# ANTITRUST RIGHTS OF ACTION AND LENIENCY PROGRAMS

SINCHIT LAI*

## ABSTRACT

*Currently, most jurisdictions around the globe provide victims of cartels a full right of action. However, a few jurisdictions do not provide any right of action to victims (e.g., Pakistan and Sri Lanka), while a few others merely provide victims a follow-on but not standalone right of action (e.g., Singapore, India, and Hong Kong). To facilitate these jurisdictions to decide whether to amend their competition laws and provide some or more rights of action to private parties, this Article aims to offer an additional perspective for consideration—that is, does expanding rights of action itself encourage or discourage leniency applications? Given that leniency programs are a critical tool in combating cartels, if providing some or more rights promotes leniency applications, then such a relationship is in favor of an expansion of victims' rights. In contrast, if the two are negatively related, then lawmakers should be more cautious about the expansion. To analyze the impact that expanding rights of action has on leniency applications, this Article employs a game-theory model first created by Professor Joseph E. Harrington and later revised by the author.*

## I. INTRODUCTION

In the field of antitrust, hardcore cartel agreements ("cartels") are recognized internationally as the most harmful to society.[1] Cartels are generally conducted secretly and are difficult to detect.[2] With their limited resources, antitrust authorities cannot uncover all cartels.[3] This situation leads to two essential procedural devices that can help detect and combat cartels—private enforcement and leniency programs.

On the one hand, private enforcement involves the victims of competition law violations bringing lawsuits against wrongdoers (for example, cartel members), usually to recover damages. Private enforcement helps to detect cartels because private parties, as direct victims, have

* Assistant Professor, City University of Hong Kong. S.J.D., University of Pennsylvania. MEcon, University of Hong Kong. I sincerely thank participants at the Academic Society for Competition Law Asisa (ASCOLA Asia) regional workshop for insightful comments. All errors are my own.

[1] Hardcore cartels include price fixing, output restriction, market sharing and bid rigging agreements formed between competitors. OECD, RECOMMENDATION OF THE COUNCIL CONCERNING EFFECTIVE ACTION AGAINST HARD CORE CARTELS (Mar. 25, 1998), http://www.oecd.org/daf/competition/2350130.pdf [https://perma.cc/J4MB-6267].

[2] *Cartels Overview*, EUR. COMM'N, https://competition-policy.ec.europa.eu/cartels/cartels-overview_en [https://perma.cc/V2HK-LCML] (last visited Aug. 26, 2022).

[3] Žygimantas Juška, *The Effectiveness of Private Enforcement and Class Actions to Secure Antitrust Enforcement*, 62 ANTITRUST BULL. 603, 605 (2017).

proximate information on violations.[4] But the benefits of private antitrust enforcement go beyond cartel detection. After uncovering cartels, victims might bring an action against the cartels directly. If so, the antitrust authorities' goal of curbing cartel activities could be achieved without using their own enforcement resources. Alternatively, victims may report the cartels to antitrust authorities. However, due to lack of enforcement resources, sloth, or corruption, the authorities may not follow the leads and take action against the cartels. Hence, private enforcement may substitute public enforcement when antitrust authorities fail to act.[5] In addition, even if an antitrust authority takes action and a cartel is fined, its victims are not compensated for the harm suffered. This gap could be filled by private enforcement, which allows victims to seek damages. The potential of facing such damages actions helps to desist and deter cartel conduct. Further, victims bringing their cases to courts gives judges opportunities to clarify or even to perfect the law, which is constructive to the development of antitrust.[6]

On the other hand, leniency programs provide leniency, such as full immunity or a reduction of fines, to the cartel members who are the first ones—or among the first few—to blow the whistle on their cartel to antitrust authorities.[7] This gives cartel members an incentive to self-report their wrongdoings, hence assisting antitrust authorities to detect cartels.[8] Leniency programs also benefit societies in other ways. First, such programs help antitrust authorities save on enforcement resources. This is because, with the information on a given cartel surrendered by leniency applications, antitrust authorities can spend less cost and time on investigating and prosecuting the cartel.[9] Second, leniency programs make cartels more likely to be exposed, hence they desist[10] and deter[11] cartel conduct. Third, leniency programs raise victims' ability to seek redress. But as previously mentioned, cartels are conducted secretly. Therefore, victims might not be aware that they are being harmed by cartels until their wrongdoings are uncovered by leniency

[4] ERNEST GELLHORN, WILLIAM E. KOVACIC & STEPHEN CALKINS, ANTITRUST LAW AND ECONOMICS IN A NUTSHELL 543 (5th ed., 2004).

[5] *Id.*; Robert H. Lande & Joshua P. Davis, *Benefits from Private Antitrust Enforcement: An Analysis of Forty Cases*, 42 UNIV. S.F. L. REV. 879, 905 (2009).

[6] GELLHORN, *supra* note 4, at 526.

[7] *See* INT'L COMPETITION NETWORK, GOOD PRACTICES FOR INCENTIVISING LENIENCY APPLICATIONS 5 n.1, (Apr. 30, 2019), https://www.internationalcompetitionnetwork.org/wp-content/uploads/2019/05/CWG-Good-practices-for-incentivising-leniency.pdf [https://perma.cc/N7VM-3SG7] (describing different leniency programs).

[8] U.K. OFF. OF FAIR TRADING, APPLICATIONS FOR LENIENCY AND NO-ACTION IN CARTEL CASES—OFT'S DETAILED GUIDANCE ON THE PRINCIPLES AND PROCESS 6 (2013), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/284417/OFT1495.pdf [https://perma.cc/Z9XM-SDKX]; *see* Joseph E. Harrington, Jr. & Myong-Hun Chang, *Modeling the Birth and Death of Cartels with an Application to Evaluating Competition Policy*, 7 J. EUR. ECON. ASS'N 1400, 1418 (2009) (developing a model for estimating the creation and dissolution of cartels in light of competition policies).

[9] Steffen Brenner, *An Empirical Study of the European Corporate Leniency Program*, 27 INT. J. INDUS. ORG. 639, 644 (2009); OECD, FIGHTING HARD CORE CARTELS: HARM, EFFECTIVE SANCTIONS AND LENIENCY PROGRAMMES 11 (2002), https://www.oecd.org/competition/cartels/1841891.pdf [https://perma.cc/AN5M-B73B].

[10] Joseph E. Harrington, Jr., *Optimal Corporate Leniency Programs*, 56 J. INDUS. ECON. 215, 221 (2008).

[11] Nathan H. Miller, *Strategic Leniency and Cartel Enforcement*, 99 AM. ECON. REV. 750, 761 (2009).

programs.[12] In addition, a leniency application may result in an infringement decision via public enforcement before the victims' private action. In such cases, the infringement decision could be used in private actions to increase the chances of victims winning their cases and recovering damages.[13]

As demonstrated, society benefits from both increased private antitrust enforcement and leniency applications. In fact, many jurisdictions around the globe are promoting the use of both measures. However, there seems to be a contradiction between the two measures as the dominant view is that private enforcement discourages leniency applications.[14] This is so because, as shown in the literature, even after successfully applying for leniency and being exempted from fines, leniency applicants are still liable for any damages under subsequent private actions.[15] Such private actions are known as "follow-on" private actions, distinct from "standalone" private actions, which are civil actions brought without any prior public enforcement decision.[16] In follow-on actions, successful leniency applicants could find themselves at a disadvantage because infringement decisions obtained from public enforcement are often binding on civil courts.[17] Moreover, leniency programs often require applicants to provide concrete evidence about and admit participation in the cartel.[18] These incriminating confessions and elicited evidence could raise the chance of not only the cartel being convicted, but also the victims successfully claiming damages in follow-on actions.

