Determinants of self-reporting under the European corporate leniency program

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ABSTRACT

We empirically investigate determinants of self-reporting under the European corporate leniency program. Applying a data set consisting of 442 firm groups that participated in 76 cartels decided by the European Commission between 2000 and 2011, we find that the probability of a firm becoming the chief witness increases with its character as repeat offender, the size of the expected basic fine, the number of countries active in one group as well as the size of the firm's share in the cartelized market. Our results suggest, inter alia, that the reform of the European corporate leniency program in 2002 had a positive effect on the incentives to self-report.

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1. Introduction

The fight against hardcore cartels is ranked high on the agenda of competition authorities around the world. The recent efforts of, e.g., the European Commission (EC) to detect and subsequently punish cartels are reflected in an improved enforcement record. While the EC decided only 10 cartel cases in the 1995–1999 period, the number increased to 30 in the period from 2000–2004 and to 33 in the 2005–2009 period.[1] Although this substantial increase is certainly driven by various policy changes such as new fining guidelines or an increased cooperation among competition authorities, many commentators argue that the introduction of the EC leniency program (LP) in 1996 is likely to be a key driver.

Generally, a LP offers law infringers (i.e., natural or juridicial persons) either a fine reduction or even full immunity from fines if they disclose an infringement to the responsible authority and (fully) cooperate with it in the subsequent investigation. However, the design of leniency programs offers several degrees of freedom that may (directly or indirectly) influence the incentives of infringers to apply for leniency. Examples include the treatment of repeat offenders, the degree of fine reductions awarded to the first reporting infringer and the runner-up infringers, the treatment of ringleaders or the types of evidence that are considered sufficient to receive a reduction or even immunity from fines.

Against this background, we empirically investigate determinants of self-reporting under the European corporate leniency program. Applying a data set consisting of 442 firm groups[2] that participated in 76 cartels decided by the European Commission between 2000 and 2011, we find that the probability of a firm becoming the chief witness (defined as the firm that is granted full immunity) increases with its character as repeat offender, the size of the expected basic fine, the number of countries active in one group as well as the size of the firm's share in the cartelized market. Our results suggest, inter alia, that the reform of the European

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[1] Data source: European Commission, Cartel Statistics (situation as of 5 December 2013), available at http://ec.europa.eu/competition/cartels/statistics/statistics.pdf.

[2] Firms within one group are linked through ownership and are jointly liable for cartel fines.

corporate leniency program in 2002 had a positive effect on the incentives to self-report.

The paper is structured as follows. The following Section 2 provides a review of the existing theoretical and empirical literature followed by a brief discussion of the determination of fines and the characteristics of the leniency program in the European Union in Section 3. Subsequently, Section 4 presents our empirical analysis. While Section 4.1 develops testable hypotheses, Section 4.2 describes the construction of the data set and discusses the descriptive statistics. Section 4.3 continues with the derivation of the econometric model and presents the key results of our empirical analysis. Section 4.4 discusses these key results and derives both important policy conclusions and future research needs. Section 5 concludes the paper with a review of the key results.

2. Review of the existing literature

An empirical investigation of determinants of becoming a chief witness can build on a rather rich theoretical and empirical literature. In the following, we restrict our review to the contributions that show a direct relation to our research question.

2.1. Review of theoretical research

According to basic oligopoly theory, firms not only have an incentive to form a cartel – basically because coordinating the respective competitive activities leads to greater profits than acting independently – but they also have possibilities to get over deviation incentives and stabilize such agreements. Although many cartels have indeed managed to operate successfully for decades or even centuries, observed breakdowns of cartels suggest that (changes of) internal and/or external factors can promote cartel instability and finally cause the collapse of the cartel.

From a purely external perspective, cartels can break down because a competition authority detects the illegal conspiracy. Internally, however, cartels can become unstable and collapse because one or more individual cartel members come to the conclusion that their cost-benefit assessment has been altered in a way that suggests individual profits to be higher in a non-cartel state. Catalysts of such changes in individual cost-benefit assessments can be seen in, for example, market entry by non-cartel firms, technological changes (that might change various characteristics of the cartelized product), differences between current and future demand expectations (see, e.g., Rotemberg and Saloner, 1986 or Haltiwanger and Harrington, 1991) or simply imperfect information between the firms in the cartel that might trigger price wars (see, e.g., Green and Porter, 1984).

