able to maintain higher prices and earn higher profits in the presence of positive switching or search costs).

[246] In particular, customers may be able to subject the firm to contractual or tortious obligations under private law. If the firm rescinds the commitment, it may be in breach of these obligations.

[247] *See* Horizontal Guidelines, *supra* note 61, ¶ 92 ("In general, exchanges of genuinely public information are unlikely to constitute an infringement of Article 101.") (footnote omitted). *Cf.* Commission Decision of 7.7.2016 relating to a proceeding under Article 101 of the Treaty on the Functioning of the European Union and Article 53 of the EEA Agreement (Case AT.39850 Container

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announcements do not in themselves constitute market behavior that lessens each firm's uncertainty as to the future attitude of its competitors, since at the time it makes the announcement it cannot be sure of the future conduct of others.[248]

While ostensibly attractive, this analysis is deeply problematic. First, while purportedly prohibiting the disclosure of future strategic intentions among firms, the crux of the injurious nature of such information exchanges lies in the firm's inability to commit to a price. Despite this, the public disclosure of future strategic intentions need not involve any costly commitment to a price. For example, a firm might publicly announce a future price increase, but then revert to the current price if other firms do not follow suit with similar announcements.[249] Moreover, the same announcement could well be in the interests of consumers who might want to know in advance the prices they will have to pay. More generally, a public price announcement of future strategic intentions may have *both* pro and anti-competitive effects.

Second, a given firm's ability to commit to a price has little to do with the ability of the price signal[250] to ameliorate the existence of a collusive equilibrium. A firm intending to communicate price changes to its customers may well commit to a price that is contractually binding on the firm. But the same could be said of a firm that is confident in its signal's ability to shift the market to a collusive equilibrium, perhaps due to its status as a market leader.[251] Consider a market leader playing a reversionary strategy in a repeated-game setting. Where the market leader commits to a given price level, it would indeed suffer short-term losses if the rest of the firms do not follow its lead. Following such an outcome, the market leader could revert to a non-cooperative strategy for an extended period of time to punish its rival firms. Such a threat, however, would induce these rivals to follow the market leader's price setting in the first place. Indeed, the argument relating price-commitment to economic harm can be turned on its

Shipping), C[2016] 4215 (raising concerns that an information exchange between shipping container providers involving public announcements of the amount and implementation date of intended price increases could be an anticompetitive concerted practice contrary to Art 101(1) TFEU notwithstanding its public nature, and noting that the parties had committed to discontinuing the practice without admitting liability.).

[248] *Wood Pulp II*, 1993 E.C.R. ¶ 63–64 ("[A] concerted practice refers to a form of coordination between undertakings which, without having been taken to the stage where an agreement properly so-called has been concluded, knowingly substitutes for the risks of competition practical cooperation between them. . . . In this case, . . . the price announcements made to users . . . does not lessen each undertaking's uncertainty as to the future attitude of its competitors. At the time when each undertaking engages in such behaviour, it cannot be sure of the future conduct of the others.").

[249] MOTTA, *supra* note 4, at 174.

[250] The price signal here refers to the price announcement made by the firm.

[251] *See generally* Sandeep Baliga & Stephen Morris, *Co-ordination, Spillovers and Cheap Talk*, 105 J. ECON. THEORY 450 (2002) (exploring the general case of coordination games with strategic complementarities and positive spillovers (where "each player would prefer that the other players choose higher actions") and showing that in such settings, which includes the specific case of oligopolies attempting to coordinate higher prices, the ability for one player to credibly communicate an intention to play the higher action facilitates the higher equilibrium. This is essentially because the lead player who announces his intentions first will trade off the expected returns from the commitment value of its signal (as compared to a signal which will be discounted by rival firms as cheap talk) vis-à-vis the expected losses from the situation where its rivals do not increase prices after the leader has committed to a given price.).

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head. Insofar as credibility plays an important role in sustaining tacit coordination,[252] a firm's ability to commit to a price may actually enhance the possibility of a collusive equilibrium. On the other hand, there is a strong possibility that non-binding and non-verifiable information ("cheap talk") may be discounted by firms.[253] Such information could ultimately have no effect on inter-firm coordination.