Consequently, various nations and scholars have been searching for ways to promote private enforcement without discouraging leniency applications. However, the proposals made so far either do not entirely resolve the problem or give rise to other problems. For example, some propose to reduce the liability of successful leniency applicants in follow-on private actions.[19] However, after the adoption of such a proposal, further incentivizing private enforcement will continue to discourage leniency applications.[20] In addition, there are proposals to completely eliminate leniency recipients' civil liability and make the nonreporting cartel members jointly and severally liable for the harm.[21] However, such a proposal, if

[12] OECD, CHALLENGES AND CO-ORDINATION OF LENIENCY PROGRAMMES–BACKGROUND 8, (June 1, 2018), https://one.oecd.org/document/DAF/COMP/WP3(2018)1/en/pdf [https://perma.cc/UHK7-7MTH].

[13] *Id*. at 8.

[14] *Id.* at 9; *see also* INT'L COMPETITION NETWORK, *supra* note 7, at 9, 32 (showing many antitrust authorities believe that private enforcement disincentivizes leniency applications).

[15] *See, e.g.*, Cornelis Canenbley & Till Steinvorth, *Effective Enforcement of Competition Law: Is There a Solution to the Conflict Between Leniency Programmes and Private Damages Actions?*, 2 J. EUR. COMPETITION L. & PRAC. 315, 316 (2011); Philipp Kirst & Roger Van den Bergh, *The European Directive on Damages Actions: A Missed Opportunity to Reconcile Compensation of Victims and Leniency Incentives*, 12 J. OF COMPETITION L. & ECON. 1, 13–15 (2015).

[16] OECD, RELATIONSHIP BETWEEN PUBLIC AND PRIVATE ANTITRUST ENFORCEMENT 3 (June 11, 2015), https://www.concurrences.com/IMG/pdf/daf-comp-wp3_2015_14.pdf [https://perma.cc/E39S-XKE6].

[17] *Id*. at 18–19.

[18] INT'L COMPETITION NETWORK, *supra* note 7, at 25.

[19] Caroline Cauffman, *The Interaction of Leniency Programmes and Actions for Damages*, 7 COMPETITION L. REV. 184, 208 (2011).

[20] Sinchit Lai, *Incentivizing Private Antitrust Enforcement to Promote Leniency Applications*, 17 J. COMPETITION L. & ECON. 728, 746–47 (2021).

[21] Paolo Buccirossi, Catarina Marvão & Giancarlo Spagnolo, *Leniency and Damages* 13–15, 25–27 (Ctr. for Econ. Pol'y Rsch., Discussion Paper No. DP10682, 2015).

adopted, increases victims' risk of not being fully compensated for the harm they suffer because nonreporting conspirators may not be able to afford to pay the full damages without the help of the leniency recipients.[22]

In light of the above, I recently contributed an article to the literature titled *Incentivizing Private Antitrust Enforcement to Promote Leniency Applications*.[23] In my article, I introduced a game theory model to reinvestigate the relationship between leniency applications and private enforcement, two seemingly contradictory procedural devices. My model was built on a game theory model created by Professor Joseph E. Harrington of the Wharton School of the University of Pennsylvania.[24] Applying the new model, I reveal that incentivizing private antitrust enforcement does not always discourage leniency applications.[25] Further, I argue that when used properly by antitrust authorities, private enforcement could serve as a tool to promote leniency applications. To illustrate, legislators could promote leniency applications by (1) providing incentives[26] only to victims who bring follow-on actions that do not result from leniency applications; (2) providing incentives only to victims who bring standalone actions; or (3) providing incentives to all victims proportionally given that victims almost always bring follow-on actions that result from leniency applications.[27] If my proposals are adopted, society would benefit from increased private antitrust enforcement and leniency applications.

Notably, the new model I introduced was built on the underlying assumption that society offers both follow-on and standalone rights of action (that is, a full right of action) to private parties.[28] This is a realistic assumption because most jurisdictions worldwide provide a full right of action.[29] However, there are exceptions to this common practice. On the one hand, a few jurisdictions do not give any right of action to antitrust plaintiffs, such as Pakistan and Sri Lanka.[30] On the other hand, other jurisdictions such as Hong Kong, India, and Singapore merely provide a follow-on right of action

---

[22] *Id.* at 27.

[23] Lai, *supra* note 20, at 728.

[24] *See* Joseph E. Harrington, JR., LECTURE ON COLLUSIVE PRACTICES 238–40 (2018), https://joeharrington5201922.github.io/pdf/Harrington_CRESSE%20Lecture%20Slides_2018.pdf (Professor Harrington's model).

[25] Lai, *supra* note 20, at 740–49.

[26] There are different ways for legislators to incentivize victims to sue, such as subsidizing their litigations.

[27] Lai, *supra* note 20, at 745–49.

[28] This is reflected by the fact that all the probabilities of convictions specified in the model of my previous publication (i.e., $P_S$, $P_F$ and $P_L$) are greater than zero. *Id.* at 735.

[29] Jurisdictions that provide private parties a full right of action include, but are not limited to: Argentina, Australia, Austria, Belgium, Brazil, Brunei Darussalam, Canada, China, Chinese Taipei, Cyprus, European Union, Fiji, Finland, France, Germany, Greece, Hungary, Iceland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Malaysia, Mongolia, Nepal, Netherlands, New Zealand, Norway, Philippines, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Thailand, Turkey, UK (England and Wales), U.S. (Federal) and Vietnam. *See generally* Elizabeth Morony, *Private Antitrust Litigation: Global Overview*, LEXOLOGY: GETTING THE DEAL THROUGH, https://www.lexology.com/gtdt/workareas/private-antitrust-litigation [https://perma.cc/S9PL-S33A] (last visited Sept. 13, 2022); Bernardine Adkins & Samuel Beighton, *Private Antitrust Litigation in the UK (England and Wales): Overview*, GOWLING WLG (UK) LLP, (Aug. 1, 2019), https://uk.practicallaw.thomsonreuters.com/Browse/Home/International/PrivateAntitrustLitigationGlobalGuide [https://perma.cc/6L6R-EA98]; OECD, COMPETITION LAW IN ASIA-PACIFIC: A GUIDE TO SELECTED JURISDICTIONS 9 (May 16, 2018), https://www.oecd.org/daf/competition/Competition-Law-in-Asia-Pacific-Guide-2018.pdf [https://perma.cc/8PXS-J6VP].

[30] OECD, *supra* note 29, at 151, 194.

