

Denying leniency to cartel instigators: Costs and benefits<sup>☆</sup>Zhiqi Chen<sup>a,b</sup>, Subhadip Ghosh<sup>c</sup>, Thomas W. Ross<sup>d,\*</sup><sup>a</sup> School of Economics, Nanjing University, China<sup>b</sup> Department of Economics, Carleton University, Canada<sup>c</sup> Grant MacEwan University, Canada<sup>d</sup> Sauder School of Business, University of British Columbia, Canada

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## ABSTRACT

A large number of countries have introduced successful leniency programs into their competition law enforcement to encourage colluding firms to come forward with evidence that will help detect cartels and punish price-fixers. This paper studies a feature of some of these programs that has received relatively little attention in the literature: the inclusion of “no immunity for instigators clauses” (NIICs). These provisions deny leniency benefits to parties that instigate cartel behavior or function as cartel ringleaders. Our results show that NIICs can lead to increased or decreased levels of cartel conduct. By removing the instigator's benefit from cooperating with the authorities, a NIIC undoes some of the destabilizing benefit the leniency program was intended to generate and thereby furthers cartel stability. On the other hand, the instigator faces an asymmetrically severe punishment under a NIIC and this can reduce the incentive to instigate in the first place.

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## 1. Introduction

Many countries now have laws against price-fixing and other forms of collusion – some even including criminal sanctions.<sup>1</sup> While passing laws against collusion is one thing, detecting and convicting participants for secretive price-fixing are quite another. As the real evidence of price-fixing resides with the participants, a number of national competition regimes have for many years provided incentives for participants to come forward with information by promising amnesty or leniency. Since its reform in 1993, the Corporate Leniency Policy introduced by

the United States Department of Justice (DOJ) has been widely regarded as the most successful policy in history in detecting cartels affecting American interests.<sup>2</sup> Following on this success many other countries introduced or revised their own leniency programs (“LPs”), for example there are such programs now in Australia, Brazil, Canada, China, the European Union and India.<sup>3</sup>

The implementation of these programs and their apparent success has, not surprisingly, attracted the attention of researchers trying to understand the full implications of these programs and how to optimize them for maximum social benefit.<sup>4</sup> However, one important feature of some LPs has not been well studied. In several countries with programs, such as the United States, Australia and Brazil, leniency is not available to parties viewed as instigators or ringleaders of the cartels. We refer

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<sup>1</sup> There are criminal prohibitions for price-fixing in, among other countries: Australia, Canada, the United Kingdom and the United States. See, e.g. Stephan (2014).

<sup>2</sup> Scott Hammond, Deputy Assistant Attorney General reported in 2005: “The Antitrust Division's Corporate Leniency Program has been the Division's most effective investigative tool. Cooperation from leniency applicants has cracked more cartels than all other tools at our disposal combined.” Hammond (2005).

<sup>3</sup> Of the 56 countries with antitrust laws in place in the study by Borrell et al. (2012), only 10 are reported as not having leniency policies. These include Argentina, Jordan, Malaysia, Peru, Thailand and Venezuela.

<sup>4</sup> Research continues to examine the extent to which the apparent success of leniency programs – as suggested by their very wide-spread adoption around the world – is real. See, for example Miller (2009), De (2010), Brenner (2009), and Borrell et al. (2014).

here to such excluding provisions as “no immunity to instigator clauses” or “NIICs”.<sup>5</sup> Interestingly, as well, some jurisdictions have implemented NIICs only to subsequently remove them.<sup>6</sup>

Our purpose here is to explore the implications of adding NIICs to LPs for both the establishment of collusive agreements and the detection of such agreements when they are put into effect. We find that NIICs can have ambiguous effects on the suppression of cartels. It is easy to understand why this might be the case. On the one hand, by removing the availability of leniency to instigators the NIIC undoes some of the supposed benefit of the LP itself — making more credible the instigator’s commitment to its cartel partners and thereby serving cartel stability. On the other hand, a potential instigator in a jurisdiction with a NIIC faces asymmetric, and harsher, punishments relative to its cartel partners who continue to enjoy the option of leniency applications. This can reduce any party’s incentive to instigate a cartel and it will reduce incentives for the instigator (and in some cases others as well) to cooperate with the authorities once investigations are underway.

Furthermore, our analysis of a situation in which firms are asymmetric reveals that the application of a NIIC when the instigator would otherwise be the “weakest link” (i.e. the most likely to defect and apply for immunity) will serve to make the instigator’s promise to adhere to cartel agreements more credible. This will enhance, rather than diminish, cartel stability.

We believe that our results suggest that caution be exercised before a competition authority includes a NIIC as part of its leniency program. In addition to recognized challenges associated with identifying which participant is the actual “instigator” for the purposes of applying a NIIC, we see here that the clause may actually stabilize collusion by giving participants more confidence that others will not provide incriminating evidence to the authorities. Therefore, while a NIIC may reflect a jurisdiction’s laying greater blame for cartel behavior on instigators, it could be poor antitrust policy.

The next section of the paper briefly reviews much of the economics literature on LPs, including the few papers that touch on issues closely related to those explored here. It also provides an overview of the model used here. Section 3 then presents the full model. Sections 4 and 5 present our results, respectively, for the case of an LP without and then with a NIIC. In Section 6 we explore a special case of our model — simplified in some dimensions — that allows us to explore the implications of adding firm asymmetry. Section 7 then provides our conclusions and suggestions for further research.