This is not to say that the exchange of cheap talk information does not give rise to antitrust concerns. A large volume of literature has been written on the positive role of cheap talk communication in achieving coordination amongst players in games with multiple equilibria.[254] However, it would be preposterous to simply adopt a general proposition that information exchanges are inherently harmful to economic welfare given that an equilibrium where information is ignored always exists.[255]

Similar arguments may be made in relation to the market characteristics and the characteristics of the information exchanged that influence the welfare effects of information exchanges.[256] For example, the existence of concentrated markets, the strategic significance of the information, the degree of information aggregation, the frequency of information exchange, and the public/private nature of the information shared are all relevant factors in determining whether a given instance of information exchange is anti-competitive or not.[257] As alluded to earlier, the imperative point regarding these factors, however, is the fact that different factors may pull in opposing directions.[258] An information exchange that is made in public is less likely to have a restrictive effect on competition; but the relevant exchange may take place in a highly concentrated market with firms that have symmetric costs and frequent interactions with each other. Similarly, exchanges of information concerning input costs are less likely to be viewed as strategic, but such exchanges may be highly disaggregated and conducted in a private setting. Thus, it is quite impossible to determine specific instances of information exchange that would be "considered so likely to have negative effects … that it may be considered redundant… to prove that they have actual effects

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[252] *Id.*

[253] *See* Joseph Farrell & Matthew Rabin, *Cheap Talk*, 10 J. ECON. PERSPECT. 103 (1996) (demonstrating various situations, including where parties prefer different outcomes, where cheap talk will be disregarded and thus would not lead to any specific Nash equilibria, particularly efficient ones).

[254] The seminal article is Joseph Farrell, *Cheap Talk, Coordination, and Entry*, 18 RAND J. ECON. 34 (1987). For subsequent work *see, e.g.,* Farrell & Rabin, *supra* note 253; Baliga & Morris, *supra* note 251; John Duffy & Nick Feltovich, *Do Actions Speak Louder than Words? An Experimental Comparison of Observation and Cheap Talk*, 39 GAMES AND ECON. BEHAV. 1 (2002); Matthias Sutter & Christina Strassmair, *Communication, Cooperation and Collusion in Team Tournaments—An Experimental Study*, 66 GAMES AND ECON. BEHAV. 506 (2009); Raimo P. Hämäläinen & Ilkka Leppänen, *Cheap Talk and Cooperation in Stackelberg Games*, 25 CENT. EUR. J. OPER. RES. 261 (2017).

[255] Farrell & Rabin, *supra* note 253, at 108 ("Such a 'babbling' equilibrium [where firms completely ignore cheap talk communication between firms *inter se*] always exists.").

[256] An enormous amount of literature covers the different market and information characteristics that influence the welfare effects of bilateral communications. A detailed discussion of the literature is beyond the scope of this paper. For a general overview, *see* Bennett & Collins, *supra* note 6.

[257] Other relevant factors include the stability of supply and demand, cost symmetries, the frequency of firm interactions, and the existence of barriers to entry. *See* Horizontal Guidelines, *supra* note 61, ¶ 83–94 (identifying each of these factors as relevant to the competition assessment under Art 101(1) TFEU); FAULL & NIKPAY, *supra* note 71, at 995–1005 (providing further background on the same factors).

[258] *See supra* Part III.C.

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on the market."[259] Any attempt at such categorization is likely to be conceptually incoherent and arbitrary.

D: Object-Type Infringements for Information Exchange—Regulatory Costs

As we mentioned earlier, categorical, bright-line rules increase error costs, but provide benefits through the provision of legal certainty to parties.[260] However, the efficacy of this seems to be limited in the EU competition regime. Consider the controversy surrounding *T-Mobile*[261] and the subsequent *Bananas c*ase.[262] In the former, five Dutch mobile network operators held a meeting where they discussed the reduction of dealer remunerations for post-paid subscriptions.[263] The parties also discussed confidential information, although it is unclear from the CJEU's judgment what the precise content of the information was.[264] After elaborating on its general approach in determining whether firm conduct would amount to a violation of object or effect, the CJEU proceeded to issue several troubling statements concerning such infringements in the context of information exchange. According to the CJEU:

> [A]n exchange of information which is *capable of removing uncertainties* between participants as regards the timing, extent and details of the *modifications to be adopted by the undertaking concerned* must be regarded as pursuing an anticompetitive object. . . ."[265]

Somewhat ironically, the "capable of removing uncertainties" test has generated significant uncertainty with regard to the legal position. *T-Mobile* may be read to stand for two related propositions that differ in their scope. First, *T-Mobile* can be read to stand for the broad proposition that information exchanges may be considered quasi-*per se* infringements in their own right, even if such exchanges are part of a wider cartel scheme. This is relatively uncontroversial.[266] As Faull and Nikpay point out, a direct link between the concerted practice of information exchange and the outcome was not established in the case.[267] Second, *T-Mobile* can be read narrowly for the proposition that any private information exchange designed to remove uncertainties concerning the intended conduct of the participating firms and thus facilitating the fixing of selling prices falls within the category of restraints that are restrictive by object. The risk of wrongfully condemning pro-competitive behavior is very large here, and not surprisingly, numerous commentators have criticized this particular legal test. Jones

[259] *Cartes Bancaires*, 2014 EUR-Lex CELEX 62013CJ0067 ¶ 51.

[260] Through the form of reducing predictability costs.

[261] *T-Mobile Netherlands*, 2009 E.C.R. I–4529.