(that is, precluding standalone actions).[31] Thus, these jurisdictions could not directly apply and benefit from the model I presented in the earlier publication. To fill this gap, this Article revises the model to reflect an incomplete or lack of private right of action in the jurisdictions like those mentioned above. I acknowledge that leniency programs vary across jurisdictions. However, this Article aims to offer a general model such that we can gain insights from it that are applicable beyond the few jurisdictions mentioned above. Moreover, it is infeasible for me to create separate models for each of the above-mentioned jurisdictions and compare them all in one article. Thus, while constructing the model, I assume the typical features of leniency programs worldwide and focus on the expansion of private rights of action.[32] Then, I apply the new model to answer two questions: (1) For jurisdictions that merely provide a follow-on right of action, could they use private enforcement as a tool to promote leniency applications before expanding private rights of action? (2) If jurisdictions expand their private rights of action, how would this expansion affect leniency applications? The latter question is particularly important because if expanding rights of action itself promotes leniency applications, then this provides an additional reason for lawmakers to expand the civil right. In contrast, if an expansion negatively affects leniency applications, then lawmakers should be more cautious about such expansion.

To the above ends, Part II.A of this Article introduces a leniency game in the absence of any private right of action. This initial model is inspired by the situations in Pakistan and Sri Lanka. Then, I will add a follow-on right of action to the model and examine its impact on leniency applications in Part II.B. This expanded model mimics the situations in India, Hong Kong, and Singapore. Such exercise allows jurisdictions such as Pakistan and Sri Lanka to account for the impact on leniency applications when these jurisdictions consider whether to follow India, Hong Kong, and Singapore's footsteps and only enable follow-on actions. Next, I further add the standalone right of action to the model in Part II.C. After such addition, the model assumes the full right of actions, identical to the one I introduced in my earlier publication. Distinct from the earlier publication, which is based on a full right of action and studies the impact that incentivizing private actions has on leniency applications, Part II.C focuses on the impact on leniency applications when a system with only follow-on right of action expands to one with full right of action. Doing so helps jurisdictions such as India, Hong Kong, and Singapore account for the impact on their leniency programs when considering whether to join the majority of antitrust

[31] OECD, *supra* note 29, at 57, 67,182; Sinchit Lai, *Enabling and Incentivizing Standalone Private Antitrust Actions in Hong Kong—Lessons from the United States*, 16 BERKELEY BUS. L.J. 463, 474 (2019).

[32] For example, under Pakistan's leniency program, the Competition Commission of Pakistan (CCP) has discretionary powers to decide whether to grant leniency. This means that it is not guaranteed that the first leniency applicant could be immune from fine. Sayyeda Fatima, *Leniency Programme of the Competition Commission of Pakistan: Improvement Is Indeed Essential*, 35 WORLD COMPETITION 671, 686–87 (2012). However, my model does not assume that the conditions on which a leniency is to be granted is untransparent or uncertain. Otherwise, for example, the payoff of the conspirator that applies for leniency given that his fellow conspirator does not apply would not be zero. Instead, the leniency applicant should expect a positive fine.

communities to give private parties a full right of action.[33] Finally, based on the above findings, I offer a few policy implications in Part III.

## II. ANALYZING THE IMPACT ON LENIENCY APPLICATIONS

### A. STARTING WITH NO PRIVATE RIGHT OF ACTION

To begin, let us consider a hypothetical jurisdiction that does not provide any right of action to victims of cartel activities. Therein, two companies, namely *X* and *Y*, form a cartel. After engaging in the cartel, each of the conspirators faces the decision to *apply* or *not apply* for leniency from the antitrust authority. Below is the payoff matrix of this strategic form game:[34]

| | | Conspirator *Y* | |
|---|---|---|---|
| | | Apply | Not apply |
| Conspirator *X* | Apply | $\frac{F}{2}, \frac{F}{2}$ | 0, F |
| | Not apply | F, 0 | $P_G F$, $P_G F$ |

Figure 1

As depicted in Figure 1, the two strategies for conspirator *X* correspond to the two rows, and the two strategies for conspirator *Y* correspond to the two columns. To illustrate, for conspirator *X*, choosing a strategy is equivalent to choosing a row. Depending on the conspirators' decisions, there are four combinations of strategies in this model: (*apply, apply*), (*apply, not apply*), (*not apply, apply*), and (*not apply, not apply*). Each of these brackets represents a strategy combination (also known as a strategy profile), and I use the convention that the row player's strategy is the first one in the bracket. Under each of the strategy profiles, the conspirators would obtain a payoff. These payoffs can be found in the four cells on the bottom right of Figure 1 (each of these cells corresponds to a strategy profile). Similarly, the convention is that the row player's payoff is the one on the left of the comma in a cell. For example, if conspirator *X* chooses *apply* and conspirator *Y* chooses *not apply*, then conspirator *X*'s payoff is zero, and conspirator *Y*'s payoff is *F* (as explained below). Based on the decisions of the two conspirators, one of the following three scenarios may occur.

**Scenario 1A: Only one of the two conspirators applies for leniency.** This scenario corresponds to either the bottom left or the upper right strategy profile in the payoff matrix. Let us assume conspirator *X* is the one who

[33] Some scholars have been arguing for such a reform. See Jeremiah Lau, *A Standalone Action for Singapore's Competition Law Regime*, 29 SING. ACAD. L.J. (2017), for an example of such work.

[34] *See* JOSEPH E. HARRINGTON, JR., GAMES, STRATEGIES, AND DECISION MAKING 38–41 (2015) (explaining what a strategic form game is).

applies for leniency and turns the cartel in to the antitrust authority (that is, the upper right strategy profile). In return, conspirator *X* will be immune from fines. Since there is no private right of action, conspirator *X* is not subject to any subsequent damages action. Hence, conspirator *X* would not receive any penalty after blowing the whistle, and its payoff is zero. In contrast, with the information and evidence surrendered by conspirator *X*, the government would then sue conspirator *Y* for a fine (denoted as *F*), where $F > 0$. Likewise, in the absence of a private right of action, conspirator *Y* is not subject to a damages action. Thus, the payoff of conspirator *Y* is merely *F*. In sum, the payoff of conspirator *X* is zero, while the payoff of conspirator *Y* is *F*. Conversely, when conspirator *Y* is the only one to apply for leniency, as shown in the bottom left strategy profile of the matrix, the payoffs of conspirators *Y* and *X* are zero and *F*, respectively.

**Scenario 1B: Both conspirators apply for leniency.** This scenario corresponds to the upper left strategy profile. A typical leniency program has a "first-to-the-door" requirement, meaning that only the first successful applicant can be immune from a fine.[35] In other words, the leniency applicant that comes second (or later, if there are more than two conspirators) would be liable for *F*. However, it is not until after submitting a leniency application that the conspirators know whether they are the "first to the door." In our two-conspirators hypothetical, it is assumed that when both conspirators race to the antitrust authority, each of them has a fifty percent chance of being first. Therefore, each applicant would expect to pay half of the fine (that is, $F/2$). Again, the hypothetical jurisdiction in question does not provide private parties with a right of action. Thus, the conspirators are not liable for damages.

**Scenario 1C: No conspirator applies for leniency.** This scenario corresponds to the bottom right strategy profile in the payoff matrix above. Without any conspirator applying for leniency, the cartel might not get exposed. In this case, the model assumes that there is a probability $P_G$ for the conspirators to be convicted in public action, where $0 < P_G \leq 1$. Since conviction is not certain, the conspirators may hold a fluky mentality. Each of them may think to themselves, *"If I do not apply for leniency, and the other side by chance also does not, then we may not be detected and convicted."* Further, the conspirators may, through communication, agree with each other to not apply for leniency. In any event, this scenario means there is a chance of $(1 - P_G)$ that both conspirators do not need to pay any penalties. However, by a chance of $P_G$, the conspirators could get convicted, and each of them must pay a fine. Once again, private parties are assumed to have no right of action. Hence, the expected payoff for both conspirators *X* and *Y* is just $P_G F$ in this scenario.