## 2. Literature and model overview

An earlier and seminal contribution on the economic theory of LPs was that by Motta and Polo (2003), which was followed by notable contributions from Spagnolo (2004), Aubert et al. (2006), Feess and Walzl (2004), Motchenkova (2004), Chen and Harrington (2007) and Harrington (2008), among others. A detailed review of the literature on LPs is provided in Spagnolo (2008). While there is a huge variation in these models, a general conclusion was that an LP does generally make collusion among firms more difficult, though the literature does point to some notable exceptions.

In fact, Motta and Polo (2003) themselves pointed out that, while LPs can indeed destabilize cartels, they can also have collusive effects. In particular firms may choose to collude but then report (“reveal” in

their terminology) to the authorities when the probability of conviction rises, in which case the LP reduces their expected fines from collusion. They also demonstrated that if leniency is made available to firms even after an investigation has been opened, the program would be more effective — indeed, in their model, an LP is not effective if it is available only before the investigation. Rey (2003) and Spagnolo (2004) however provided models in which pre-investigation leniency is also effective since it increases the gains from deviation. This is because defecting cartel members can now reveal and evade paying potential fines.

As noted earlier, relatively little formal attention has been paid in this literature to the possible effects of the asymmetric treatment of instigators or ringleaders — in particular the inclusion of NIICs into the LP.<sup>7</sup> That said, several authors have conjectured as to how such agreements might affect collusion and detection — in some cases suggesting possible effects modeled here.<sup>8</sup> Two other recent papers that do formally consider asymmetric treatment are Herre et al. (2012) and Bos and Wandschneider (2012). These papers offer complementary treatments to that provided here, presenting very different models (differences highlighted here as we proceed), though both share our interest in understanding the complicated relationship between NIICs and the incidence and detection of collusion. In a model in which no one firm has enough evidence to generate a conviction and side-payments between cartelists are permitted, Herre et al. (2012) show that adding a NIIC will have little effect when the instigator (“ringleader” in their terms) has a large amount of evidence to provide authorities, particularly if the base probability of authority investigation is low. Bos and Wandschneider (2012) study the effect on the highest sustainable cartel price of introducing a NIIC.<sup>9</sup> They find that excluding ringleaders will generally (but not always) lead to lower cartel prices.<sup>10</sup>

In its structure, the model here is closest to that of Motta and Polo (2003), with the important addition of the instigation stage and special policy treatment of instigators. To facilitate exposition and comparison with this earlier important work, we employ similar notation and terminology. We model a market in which two firms, initially symmetric, compete in an infinitely-repeated game. One firm may elect to suggest a collusive agreement — this is the act of instigation — and if the other agrees the agreement is confirmed and a violation of the competition law committed. The firms realize that such an agreement could be detected and punished by the Antitrust Authority (AA). If convicted firms face fines of  $F$  unless granted leniency. A conviction requires the realization of two separate events — first the AA must commence an investigation, second the investigation must result in a successful prosecution. These probabilities are taken as exogenous parameters here, determined by public policy decisions outside this model. The probability the AA opens an investigation is given as  $\alpha \in (0, 1)$ ; and the probability of conviction, conditional on firms coming to an agreement and the AA launching an investigation is given as  $\rho \in (0, 1)$ .

After reaching an agreement, each firm independently elects whether or not to honor the agreement. Importantly, we assume that defecting does not remove antitrust liability — the offense is committed by simply achieving agreement.<sup>11</sup> Subsequent to the realization of payoffs from colluding or defecting, the AA may (randomly) open an

<sup>7</sup> As with Bos and Wandschneider (2012), we do not draw any distinction between instigator and ringleader and model them as the same kind of actor. In an interesting recent paper, Davies and De (2013) examine the record of 89 European cartels between 1990 and 2008 to determine the frequency with which ringleaders appear and the kinds of roles such firms play in their cartels.

<sup>8</sup> Aubert et al. (2006) and Spagnolo (2008) are notable examples.

<sup>9</sup> Their cartel model is based on that in Bos and Harrington (2010).

<sup>10</sup> Recent work has been studying the effects of leniency programs on cartel stability experimentally. Bigoni et al. (2012) have even looked at the effects of treating ringleaders differently from other cartel members with results questioning the value of NIICs.

<sup>11</sup> This assumption is partly based on the idea that even a defecting firm may have prices well in excess of competitive prices, such that its customers are still hurt by its entry into the agreement. Moreover, a firm may be held liable for its previous acts of collusion if it chooses to defect in a later period.

<sup>5</sup> For example, in the US, in order to apply for amnesty or leniency, the leniency policy requires that “the corporation did not coerce another party to participate in the illegal activity and clearly was not the leader in, or originator of, the activity”, U.S. Department of Justice, Antitrust Division, Corporate Leniency Policy at A.6 (<http://www.justice.gov/atr/public/guidelines/0091.htm>).

<sup>6</sup> For example, the EU (removed in 2006) and Canada (removed in 2010). In a unique situation, China’s State Administration for Industry and Commerce (SAIC) has a leniency policy with a NIIC (applying to “organizers of monopoly agreements”) for non-price monopoly agreements while the National Development and Reform Commission (NDRC) has no NIIC in its leniency policy related to price-monopoly agreements. See Ye (2014).

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