Although cartels would also face the danger of breaking down in the absence of any kind of competition policy, it is undisputed that certain policy measures can have an impact on the collapse of cartels. In particular, the introduction and operation of a leniency program (LP) aims at altering the cost-benefit calculation of the cartel firms thereby making the collapse of a cartel more likely. In a seminal paper, Motta and Polo (2003) identify two diverging effects triggered by the introduction of a LP. On the one hand, firms are induced to come forward once an investigation is opened because the probability of being caught increases and the expected cartel profits decrease. Reporting reduces the expected fines and firms will therefore desist from continuing collusion. On the other hand, a LP might also give rise to an ex-ante pro-collusive effect; basically because the possibility of reporting and receiving immunity from fines reduces the expected costs of cartel detection and conviction (see, e.g., Spagnolo, 2005; Harrington, 2008 for further contributions in this respect).

In two recent contributions, a key assumption of earlier leniency models – symmetric information of all participating firms on the probability of detection and conviction – is relaxed. Harrington (2013) models a two-firm cartel setting with firms having private information. He shows that a LP might motivate a firm not only to report the cartel because it fears detection by the competition authority but also because it fears to become the runner-up in the leniency race thereby missing out the chance to receive full amnesty. Marvao (2013) aims at extending Harrington's model by allowing firms not only to have private information but also to be heterogeneous in terms of sales. She shows that the firm chooses to report as soon as the value of reporting is higher than not reporting (which is a function of the rival's signal, its own signal and the expected fine) which in turn is dependent on the firm's sales level (and not only on higher detection probabilities).

In a nutshell, existing theoretical research suggests that leniency programs can motivate individual cartel members to deviate from cartel agreements. Although there does not appear to be a fully developed theory of which cartel member is most likely to deviate from a cartel agreement (at what particular point in time) yet, key reasons include both the expectation to gain a competitive advantage compared to the other cartel members in the post-cartel world or simply to avoid a competitive disadvantage by becoming a cartel member that does not receive full leniency (and consequently have to pay large fines).

2.2. Review of empirical research

Complementary to theoretical studies that aim at understanding the effects of leniency programs on cartel stability, the recent past has also seen substantial empirical research shedding light on this important research question. For example, a larger strand of empirical research investigates the lifespan of cartels in general and how exogenous shocks (such as policy changes) affect this lifespan in particular (see, e.g., Levenstein and Suslow, 2006; Abrantes-Metz et al., 2012, or De, 2010).

A further (smaller) collection of papers concentrates on an isolation of the effect of leniency programs on cartel stability and cartel breakdown by using cartel-level data. For example, Zhou (2012) shows that after the implementation of the most recent version of the EC LP, cartel duration increased in the short-run suggesting that only 'marginal cartels' from a population of longer-lasting cartels are discovered immediately after the LP is introduced. In the long-run, however, he finds cartel duration to decrease below the short-run level basically because the LP imposes its full effect on cartels born after the policy change. In another empirical study, Brenner (2009) investigates whether the introduction of the EC LP gives rise to increased information revelation by comparing cartels convicted before the introduction of the LP in 1996 to those convicted thereafter. He finds, inter alia, that (1) the EC obtained more evidence post-LP (with the amount of fine used as proxy), (2) the information provided was richer when leniency applicants and the EC cooperated more closely (with the amount of fine reduction due to leniency used as proxy) and (3) the LP had no destabilizing effect on cartels (as measured by the number of years the cartel operated under the LP).

Although the sketched empirical studies based on cartel-level data provide interesting and policy-relevant results, they are – by construction – unable to take the heterogeneity within cartels into account; however, for answering our research question, it is crucial to be able to differentiate between firms that become the chief witness and all other cartel members, i.e., to use a firm-level (or firm group-level) data set.

Interestingly, an empirical analysis of colluding firms (or groups of firms) instead of entire cartels has attracted much less attention in the empirical literature on leniency programs. To our knowledge,