After understanding the payoffs in the matrix, I will now turn to identify the Nash Equilibria of this leniency game. By definition, "[A] strategy profile is a Nash equilibrium if each player's strategy maximizes his or her payoff, given the strategies used by the other players."[36] However, a fine is a cost to the conspirators *X* and *Y*, so the conspirators prefer to *minimize* their

[35] INT'L COMPETITION NETWORK, *supra* note 7, at 5.
[36] HARRINGTON, *supra* note 34, at 103.

payoffs.[37] Thus, to a conspirator, given the other conspirator's strategy, the strategy that generates a *lower* payoff would be a conspirator's *best reply*.[38] And if a strategy profile is the best reply to both conspirators, that strategy profile is a Nash Equilibrium.[39] Note that our model is a *symmetric game* because the two conspirators have the same strategy sets, and their payoffs switch if we switch their strategies.[40] This characteristic implies that given a symmetric strategy profile in our game (for example, both apply or both do not apply), if a conspirator's strategy is a best reply, then the other conspirator's strategy is a best reply as well.[41] In a two-players-and-two-strategies game, like the one we have in hand, there could be no Nash equilibrium, one Nash equilibrium, or two Nash equilibria. Below, I will reveal which strategy profile(s) is (are) the equilibrium (equilibria) of the model.

**Scenario 1D: Assume that conspirator *Y* applies for leniency.** Conspirator *X* would reason as follows: in this case, it would cost conspirator *X* $F/2$ if *X* applies or *F* if *X* does not apply. Therefore, *X* would apply as well since the expected payoff is lower. Intuitively, the difference is that, if *X* does not apply for leniency, *X* definitely needs to pay *F*, while if *X* apply for leniency, there is a chance that *X* will be the first successful applicant and receive amnesty on *F*. Thus, it is the *best reply* for *X* to apply for leniency given that conspirator *Y* will apply. Since this best reply falls in one of the symmetric strategy profiles (that is, (*apply, apply*)), applying for leniency would be conspirator *Y*'s *best reply* as well given that conspirator *X* will apply. Therefore, (*apply*, *apply*) is a Nash equilibrium of this game.

**Scenario 1E: Assume that conspirator *Y* does not apply for leniency.** Again, let us think from the perspective of conspirator *X*. In this case, conspirator *X*'s payoff would be zero if *X* applies and $P_G F$ if *X* does not. As the payoff for *apply* is lower than *not apply*, it is conspirator *X*'s best reply to apply for leniency. Again, recall that *apply* is the best reply to a conspirator in our game given that the other conspirator chooses to apply. Combining both results, we now learn that, to conspirator *X*, the apply option produces a strictly "lower" payoff than not apply for any strategies chosen by conspirator *Y*. This means that applying for leniency is a dominant strategy for conspirator *X*.[42] And when a rational player has a dominant strategy, he or she will always use it.[43] Thus, conspirator *X* will always apply for leniency. Because this game is symmetric, the same analysis applies to conspirator *Y*. So, conspirator *Y* also has a dominant strategy to apply for leniency and will always use it as well. Since both conspirators have a dominant strategy to

[37] JOSEPH E. HARRINGTON, JR., LECTURES ON COLLUSIVE PRACTICES 236–37 (2015), https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.715.7180&rep=rep1&type=pdf.

[38] HARRINGTON, *supra* note 34, at 105–06.

[39] *Id.*

[40] *Id.* at 106–07.

[41] *Id.*

[42] In general, a strategy is a dominant strategy if it strictly dominates every other strategy. And a strategy strictly dominates another strategy if the payoff from the former is strictly "higher" than from the latter for any strategies chosen by the other players. *Id.* at 61. In contrast, in our model, as explained, each conspirator would like to "minimize" their damages and/or fine paid. Thus, in the model, a strategy strictly dominates another strategy if the payoff from the former is strictly "lower" than from the latter for any strategies chosen by the other players.

[43] *Id.*

*apply*, there is a unique Nash equilibrium in which both conspirators apply for leniency.[44] This means that the conspirators will race for leniency.

It is crucial to understand that both conspirators acting in their individual interests does not imply that they act in terms of their collective interests. For example, although it is not necessarily the case, depending on the magnitude of the parameters in the model, it is possible for both conspirators to be better off by jointly moving from (*apply, apply*) to (*not apply, not apply*). For instance, this occurs when each conspirator's payoff to not apply (that is, $P_G F$) is lower than each of their payoff to apply for leniency (that is, $F/2$). Although it could be in the conspirators' best interests to both not apply, this optimal outcome may not be achieved when both conspirators act in their self-interests to follow the dominant strategy of applying for leniency. After all, the leniency program is set up to encourage conspirators to choose to protect themselves at the expense of the other conspirator. Therefore, in a jurisdiction that lacks a private right of action, conspirators tend to face a prisoners' dilemma.[45]

### B. ENABLING A FOLLOW-ON RIGHT OF ACTION

Next, let us consider that the hypothetical jurisdiction that does not provide any private right of action amends its law and enables a follow-on right of action. Such reform would lead to three changes to the payoff matrix of the model, and each change corresponds to one of the three scenarios we discussed in the previous subpart (that is, scenarios 1A, 1B, and 1C). Below is the payoff matrix *after* reform.

| | | Conspirator *Y* | |
|---|---|---|---|
| | | Apply | Not apply |
| Conspirator *X* | Apply | $\frac{F}{2} + P_L D, \frac{F}{2} + P_L D$ | $P_L D, F + P_L D$ |
| | Not apply | $F + P_L D, P_L D$ | $P_G F + P_G P_F D,$ $P_G F + P_G P_F D$ |

Figure 2

**Scenario 2A: Only one of the two conspirators applies for leniency.** Recall that, in the absence of a private right of action, when only one of the two conspirators applies for leniency, the payoffs of the conspirator that applies and does not apply are zero and *F*, respectively (that is, Scenario 1A). The introduction of a follow-on right of action would increase the payoffs of both conspirators. This is because after a conspirator applies for leniency, the

[44] *Id.* at 107.
[45] *Id.* at 106–07, 114–15.

antitrust authority could sue the other conspirator who does not apply for a fine. Then, the cartel is exposed to the public, and private individuals harmed by the cartel could file their own claims against the conspirators. A typical leniency program does not preclude private victims from suing the leniency recipient. This means that each conspirator is liable for damages (denoted as *D*) to the plaintiffs, where $D > 0$. However, after the cartel is posed to the public by the leniency application, private victims, for example, may not be able to sue the conspirators due to a lack of financial resources. Further, even if private victims do sue the cartel, there is no guarantee that they could prevail in court and be awarded damages. In other words, it is not certain that the conspirators would face and be convicted in a follow-on action. The model assumes that there is a probability $P_L$ for the conspirators to be convicted in a follow-on action *that results from a leniency application*, where $0 < P_L \leq 1$. Hence, each of the conspirators faces expected damages of $P_L D$. Therefore, enabling a follow-on right of action would raise the payoff for the conspirator that applies for leniency from 0 to $P_L D$ and raise the payoff for the conspirator that does not apply for leniency from *F* to $(F + P_L D)$ (see Figure 2).