[262] Case C-286/13 P, Dole Food Co Inc v Comm'n, 2015 EUR-Lex CELEX 62013CJ0286 (Mar. 19, 2015).

[263] *T-Mobile Netherlands*, 2009 E.C.R. ¶ 10–12.

[264] *Id.* ¶ 12 (noting that confidential information was exchanged, but without specifying details).

[265] *Id.* ¶ 41 (emphasis added).

[266] See the earlier discussion in Part I.D.2, particularly the discussion on *Thyssen Stahl v Comm'n*, 1999 E.C.R. II-347.

[267] FAULL & NIKPAY, *supra* note 71, at 1046.

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and Sufrin argue that the CJEU "went further than perhaps was required for the case,"[268] and that the statements in *T-Mobile* "extend the category of object restraints to an overtly broad and somewhat uncertain group of information-exchange agreements."[269] Meyring notes the absurdity inherent in a literal reading of the test,[270] since any information exchange is certainly "capable of removing uncertainties" between participants, and thus argues that a narrow reading of *T-Mobile* is necessary in light of other developments in the case law.[271] However, a constrained reading of the test raises the question of why the information exchange at hand was viewed as a separate infringement of competition law distinct from the underlying cartel scheme. In our view, it would be conceptually neater to view the information exchange as probative evidence in inferring the existence of a price-fixing cartel, rather than as a separate violation of the law.

Subsequent CJEU decisions have not resolved this uncertainty. In *Bananas*,[272] several employees of firms active in the banana trade made bilateral calls to discuss information relating to the setting of quotation prices for coming weeks.[273] Importantly, it was unclear whether actual market prices were influenced because the quotation prices were neither actual prices nor the basis for negotiation of the actual prices.[274] Moreover, the EC did not contest that the employees taking part in these discussions had no authority to set quotation prices.[275] The firms in question thus attempted to argue that the pre-pricing communications did not remove uncertainty as to the setting of

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[268] JONES & SUFRIN, *supra* note 3, at 683.

[269] *Id.* But note that in contrast to our analysis, Jones and Sufrin do not provide reasons as to why the statements in *T-Mobile* are overly broad—they simply state the proposition as one that is self-evident.

[270] As Meyring notes, this would render the effect limb completely otiose "because practices that are not even capable of having anticompetitive effects will not produce such effects in any event—and all other restrictions would be restrictions by object." Bernd Meyring, *T-Mobile: Further Confusion on Information Exchanges Between Competitors Case C-8/08 T-Mobile Netherlands and Others [2009] ECR 0000*, 1 J. EUR. COMPETITION L. PRAC. 30, 31 (2010).

[271] *Id.* at 32 ("Whereas the Court's *John Deere* judgment had used a checklist approach to analyse the effects of an information exchange between competitors, the Maritime Transport Guidelines and the cases on AC Nielsen in Finland, Norway, and Sweden have moved to a more economic approach to effects. The ECJ's judgment in *T-Mobile Netherlands* should not be misinterpreted as advocating a simplistic *per se* approach to such cases. Rather, it makes clear that an information exchange that is ancillary to a cartel must be treated together with the cartel and as a *per se* violation. The Court could have stated this more clearly."). *See also Cartes Bancaires*, 2014 EUR-Lex CELEX 62013CJ0067 ¶ 58 ("[T]he General Court erred in finding . . . that the concept of restriction of competition by 'object' must not be interpreted 'restrictively.' The concept of restriction of competition 'by object' can be applied only to certain types of coordination between undertakings which reveal a sufficient degree of harm to competition that it may be found that there is no need to examine their effects, otherwise the Commission would be exempted from the obligation to prove the actual effects on the market of agreements which are in no way established to be, by their very nature, harmful to the proper functioning of normal competition.").

[272] *Dole Food*, 2015 EUR-Lex CELEX 62013CJ0286.

[273] *Id.* ¶ 14.

[274] *Id.* ¶ 13 (noting that actual prices would be a result of subsequent negotiations between the parties and downstream retailers or distributors, but also that quotation prices could have been used in calculating actual prices).

[275] *Id.* ¶ 102.

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actual prices, and so would not constitute restrictions of competition by object.[276] On appeal, the CJEU rejected this argument. Citing *T-Mobile* with approval, the CJEU upheld the EC's finding that the employees' conduct "made it possible to reduce uncertainty for each of the participants as to the foreseeable conduct of competitors,"[277] and therefore amounted to a restriction of competition by object.