**Scenario 2B: Both conspirators apply for leniency.** As previously explained, in the absence of a private right of action, the conspirators' payoff is $F/2$ when both conspirators apply for leniency (that is, Scenario 1B). Again, enabling a follow-on right of action would raise the payoffs of both conspirators because, after the antitrust authority's action exposes the cartel, private individuals harmed by the cartel become aware of the cartel and could sue the conspirators for damages. Similar to Scenario 2A, there is no guarantee that the conspirators would be convicted in a follow-on action. Therefore, the model also assumes that there is a probability for the conspirators to be convicted in a follow-on action; such probability is the same as the one introduced in Scenario 2A—that is, $P_L$. This is so because, in both scenarios, the follow-action *results from a leniency application*. Thus, like the previous scenario, enabling a follow-on right of action increases conspirators' payoff by $P_L D$. Consequently, the payoff of both conspirators becomes $(F/2 + P_L D)$ (see Figure 2).

Scenario 2C: No conspirator applies for leniency. Recall that the expected payoff for both conspirators X and Y before the introduction of a follow-on right of action is $P_G F$ (that is, Scenario 1C). In such a case, there are only two possible outcomes: either the conspirators are convicted in a public action or they are not. However, things get slightly more complicated after follow-on actions become available. As shown in Figure 3, without a leniency application, there could be three different outcomes.

First, with a chance of $P_G$, the cartel would be convicted in a public action, shown in the top branch of Figure 3. After that, with a chance of $P_F$, the cartel might also be convicted in a follow-on private action. When this is the case, cartel members need to pay both D and F. Note here that $P_F$ is similar to but not identical to $P_L$. In common, $P_L$ and $P_F$ are probabilities of conspirators being convicted in a follow-on private action. However, $P_L$ is on the condition that the follow-on action results from a leniency application, while $P_F$ is on the condition that the follow-on action does *not* result from a leniency application. In light of this, $P_L$ is larger than $P_F$ (that is, $P_L > P_F$) because, with a successful public action upfront, private victims are more likely to detect the cartel, sue the cartel, and prevail in court.[46] For example, with the leniency documents provided by the whistle-blower, private plaintiffs could save costs in and increase their chances of establishing the causation between infringement and damages and determine the value of damages.[47]

Alternately, by a chance of $(1 - P_F)$, the cartel is not convicted in a follow-on private action and only needs to pay *F*. Of course, the conspirators might get lucky and escape conviction (that is, the lowest branch of Figure 3). If so, they do not need to pay either a fine or damages. After considering the three possible outcomes, we see that conspirators' expected penalty when none of them apply for leniency equals $P_G P_F (D + F) + P_G (1 - P_F)(F) + (1 - P_G)(0)$, which could be simplified to $P_G F + P_G P_F D$. This explains the payoffs of the bottom right strategy profile in Figure 2.

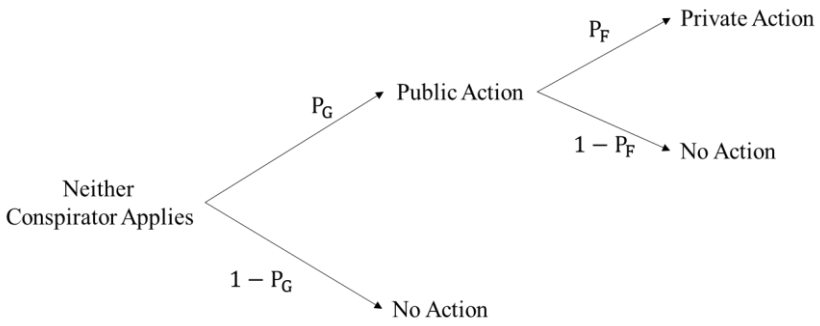


Figure 3

[46] Lai, *supra* note 20, at 739–40.
[47] *Id.*

We have now seen how the introduction of a follow-on right of action changes the payoffs of the model. Next, we turn to analyze its impact on the Nash equilibria. To do so, we need to consider a conspirator's best reply when his fellow conspirator either applies or does not apply for leniency, respectively.

**Scenario 2D: Assume that conspirator Y applies for leniency.** In this case, conspirator X prefers to apply for leniency as well. To illustrate, it costs him $F/2 + P_L D$ if he applies and $F + P_L D$ if he does not apply. Therefore, it is conspirator *X*'s best reply to apply for leniency when conspirator *Y* applies. As this best reply falls in (*apply, apply*), which is a symmetric strategy profile, it would be conspirator *Y*'s best reply to apply for leniency as well given that conspirator *X* will apply. Hence, both conspirators applying for leniency is a Nash equilibrium of this game. Note that this result is the same as that before the introduction of a follow-on right of action (that is, Scenario 1D). This is because the reform increases the cost of a conspirator given that his fellow conspirator applies for leniency by the same amount (that is, $P_L D$) no matter if the conspirator opts to *apply* or *not apply*. Therefore, regardless of the reform, a conspirator still finds applying for leniency more attractive when the other conspirator applies.

**Scenario 2E: Assume that conspirator Y does not apply for leniency.** This time the outcome is different from that before enabling a follow-on right of action (that is, scenario 1E). Again, let us think from the perspective of conspirator *X*. Here, conspirator *X*'s payoff would be $P_L D$ if he applies and $P_G F + P_G P_F D$ if he does not. Numerically, it is indefinite which payoff is lower. Therefore, we have to consider two situations separately: $P_G F + P_G P_F D < P_L D$ and $P_G F + P_G P_F D > P_L D$.

**If $P_G F + P_G P_F D > P_L D$:** In this case, when conspirator *Y* does not apply for leniency, conspirator *X*'s payoff for *apply* (that is, $P_L D$) is lower than *not apply* (that is, $P_G F + P_G P_F D$). Therefore, if conspirator *Y* chooses not to apply, it is conspirator *X*'s best reply to apply. Again, recall that *apply* is the best reply to a conspirator in our game given that the other conspirator chooses to apply, regardless of whether $P_L D$ is larger or smaller than $P_G F + P_G P_F D$. Combining both results, we now learn that when $P_G F + P_G P_F D > P_L D$, applying for leniency is a *dominant strategy* for conspirator *X*, and he will always use it. As this game is symmetric, the same analysis applies to conspirator *Y*. Since both conspirators have a dominant strategy to *apply*, we have a unique Nash equilibrium in which both conspirators apply for leniency when $P_G F + P_G P_F D > P_L D$. This means that the conspirators will race for leniency. Like before the introduction of a follow-on right of action, conspirators might face a prisoner's dilemma. To illustrate, depending on the magnitude of the parameters in the model, it is possible for both conspirators to be worse off if they do not jointly move to (*not apply, not apply*). This occurs when each conspirator's payoff to not apply (that is, $P_G F + P_G P_F D$), even assumed to be larger than $P_L D$, is still lower than each of their payoffs to apply for leniency (that is, $F/2 + P_L D$).