The CJEU's holding is of particular concern given the factual matrix of *Bananas*, and the criticisms of *T-Mobile* are especially apposite here. In *T-Mobile*, it had been suggested that the aim of information exchange amongst the network providers was to determine the appropriate future levels of remuneration.[278] In other words, the levels of remuneration were not unilaterally set and then exchanged—they were discussed, implying that the aim of the conversations was to reach a consensus on the aforementioned levels. Given the high probability of actual economic harm resulting from the information exchange in *T-Mobile*, it is difficult to disagree with the ultimate finding of the CJEU with regard to the firms' liability.[279] The same cannot be said for *Bananas* where the chain of causation with regard to actual economic harm was far more remote. As stated earlier, the pre-pricing communications were made in relation to hypothetical quotations by employees far removed from the actual pricing process.[280] Nevertheless, the EC imposed a fine of €60.3 million on the participants for the infringement.[281]

As mentioned above, categorical, bright-line rules also purport to reduce administrative costs, such as the litigation costs incurred by enforcement agencies and litigants. Unfortunately, there is little evidence that the characterization of certain instances of information exchange as object-type infringements has led to significant administrative cost savings. As Lemley and Leslie point out, ill-defined categories could lead to both error costs and regulatory costs—the "worst of both worlds."[282] Indeed, EU litigation on information exchanges remains protracted and tedious for such object-type cases. The CJEUs final decision in *Bananas* was handed down in March 2015, ten years after one of the cartel participants had first applied for whistleblower leniency in April 2005,[283] and six and a half years after the EC's infringement decision in October 2008.[284] To be sure, the extended time taken in *Bananas* may be partly

[276] *Id.* ¶ 106 (noting the Dole companies' argument that "as those communications concerned quotation price trends, they were not capable of removing uncertainty as to actual prices").

[277] *Id.* ¶ 134.

[278] Advocate-General Kokott sets out in her opinion that the discussions indeed resulted in a coordination of market conduct. *See T-Mobile Netherlands*, 2009 E.C.R. (Opinion of Advocate-General Kokott) ¶ 36.

[279] To clarify, we are satisfied with the ultimate incidence of liability in *T-Mobile Netherlands*. However, we disagree with the reasoning adopted by the CJEU in the determination of such liability.

[280] The inter-firm communications in question have been described, albeit outside an academic context, as "little more than the gossip of irrelevant employees with regard to quotations far removed from actual prices." *See* Alfonso Lamadrid, *Bananas – Case C-286/13 P, Dole v Commission*, Chillin' Competition Blog (Apr 28, 2015), https://chillingcompetition.com/2015/04/28/bananas-case-c-28613-p-dole-v-commission/.

[281] *See Dole Food*, 2015 EUR-Lex CELEX 62013CJ0286 ¶ 28 (setting out the two fines imposed by the EC amounting to €45.6 million and €14.7 million respectively).

[282] Lemley & Leslie, *supra* note 206, at 1263.

[283] *Dole Food*, 2015 EUR-Lex CELEX 62013CJ0286 ¶ 4.

[284] *Id.* ¶ 7. Indeed, this provides another source of predictability costs. *See* STEFAN VOIGT & ANDRÉ SCHMIDT, MAKING EUROPEAN MERGER POLICY MORE PREDICTABLE 3 (2005) ("Legal certainty also has

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attributed to factors other than the intensity of evidentiary review, since a larger price-coordination cartel was alleged in the case. Nevertheless, the issue of whether the information exchange should have been characterized as evidence of that price-coordination cartel or as a stand-alone, object-type infringement was litigated in every stage of the proceedings,[285] notwithstanding AG Stix-Hackl's explanation of the distinction between the two in her opinion in *Thyssen*.[286]

Differences in the levels of private enforcement[287] across the EU and U.S. antitrust regimes further highlight how any administrative cost savings in the EU regime are likely to be limited. As Crane points out, the cost advantages of undifferentiated rules over differentiated standards are far more apparent in private enforcement as compared to public enforcement.[288] Since private parties tend to lack the institutional competence, financial means, and legislative powers needed to conduct fact-intensive inquiries, they are unlikely to initiate proceedings unless they perceive a high probability of a successful outcome—a perception that is less likely to arise under

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a time dimension. For entrepreneurial action in general and for mergers in particular, timing is often crucial. It is therefore not only important to get the right decision at all but to get it in time.").