**If $P_G F + P_G P_F D < P_L D$:** This situation means that, when conspirator *Y* does not apply for leniency, conspirator *X*'s payoff for *not apply* (that is, $P_G F + P_G P_F D$) is lower than for *apply* (that is, $P_L D$). Thus, if conspirator *Y*

chooses not to apply, it is conspirator *X*'s best reply to not apply, too. Since this best reply falls in the symmetric strategy profile (*not apply*, *not apply*), not applying for leniency would also be conspirator *Y*'s best reply given that conspirator *X* does not apply. Therefore, (*not apply*, *not apply*) is a Nash equilibrium of the game. Recall the analysis that (*apply*, *apply*) is a Nash equilibrium to a conspirator in this game when the other conspirator chooses to apply (that is, Scenario 2D). This conclusion holds regardless of whether $P_L D$ is larger or smaller than $P_G F + P_G P_F D$. Further, we just identified that (*not apply, not apply*) is another Nash equilibrium when $P_G F + P_G P_F D < P_L D$. Hence, combining both results, we now learn that when $P_G F + P_G P_F D < P_L D$, there are two equilibria for this game: both conspirators apply for leniency and both do not.[48] In other words, there is both an *individual* and *common interest* for the two players of this game to make the same choice (that is, coordinate their actions). In game theory, this is known as the *coordination game*.[49] In a coordination game, generally, Nash equilibrium does not always tell us which equilibrium the players will settle on.[50] However, to the conspirators in our model, one equilibrium is preferable to the other when $P_G F + P_G P_F D < P_L D$.[51] We could determine which is the preferred one by comparing the payoffs to the conspirators under the two equilibria. On the one hand, when both apply for leniency, the payoff to each conspirator is $F/2 + P_L D$. On the other hand, when both do not apply for leniency, the payoff to each conspirator is $P_G F + P_G P_F D$. The current scenario assumes that $P_G F + P_G P_F D < P_L D$. In this way, when both choose *not apply*, the payoff to each conspirator is lower than $P_L D$, and must also be lower than $F/2 + P_L D$. As a result, conspirators want to coordinate on the Nash equilibrium (*not apply, not apply*).

In sum, *before* private parties have any right of action, conspirators have a dominant strategy to apply for leniency (that is, a prisoners' dilemma game).[52] *After* enabling follow-on right of action, if $P_G F + P_G P_F D > P_L D$, the conspirators still have a dominant strategy to apply for leniency; while if $P_G F + P_G P_F D < P_L D$, conspirators want to coordinate on the equilibrium and both do not apply for leniency (that is, a coordination game). This means that enabling a follow-on right of action *might* discourage leniency applications. Why is this the case? To illustrate, the inequality $P_G F + P_G P_F D >$ or $< P_L D$ demonstrates that when a conspirator decides whether to apply for leniency given that his fellow conspirator does not apply, the former compares his own cost of *applying* and *not applying*. The right-hand side ("R.H.S.") of the inequality represents his cost of applying, while the left-hand side ("L.H.S.") represents his cost of not applying. In a jurisdiction without a private right of action, if a conspirator applies for leniency and his fellow conspirator does not, the former is not subject to any fines or damages. In other words, his cost of applying is simply zero, but his cost increases if he does not apply (that is, $P_G F$).[53] Therefore, he is eager to blow the whistle. In contrast, following the introduction of a follow-on right of action, it becomes costlier

[48] HARRINGTON, *supra* note 37, at 238.
[49] *Id.*; HARRINGTON, *supra* note 34, at 107–08.
[50] HARRINGTON, *supra* note 34, at 108.
[51] *Cf. Id*. at 114.
[52] *See supra* Section II.A.
[53] *Id.*

both to apply (from zero to $P_L D$) and not to apply (from $P_G F$ to $P_G P_F D$). On the one hand, it becomes costlier to apply because leniency applicants may face follow-on rights of action and need to pay damages (that is, $P_L D$). On the other hand, it becomes costlier to not apply because, in addition to the existing possibility of being fined by the antitrust authorities (that is, $P_G F$), conspirators who do not apply for leniency face a new threat of damages from follow-on actions (that is, $P_G P_F D$). Although the incremental on both sides are unequal, it is known that the increase in the cost of applying (that is, $P_L D$) would be greater than the increase in the cost of not applying (that is, $P_G P_F D$) because $P_G$ is a probability and its maximum value is one. Thus, after considering the value of $P_G$, $P_G P_F D$ could at most be $P_F D$. As explained, $P_L$ is greater than $P_F$. Hence, $P_L D$ must be greater than $P_F D$ (and greater than $P_G P_F D$). In other words, the expansion of rights of action would result in a *net* increase in the cost of applying (that is, $P_L D - P_G P_F D > 0$). However, what is not known is whether the net increase in the cost of applying (that is, $P_L D - P_G P_F D$) would outweigh the cost of not applying before the expansion (that is, $P_G F$). If so, conspirators face the condition $P_G F + P_G P_F D < P_L D$ and would prefer not to apply for leniency. Otherwise, conspirators face the condition $P_G F + P_G P_F D > P_L D$ and want to race for leniency.

### C. FURTHER ENABLING A STANDALONE RIGHT OF ACTION

We have just reviewed how enabling a follow-on right of action affects leniency applications. Now, I turn to analyze the impact of leniency applications if such a hypothetical jurisdiction further reforms its law such that private parties are allowed to bring standalone actions. This would mean that private victims would have full rights of action. Such reform only changes the payoff of the strategy profile (*not apply, not apply*), because, by definition, there is no public action prior to standalone actions. When only one conspirator applies for leniency or when both conspirators apply, the cartel will first be convicted in public action. Therefore, standalone actions do not play a role in these scenarios and do not affect the payoffs of (*apply, apply*), (*apply, not apply*), and (*not apply, apply*).

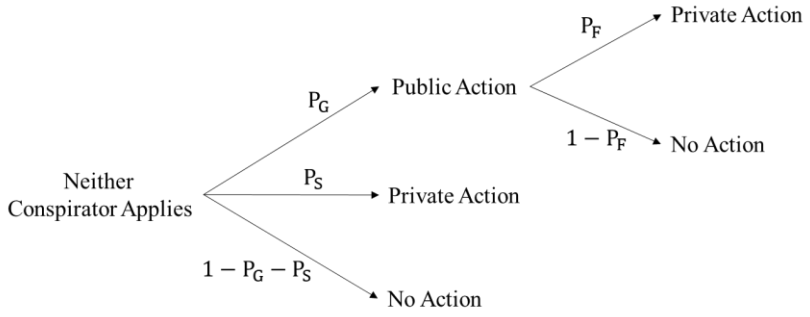


Figure 4

So, how would the reform alter the payoffs in (*not apply*, *not apply*)? To understand this, recall that *before* the introduction of a standalone right of action, when neither conspirator applies for leniency, there are three possible

outcomes (that is, Figure 3). First, the cartel might not be convicted in public action. Second, the cartel might be convicted in a public action *only*. Third, the cartel might be convicted in *both* a public action and a follow-on private action. *After* the reform, as shown in Figure 4, there is a fourth possible outcome. That is, with a chance of $P_S$, the cartel would be convicted in a standalone private action. $P_S$ is different from $P_F$ and $P_L$ because the former is the probability of conviction in a standalone action, while the latter are probabilities of conviction in a follow-on action. In terms of magnitude, $P_S$ is less than $P_F$, hence also less than $P_L$ (that is, $P_L > P_F > P_S$) because, without a successful public action upfront, private victims are less likely to detect the cartel, sue the cartel, and prevail in court.[54] For example, without an infringement decision, private plaintiffs have to prove the existence of the cartel by themselves, which could be very costly.[55] If the conspirators are convicted in a standalone action, then they need to pay damages to the victims. In other words, conspirators are subject to expected damages $P_S D$. Thus, with the possibility of facing standalone actions, conspirators' payoff in (*not apply*, *not apply*) increases from $P_G F + P_G P_F D$ to $P_G F + P_G P_F D + P_S D$. Accordingly, I revised the payoff matrix by adding $P_S D$ to the bottom right strategy profile (see Figure 5).