[285] The European Commission's original decision explicitly stated that the Commission "does not find that the exchange of quotation prices between the parties after these prices had been set in itself gives rise to a distinct infringement of [the predecessor to Art 101(1) TFEU]. Rather, . . . the exchange of quotation prices enabled them to monitor the individual parties' quotation pricing decisions in the light of pre-pricing communications which took place between parties beforehand." EC Commission Decision of 15.10.2008 relating to a proceeding under Article 81 of the EC Treaty (Case COMP/39188 - Bananas), C(2008) 5955 (2008) ¶ 273. On appeal to the General Court, the firms argued that the Commission had wrongly distinguished between pre-pricing and *ex post* communications. The General Court rejected this, holding that "for the Commission, those exchanges of quotation prices . . . did not . . . constitute a separate infringement, but a mechanism for monitoring the outcome that contributed to the [cartel arrangements]." *Dole Food*, 2008 EUR-Lex CELEX 62008TJ0588 ¶ 76. But on further appeal to the ECJ, the firms again argued that the information exchange in itself could not constitute an object-type infringement. This time, the ECJ did not clarify that the information exchange was but a means of monitoring the cartel. Instead, the ECJ recited principles from case law (such as *T-Mobile*) that centered on stand-alone information exchanges, and ultimately held it "permissible for the [courts below] to conclude that . . . the pre-pricing communications had the object of creating conditions of competition that do not correspond to the normal conditions on the market and therefore gave rise to a concerted practice having as its object the restriction of competition." *Dole Food*, 2015 EUR-Lex CELEX 62013CJ0286 ¶ 105–34.

[286] This is explained in Part I.D.2.

[287] Private parties have standing to sue in antitrust proceedings where they are harmed by the anti-competitive activity. For example, a downstream distributor who suffers harm caused by an upstream manufacturer cartel has a private right of action to sue the cartel members for that harm. *See* § 15 U.S.C. § 26. In the European Union, private rights of action are provided for by national competition laws enacted by member states. *See generally* Georg Berrisch et al., *E.U. Competition and Private Actions for Damages*, 24 NW. J. INT'L L. & BUS. 585 (2004).

[288] Daniel A. Crane, *Rules Versus Standards in Antitrust Adjudication*, 64 WASH. & LEE L. REV. 49, 99–101 (2006) ("Rules have the greatest advantage in governing classes of lawsuits likely to be decided by juries and to result in overdeterrence due to the uncertainty of standards or strategic abuse in litigation . . . leav[ing] private exclusionary conduct cases to post hoc, fact specific determination . . . commits ultimate decision-making about economic facts to ill-equipped juries, threatens to chill vigorous competitive behavior, invites strategic manipulation by rent-seeking competitors, and increases the costs of antitrust litigation. . . . Standards are paradigmatically most appropriate to govern public enforcement seeking prospective relief.").

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a more differentiated standard.[289] Thus, insofar as undifferentiated rules tend to lower litigation costs for private parties, we should expect undifferentiated rules to promote higher levels of private enforcement, *ceteris paribus*.[290] Despite this, "private enforcement has largely taken a backseat in the European Union, and enforcement by the EC is the norm rather than the exception."[291] In contrast, a large majority of antitrust enforcement in the United States stems from the private arena rather than from public agencies. While we do not dispute the fact that other factors also contribute to differences in private enforcement activity across the two regimes,[292] it is difficult to see how a categorical approach towards information exchange has led to a meaningful reduction in administrative costs.

Ultimately, such issues with an object-type classification of information exchanges under Art 101 TFEU harken back to the difficulties of defining when information exchanges can be said to "so likely… have negative effects" that an actual assessment of the effects following the information exchange can be safely "said to be redundant."[293] Tellingly, in an attempt to resolve the substantial uncertainties concerning when information exchanges may be considered as restrictions of competition by object, the EC issued a set of *Horizontal Cooperation Guidelines*[294] that articulate specific instances of conduct that the EC considers to be object-type restrictions. The Guidelines explain that exchanges of information regarding future strategic intentions of either price or quantity are restrictive of competition by object,[295] and they list other factors relevant to analyzing information exchanges.[296]

Thus, as compared to the "capable of removing uncertainties" test from *T-Mobile*, the Guidelines provide far clearer guidance as to the specific conduct that would constitute a restriction of competition by object. Nevertheless, unlike the CJEU case law, any Guidelines issued by the EC are not binding on the parties to whom they

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[289] *See id.* at 99 (noting that rules "have the greatest advantage" in the context of private enforcement because, amongst other reasons, rules allow a "high likelihood of detection of [anticompetitive] behavior," and that this applies to both exclusionary and, albeit to a lower extent, collusive conduct).

[290] To be sure, because standards are more open-ended and correlate to costlier, more extended litigation, a movement towards differentiated standards also creates more possibility for parties to launch abusive, rent-seeking litigation against competitors. *Id.* at 97–98. However, that standards litigation is costlier would also deter non-abusive claims. Further, as just mentioned, rules facilitate private detection of anticompetitive behavior. Thus, we argue that any increase in abusive litigation would likely be outweighed by a decrease in non-abusive litigation.

[291] Kenneth Khoo, *Regulating the Inferential Process in Alleged Article 101 TFEU Infringements*, 13 J. COMPETITION L. & ECON. 45, 63 (2017).

[292] *Id.* at 63 ("U.S. antitrust laws have been structured to incentivize private enforcement. Treble damages are granted to successful plaintiffs who have been injured by infringements of antitrust laws, injunctive relief is granted against a threatened loss or damage by a potential infringement, and successful plaintiffs are allowed to recover legal costs from defendants. . . . Historically, there have been many barriers to private litigation in the EU, and it was only in recent years that these barriers have gradually been lifted. Prior to the Damages Directive that was adopted in 2014, EU Legislation did not specifically address private rights of action—these principles only emerged from the EU case law in a piecemeal fashion, and led to considerable uncertainty for private litigants.") (footnotes omitted).

[293] *Cartes Bancaires*, 2014 EUR-Lex CELEX 62013CJ0067 ¶ 51.

[294] Horizontal Guidelines, *supra* note 61.

[295] *Id.* ¶ 75.

[296] *Id.* ¶ 86–94.

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are addressed.[297] This problem is compounded by the fact that there are substantial differences between the Guidelines and the relevant case law.[298] While the EC has attempted to advance a framework of competition enforcement that emphasizes the promotion of consumer welfare and economic efficiency,[299] the CJEU has often adopted a policy of strong adherence to established case law, which is often steeped in a philosophy centered around the protection of competitors and the upholding of the structure of competition.[300]

E. Information Exchange, the Bifurcated Approach of Art 101 TFEU and the Rule of Reason

In Part I, we raised the notion that the bifurcated structure of Art 101 has led to extensive debate as to the appropriate role of Art 101(1) and Art 101(3). In contrast to the U.S. antitrust regime, the bifurcated structure of Art 101 has critical implications for the evaluation of firm conduct with ambiguous welfare effects. Article 2 of Regulation 1/2003[301] provides that the burden of proving the existence of an infringement of Article 101(1) is on the person or competition authority alleging the infringement, while the burden of showing that Article 101(3) is satisfied is on the firm making the claim. Thus, under the EU competition regime, firms that are alleged to have infringed Art 101(1) pursuant to an anti-competitive instance of information exchange would bear the legal burden of proof of establishing efficiencies arising from that information exchange.[302]

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[297] *See* TFEU, *supra* note 22, art. 288 (which sets out the binding nature of regulations, directives and decisions, but not "guidelines" or "recommendations").

[298] The Guidelines also clearly distinguish between pure information exchanges and information exchanges tied to other horizontal cartels. This distinction is not always apparent in the CJEU's decisions. *Compare* Horizontal Guidelines, *supra* note 61 ¶ 56 ("Information exchange takes place in different contexts. There are agreements, decisions by associations of undertakings, or concerted practices under which information is exchanged, where the main economic function lies in the exchange of information itself. Moreover, information exchange can be part of another type of horizontal co-operation agreement (for example, the parties to a production agreement share certain information on costs). The assessment of the latter type of information exchanges should be carried out in the context of the assessment of the horizontal co-operation agreement itself.") *with Dole Food*, 2015 EUR-Lex CELEX 62013CJ0286 ¶ 105–34 (where the ECJ seemed to treat the information exchange as a stand-alone infringement when the lower courts had found the exchange to be but a means of monitoring a price-fixing cartel).

[299] *See supra* note 16 (on the "modernization" of EU competition law).

[300] *See*, *e.g.*, *supra* note 14 (explaining *Europemballage*, 1973 E.C.R. 215); *British Airways*, 2007 E.C.R. 2331.

[301] Implemented pursuant to Article 103 TFEU, replacing Regulation 17 of 1962 on May 1, 2004. Council Regulation (EC) No 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty, Dec. 16, 2002, 2003 O.J. (L 1) 1.

[302] Here we refer to a balanced approach where harms and benefits are directly squared off rather than the so-called structured rule of reason that mirrors the problematic Art 101 TFEU structure. Thus, our arguments support Kaplow's systematic critique of the structured rule of reason. *See generally* Kaplow, *Design of Legal Rules*, *supra* note 207 (arguing that structured decision rules generally produce inferior final decisions, in terms of cost-benefit analysis, to unconstrained balancing approaches including when used in the antitrust context); Kaplow, *Balanced Versus Structured Decision Procedures, supra* note 207, at 1391–409 (applying the theoretical framework developed in the preceding article to specifically critique recent movements towards a three-step structured decision procedure for applying rule of reason analysis in U.S. antitrust cases).

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While three proposals[303] have been suggested in relation to how an alleged instance of anti-competitive conduct should be evaluated under Art 101(1) and Art 101(3), none of the proposals provide satisfactory solutions to the problems described above. Under the two approaches more favorable to the defendant,[304] for example, the problem of determining information exchanges that are *prima facie* anti-competitive still exists. We argued in Part II.C. that this is not a tenable position because it would have rendered the object limb and Art 101(3) completely otiose.[305] Furthermore, such an approach goes against existing CJEU jurisprudence.[306] These objections also apply to any argument proposing that all information exchanges be regulated under the effects limb of Art 101(1).