| | | Conspirator *Y* | |
|---|---|---|---|
| | | Apply | Not apply |
| Conspirator *X* | Apply | $\frac{F}{2} + P_L D, \frac{F}{2} + P_L D$ | $P_L D, F + P_L D$ |
| | Not apply | $F + P_L D, P_L D$ | $P_G F + P_G P_F D + P_S D,$ $P_G F + P_G P_F D + P_S D$ |

Figure 5

With the updated payoff matrix, we can determine the impact that enabling a standalone right of action has on leniency applications. Assume that *before* the reform, some conspirators (for example, conspirators *X* and *Y*) face the condition $P_G F + P_G P_F D < P_L D$ and opt not to apply for leniency. Then, let us say, the law is reformed to allow private parties to bring standalone actions. In this way, as explained, the cost of (*not apply*, *not apply*) increases by $P_S D$. This means that the L.H.S. of the inequality increases from $P_G F + P_G P_F D$ to $P_G F + P_G P_F D + P_S D$. That is, it becomes costlier for conspirators to continue to not apply for leniency. Depending on the magnitude of $P_S D$, there could be two possible outcomes. On the one hand, even with the increase on the L.H.S., the overall cost of not applying

[54] Lai, *supra* note 20, at 740.
[55] *Id.*

is still less than the overall cost of applying (that is, $P_G F + P_G P_F D + P_S D < P_L D$). In this case, the conspirators will continue to coordinate on the Nash equilibrium (*not apply, not apply*). On the other hand, it is possible that the inclusion of $P_S D$ causes the L.H.S. to become greater than the R.H.S. (that is, $P_G F + P_G P_F D + P_S D > P_L D$). If so, the conspirators would have a dominant strategy to apply for leniency and might face a prisoner's dilemma.

## III. POLICY SUGGESTIONS

### A. FOR JURISDICTIONS WITH NO PRIVATE RIGHT OF ACTION

In Part II.A, we learned that in jurisdictions that provide no private rights of action, conspirators have a strong incentive to apply for leniency. Then, Part II.B revealed that enabling a follow-on right of action might discourage conspirators to apply for leniency because such reform increases both conspirators' cost of applying and cost of not applying, and the increase in the cost of applying might cause the overall cost of applying to outweigh the overall cost of not applying (that is, $P_G F + P_G P_F D < P_L D$). That said, it is still recommended for these jurisdictions to enable follow-on rights of action. The reasoning behind this recommendation is threefold.

First, the negative impact a rights expansion has on leniency programs may not be substantial because such a reform does not always discourage applications. As explained above, following the reform, the net increase in the cost of applying (that is, $P_L D - P_G P_F D$) could fall short of the cost of not applying before the expansion (that is, $P_G F$). In this case, conspirators face the condition $P_G F + P_G P_F D > P_L D$ and maintain a strong incentive to race for leniency. Whether conspirators would face $P_G F + P_G P_F D > P_L D$ or $P_G F + P_G P_F D < P_L D$ depends on the magnitude of the parameters in the inequality. For instance, if an antitrust authority is not doing a good job in detecting and convicting without the leniency program (that is, a low $P_G$), then it is more likely that enabling a follow-on right of action would cause conspirators to face $P_G F + P_G P_F D < P_L D$ and switch to not apply. The intuition behind this is that the probability of conviction in public actions plays a critical role in the cost of conspirators not applying for leniency. With a low $P_G$, conspirators do not feel that there is an imminent threat from public actions and follow-on actions. Therefore, when lawmakers predict the impact on leniency applications when deciding whether to enable a follow-on action, one consideration would be the level of $P_G$. When $P_G$ is high, lawmakers could worry less about the negative impact on leniency programs; however, in practice, it is often when $P_G$ is low that lawmakers have a stronger desire to enable and promote private enforcement. This is because private enforcement could serve as a substitute to public enforcement in combating cartels and could save antitrust authorities' resources.

Second and relatedly, even if enabling a follow-on right of action does discourage leniency applications, as remedies, there are ways for antitrust authorities to promote leniency applications after the expansion of rights. To promote a race for leniency, legislators could change the strategic situation faced by conspirators from a coordination game to a prisoner's dilemma by turning the condition $P_G F + P_G P_F D < P_L D$ faced by conspirators to $P_G F +$

$P_G P_F D > P_L D$ by altering the magnitude of $P_G$, *F*, $P_L$ or *D*. More specifically, this could be achieved by either increasing $P_G$, *F*, or $P_F$, or by reducing *D*. For instance, when an antitrust authority strengthens enforcement and increases $P_G$, the conspirator's cost of not applying increases. Consequently, the L.H.S. of the inequality increases and the inequality may reach the condition $P_G F + P_G P_F D > P_L D$. Hence, conspirators will be more likely to race for leniency. However, if lawmakers want to promote leniency applications after enabling follow-on actions, it is preferable to do so by increasing *F* and/or $P_F$ rather than increasing $P_G$ or reducing *D*. While $P_G$ could be low to start with and increasing it could be very costly, to increase *F*, lawmakers simply need to amend the law.[56] That said, such an approach is subject to conspirators' ability to pay the fine.[57] On the other hand, it is unjust to reduce *D* to promote leniency applications. This is because *D* represents the harm suffered by private victims. A reduction in *D* means that victims are not allowed to seek full damages. Doing so would leave the victims under-compensated. In contrast, increasing $P_F$ promotes justice. In fact, this measure is an example of using private enforcement as a tool to promote leniency applications.[58] Here, lawmakers provide an incentive to follow-on actions that *do not result from a leniency application* (corresponding to $P_F$), but not to follow-on actions that *result from a leniency application* (corresponding to $P_L$). For example, lawmakers could provide legal aid only to claimants that bring a follow-on action that does not result from a leniency application. Antitrust authorities have information about (1) whether a private action is following on public action, and (2) if yes, whether such a follow-on action is supported by the leniency program. Therefore, it is feasible for the authorities to determine which follow-on actions are eligible for the legal aid.[59]

Third, if enabling a follow-on right of action does discourage leniency applications, and the above proposals could not fully remediate the negative effect, one should not immediately conclude that it is a bad idea for a jurisdiction to allow follow-on actions. It is because the negative impact on leniency applications is just an additional cost of the rights' expansion. To decide if private parties' rights ought to be expanded, lawmakers need to compare such additional cost to the additional benefits of doing so. As outlined previously, private antitrust enforcement benefits society in several ways.[60] In the absence of a private right of action, a jurisdiction cannot capture any of these benefits. Thus, enabling a follow-on right of action generates additional benefits to the jurisdiction. If such additional benefits outweigh the additional costs that flow from the reduction in leniency applications, then the jurisdiction should permit follow-on actions.

[56] *See* ROBERT B. COOTER, JR. & THOMAS ULEN, LAW AND ECONOMICS 473–77 (6th ed. 2014) (discussing the optimal means of deterrence of crime generally).
[57] *Id.*
[58] Lai, *supra* note 20, at 748.
[59] *Id.*
[60] *See supra* Part I.

### B. FOR JURISDICTIONS WITH FOLLOW-ON RIGHT OF ACTION ONLY

Part II.C illustrated that enabling a standalone right of action itself could encourage conspirators to apply for leniency because such reform increases both conspirators' cost of not applying and might cause the overall cost of applying to outweigh the overall cost of not applying (that is, $P_G F + P_G P_F D + P_S D > P_L D$). Prior to this analysis, we already knew that societies can benefit from such an expansion in rights of action through the channel of private enforcement.[61] Now, we discover that enabling a standalone right of action promotes leniency applications. Given the benefits of leniency programs,[62] our new discovery provides an extra reason for jurisdictions that only provide a follow-on right of action (for example, Hong Kong, India, and Singapore) to permit standalone actions. Nevertheless, there is a caveat to this policy implication. That is, while enabling a standalone right of action itself could promote leniency applications, its effectiveness may only be marginal. This is because convictions through standalone actions (that is, $P_S$), even if allowed, are normally quite rare. The exception to this practice is the United States. It is estimated that standalone cases account for over ninety percent of all private antitrust litigations in the U.S.[63] However, in other jurisdictions around the world, even follow-on antitrust actions that could benefit from leniency programs are not very popular,[64] not to mention standalone actions, which are costlier to bring about and harder to win (that is, $P_L > P_F > P_S$). If $P_S$ is low, then enabling a standalone right of action will not add much expected penalty (that is, $P_S D$) to conspirators' payoff of not applying. As such, the positive impact on leniency programs could be minimal.

That being said, jurisdictions that only allow follow-on rights of action should still consider allowing private parties to bring standalone actions. This is because the major benefit of doing so is not to enable the standalone right of action itself, but rather to open up the possibility for lawmakers to further incentivize standalone actions to promote leniency applications. This is another way for lawmakers to use private enforcement as a tool to promote leniency applications.[65] For instance, lawmakers could provide legal aid to claimants that bring a standalone action. Then, the L.H.S. of the inequality increases and the inequality could reach the condition $P_G F + P_G P_F D + P_S D > P_L D$. If so, conspirators will race for leniency. Since the antitrust authorities know if there is a relevant public action before these private actions, it is viable for the authorities to decide the claimants' eligibility to the subsidy.[66] Given that $P_S$ is low to start with, there is substantial room for it to be raised by lawmakers (that is, until $P_S$ reaches one). This means that incentivizing standalone actions could generate greater positive impacts on leniency

[61] *Id.*
[62] *Id.*
[63] Lai, *supra* note 31, at 485.
[64] For example, in the United Kingdom, before December 31, 2013, there were twenty-one antitrust infringement decisions made by the Office of Fair Trading that were supported by the leniency program. However, only three of the decisions were followed by private claims. Sinchit Lai, *Incentivizing Private Antitrust Enforcement to Promote Leniency Applications: A Case Study of United Kingdom*, 38 ARIZ. J. INT'L & COMPAR. L. 285 (forthcoming).
[65] Lai, *supra* note 20, at 748.
[66] *Id.*

applications than merely enabling standalone actions. Here, one may argue that enabling the standalone right of action is unnecessary because, even without such a right, lawmakers could promote leniency applications by incentivizing follow-on actions that do not result from a leniency application (that is, raise $P_F$).[67] Indeed, lawmakers could encourage whistle-blowing by raising either $P_F$ or $P_S$. But, when lawmakers get to choose between one of the two tools to promote leniency applications (for example, due to financial constraints), it is preferable to increase $P_S$ rather than $P_F$. The reasons for this are twofold.

First, justice requires lawmakers to offer more financial support to standalone claimants than follow-on claimants because standalone claimants are in a disadvantaged position when it comes to suing cartels. Unlike follow-on claimants that could piggyback on public actions, standalone claimants need to investigate the illegal conduct and establish its existence by themselves. These tasks cost the claimants not only a significant amount of money, but also time. As such, many victims do not find it worthwhile to sue and give up seeking justice. This is probably why we seldom see standalone antitrust actions in most jurisdictions.[68] Therefore, lawmakers should prioritize supporting standalone claimants to sue cartels.

Second and more importantly, more cartels could be combated if lawmakers incentivize standalone actions rather than follow-on actions that do not result from a leniency application. Antitrust authorities' major goal is usually to restrain antitrust violations.[69] In other words, antitrust authorities want to maximize the number of cartels restrained. However, follow-on actions do not serve this purpose well because they are actions against cartels that have *already* been restrained in public actions. In contrast, by definition, standalone actions go against cartels that have not yet been restrained. To put it another way, let us assume that there are two cartels in a country, cartel *W* and cartel *Z*. Without government support, victims of these two cartels do not have sufficient incentive to sue. Imagine that an antitrust authority has just successfully prosecuted cartel *W* without the help of its leniency program. Then, let's consider two scenarios. In the first scenario, the lawmakers incentivized follow-on actions. Here, the likely outcome is that private victims will sue cartel *W* and be compensated, whereas cartel *Z* will not be sued. Thus, only one cartel is being restrained. In the second scenario, the lawmakers incentivized standalone actions instead. Then, the likely outcome is that cartel *W* will not face a follow-on action, but cartel *Z* will be convicted in a standalone action. In this case, both cartels are being restrained.

In sum, enabling the standalone right of action itself has a positive impact on leniency programs. However, the greater reason to support such a reform is that it opens up the possibility for lawmakers to further leverage standalone actions to promote leniency applications. Moreover, I have explained that when lawmakers get to choose between increasing $P_S$ and $P_F$

[67] *See supra* Section III.A.

[68] The United States is an exception because of its unique legal system. For example, the U.S. allows both contingency fee agreements and opt-out class actions, which is uncommon in other jurisdictions. Lai, *supra* note 31, at 485, 509.

[69] Am. Sales Co. v. AstraZeneca LP, 842 F.3d 34, 60 (1st Cir. 2016).

to promote leniency applications, justice and efficiency require lawmakers to go with the former.

## IV. CONCLUSION

While most jurisdictions around the globe provide victims of cartels a full right of action, some either do not allow private actions at all or only allow follow-on actions. To assist these jurisdictions in deciding whether to provide some or more rights of action to private parties, as a first attempt, this Article has analysed the impact an expansion in rights of action has on leniency programs. On the one hand, this Article found that enabling follow-on actions might discourage leniency applications; however, this Article revealed that such reform also offers a remedy to its own problem. That is, subsequent to the reform, antitrust authorities could use private enforcement as a tool to promote leniency applications. On the other hand, this Article found that enabling a standalone right of action has a positive impact on leniency programs. Moreover, doing so provides antitrust authorities with an additional tool to encourage applications. These benefits should be factored in when legislators consider expanding antitrust rights of action.