The problem with the bifurcated regime of the EU competition regime lies with its inflexibility. In the U.S. antitrust regime, the courts and antitrust authorities are able to tailor the intensity of evidentiary evaluation in relation to the type of conduct at hand. Thus, for categories of conduct that have inherently ambiguous welfare effects, U.S. courts have been able to determine that the rule of reason is the appropriate evidentiary standard to evaluate such conduct.[307] In contrast, the EU competition regime straitjackets *all* facilitating practices under the framework of Art 101. In particular, Art 101(1) requires the classification of all facilitating practices as either the object or effect

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[303] *See supra* Part I.A.2.

[304] We refer to the second and third approaches. Under the second approach, a more detailed analysis is conducted to determine whether an agreement restricts competition under Art 101(1), while the scope of Art 101(3) is limited to exempt agreements that are *prima facie* anti-competitive agreements but nevertheless have demonstrable policy benefits. The third approach associates categorical forms of efficiency with the two limbs. For example, Art 101(1) could be concerned with allocative efficiency related to deadweight losses arising from restrictions of output, while Art 101(3) could be limited to issues of productive and dynamic efficiency independent of allocative efficiency concern.

[305] *See supra* note 25. As Kaplow points out, one way for a structured decision process (like the TFEU) to guarantee accuracy, in the sense of only prohibiting conduct where harm outweighs benefit, is to render the analysis at the benefits stage otiose by settling the required threshold at the harms stage strictly higher than the required threshold at the benefits stage. However, rendering the benefits stage pointless is something which the CJEU would probably not accept given its interpretative constraints. *See* Kaplow, *Design of Legal Rules*, *supra* note 207, at 1001 ("[S]uppose that [the required threshold for harm exceeds the required threshold for benefits]. Then this problem [of inaccurate classification] cannot arise…precisely because [the benefits analysis] is rendered redundant in the following sense: If, after step 1, we had gone straight to balancing, we would have assigned liability only when [the harm from the conduct exceeds its benefits]. But we already know from step 1 that [the harm from the conduct exceeds the required threshold], and we are assuming that our protocol sets [a higher threshold for harm than benefits], which implies that, as we leave step 1, we know that [the harm from the conduct exceeds the benefits threshold]. It is pointless to ask first whether [the benefit from the conduct] is at least as high as [the benefits threshold] when, if it is, we will then immediately ask whether it is at least as high as [the harm from the conduct], a more demanding test.").

[306] *E.g., T-Mobile Netherlands*, 2009 E.C.R. I-4529. The first approach is even more unsatisfactory. Under the first approach, the firm is expected to bear the burden of proof in establishing efficiencies despite engaging in information exchanges that may be (in actual fact) highly pro-competitive. Given the intrinsic difficulties associated with discharging the burden under Art 101(3), it is likely that many such pro-competitive exchanges would be incorrectly held as anti-competitive.

[307] This is true not only for categories of conduct relating to facilitating practices, but also for vertical agreements. *See* Leegin Creative Leather Prods. v. PSKS, Inc., 551 U.S. 877 (2007) (where the Supreme Court held that vertical price restraints are to be judged by the rule of reason).

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limb.[308] However, underlying Art 101 is the assumption that certain practices are inherently injurious to competition.[309] Such assumptions may simply be untenable as a matter of fact in accordance with prevailing economic theory and our understanding of the empirical evidence in support of those assumptions.

Art 101 also assumes that the defendant firm is better placed to establish quantifiable efficiencies arising from its own conduct.[310] While this may be true in relation to certain forms of efficiencies (such as productive efficiencies arising from synergistic mergers), it may be close to impossible in relation to other forms of pro-competitive efficiencies, many of which arise in conduct alleged to be facilitating practices. For instance, how would a firm be able to establish efficiencies in the reduction of consumer search costs? Unlike the estimation of potential cost reductions, the search costs of consumers are unobserved by the firm in question. The fact that the benefits arising from information exchanges are independent from their costs compounds the problem, as the defendant firm is required to invoke Art 101(3)[311] to defend an alleged instance of information exchange that simultaneously ameliorates collusion while also improving allocative efficiency.[312] As the defendant firm's burden of proof under Art 101(3) goes beyond the establishment of pro-competitive efficiencies, and requires the firm to show, *inter alia*, that the conduct would not lead to an elimination of competition in the market,[313] it is hence likely that many such pro-competitive exchanges would be incorrectly held as anti-competitive.

We have argued in Part II above that the prophylactic nature of a rule prohibiting certain forms of information exchange makes the relevant analysis similar to that conducted in a merger regulation setting—the extent to which an instance of

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[308] Jones makes a similar point in relation to firms having to contort efficiency arguments to fulfill the rubric of Art 101(3). *See* Jones, *supra* note 229, at 652 ("Eventually the Commission did embark on a journey toward the reform advocated, seeking to deal with the central problem that too many agreements were being sucked into Article 101(1) and then forced into straitjackets in order to satisfy the conditions of Article 101(3).").

[309] Pursuant to both the object/effect distinction provided in Art 101(1) and the bifurcated structure of the legislation, with the firm having an onerous burden of proof under Art 101(3).

[310] This is because efficiencies are only considered under Art 101(3) and the defendant firm has the burden to prove the defense in Art 101(3). We described this in more detail in Part I.

[311] Invoking Art 101(3) in every instance where the firm is better placed to adduce evidence also subverts the presumption of innocence. However, such considerations are beyond the scope of this article. *See generally* Marco Bronckers & Anne Vallery, *No Longer Presumed Guilty? The Impact of Fundamental Rights on Certain Dogmas of EU Competition Law*, 34 WORLD COMPETITION L. & ECON. REV. 535 (2011) (arguing that certain administrative presumptions in EU competition law conflict with the fundamental presumption of innocence).

[312] Beyond the detrimental effects on welfare through the amelioration of a collusive equilibrium.

[313] As Jones argues, the burden of proof that the firm has to discharge under the "net economic benefit" exception is non-trivial and requires proof of a series of onerous requirements—including (i) substantiated efficiencies by showing the nature of the claimed efficiencies, the link between the agreement and the efficiencies, the likelihood and magnitude of each claimed efficiency, and how and when each claimed efficiency would be achieved; (ii) that the restrictive agreement as such is reasonably necessary in order to achieve the efficiencies and that the individual restrictions of competition that flow from the agreement are reasonably necessary for the attainment of the efficiencies; and (iii) that the agreement as a whole must not lead to the elimination of competition. Indeed, the difficulty of discharging the burden of proof in an overtly formalistic regime will not result in a substantial amelioration of false positives or Type I errors (wrongful condemnations). Jones, *supra* note 229, at 669–70.

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information exchange affects competition depends on how difficult coordination would be absent the exchange. The appropriate inquiry to be conducted here is thus very much analogous to a coordinated effects analysis within merger control,[314] where a reduction in uncertainty facing a firm is evaluated in the context of the structure of the market in question and the characteristics of the information exchanged. This can take place even in the absence of robust econometric analysis.[315] Indeed, the adoption of a U.S. style rule of reason approach towards all instances of information exchanges does not envisage a rigorous bar that may prove close to impossible for the plaintiff to discharge. Rather, as opposed to the use of formalistic presumptions, we emphasize the normative desirability of using context-specific rules to evaluate information exchanges.

CONCLUSION

In this article, we have attempted to characterize the prophylactic nature of the antitrust rules prohibiting stand-alone instances of information exchange in both EU and U.S. antitrust law. Given the nature of such rules, we have argued that Art 101 TFEU is particularly problematic. In particular, the quasi-*per se* nature of the EU competition regime's treatment of such information exchanges may lead to significant wrongful convictions, a major cause of economic inefficiency. We have also argued that the increase in error costs following from such formalism is likely to outweigh any countervailing decrease in administrative costs. Thus, for a jurisdiction considering an appropriate framework to establish generic competition laws, there are good reasons to adopt a U.S. style rule of reason approach toward all instances of information exchange.

Given the convergence in the objectives of U.S. and EU competition policy, the considerable divergence in antitrust enforcement that remains is worthy of attention. As a majority of competition regimes in jurisdictions around the world resemble EU competition laws more closely than U.S. antitrust laws, this article also aims to promote a more critical application of foreign decisions in the local context. In particular, we highlight an instance of how overly formalistic rules may be inefficient, subverting the welfarist objective of antitrust laws.

[314] This is a similarity which the EC's Guidelines also note. *See* Horizontal Guidelines, *supra* note 61, ¶ 21 ("The analysis of horizontal co-operation agreements has certain common elements with the analysis of horizontal mergers pertaining to the potential restrictive effects."). *See also* Case C-413/06 P, Bertelsmann AG and Sony Corporation of America v. Independent Music Publishers and Labels Ass'c. (Impala), 2008 E.C.R. I–4951 ¶ 122–23 (noting that a collective dominant position is more likely to tacitly arise between horizontal competitors when firms resort to collusive beahviour to adopted common market policies); Case T-342/99, Airtours v Comm'n, 2004 E.C.R. II–1785 ¶ 62 ("[E]ach member of the dominant oligopoly must have the ability to know how the other members are behaving in order to monitor whether or not they are adopting the common policy.").

[315] *See generally* Gregory J. Werden, *Product Differentiation: Simulating the Effects of Differentiated Products Mergers: A Practical Alternative to Structural Merger Policy*, 5 GEO. MASON L. REV. 363 (1997). Although new techniques are currently being developed, few econometric methods seem able to consistently estimate the magnitude of coordinated effects between merging parties and their rivals.

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