Summary of the Research Project Dnr 104/2004

"On Optimal Mechanisms in Merger Control and Optimal Fines for Cartel Deterrence"

**Methods and scope of the project**

The project consists of two parts on Merger Control and on antitrust policies aimed at deterring price fixing cartels. The part on Merger Control is theoretical and provides a rationale for evaluating horizontal mergers on the basis of their effects on consumers' welfare. In addition, this part of the project evaluates event studies on rival returns, an empirical method both for assessing the competitive effects of horizontal mergers and evaluating competition authorities' decisions to approve or block proposed horizontal mergers. The second part on antitrust policies aimed at deterring price fixing agreements is both theoretical and experimental. The theoretical part analyzes antitrust policies embedded with leniency programs, with an emphasis on the structure of optimal fines and on alternative punishments against price fixing cartels such as prison sentences against managers and other individuals instigating and organizing cartels. The experimental part evaluates in the lab both traditional antitrust policies and modern policies embedded with leniency programs as well as policies rewarding whistle blowing cartel members.

**Summary and Main results**

*A Consumer Surplus Defense in Merger Control*. The main task of Merger Control is to evaluate mergers in light of their welfare effects on different interest groups and to take a decision based on this evaluation. The largest jurisdictions in the world evaluate mergers on the basis of their effects of consumers' welfare. This part of the project shows that this widespread practice can be optimal even if competition policies' true objective also is to promote the interests of other groups in society such as the producers. A government wanting to promote an efficient allocation of resources as measured by the total surplus, should strategically delegate to its competition authority a welfare standard with a bias in favour of consumers. A consumer bias means that some welfare increasing mergers will be blocked. This is optimal, if the relevant alternative to the merger is another change in market structure that will even further increase the total surplus. A consumer bias is also shown to enhance welfare even though it blocks some welfare increasing mergers when the relevant alternative is the status quo.

*Industry Concentration and Welfare - On the Use of Stock Market Evidence from Horizontal Mergers*. There is diverging empirical evidence on the competitive effects of horizontal mergers: consumer prices (and thus presumably competitors' profits) often rise while competitors' share prices fall. This part of the project constructs a model of endogenous mergers providing a possible reconciliation of this diverging empirical evidence. It is demonstrated that anticompetitive mergers may reduce competitors' share prices, if the merger announcement informs the market that the competitors lost a race to buy the target. Thus event studies on rival returns may fail to identify the competitive effects of

horizontal mergers. This result is also of interest for evaluating the costs and benefits of Merger Control, since event studies on rival returns have suggested that Merger Control is costly for society.

*Optimal Fines in the Era of Whistlebowers*. The paper reviews current methods for calculating fines against cartels in the US and EU, and simulate their deterrence effects under different assumptions on the legal and economic environment. Previous simulations of the effects of fines ignore the different type of deterrence that leniency programs bring about, and, therefore, grossly overstate the minimum fine likely to have deterrence effects. With schemes that reward whistleblowers, the minimum fine with deterrence effects falls to extremely low levels (below 10% of the optimal "Beckerian" fine). Strategic judgement-proofness can and should be prevented by suitable regulation or extended liability. Criminal sanctions, in the form of imprisonment, certainly bring benefits (and costs) in terms of cartel deterrence, but the firms' limited ability to pay does not appear any longer such a strong argument for their introduction.

*Leniency and Whistleblowers in Antitrust*. The paper reviews the recent evolution of leniency programs for cartels in the US and EU, surveys their theoretical economic analyses, and discusses the empirical and experimental evidence available, also looking briefly at related experiences of rewarding whistleblowers in other fields of law enforcement. It concludes with a list of desiderata for leniency and whistleblower reward programs, simple suggestions how to improve current ones, and an agenda for future research. The issues discussed appear relevant to the fight of other forms of multi-agent organized crime – like auditor-manager collusion, financial fraud, or corruption – that share with cartels the crucial features that well designed leniency and whistleblower programs exploit.

*Cartels Criminalization and their Internal Organization*. This is a note stressing the many economic mistakes often incurred in legal debates on the need to criminalize antitrust infringements, like ignoring the presence of leniency program and assuming it is a good idea to 'fine tune the fines' relative to the specific financial situation of the infringer. It also considers the issue whether more sophisticated deterrence instruments like leniency programs are likely to induce cartels to switch to more socially damaging (e.g. violent) cartel enforcement practices.

*Corporate Governance and Collusive Behavior*. This paper examines the relationship between corporate governance and competition (and the lack of it), particularly with regard to cartel formation, and discusses how corporate governance and firm agency problems affect optimal law enforcement against cartels, both in terms of sanctions and leniency policies. Many of the conclusions appear applicable, with minor changes, to non-antitrust forms of collusion, such as collusion between auditors and management, and more generally to corporate and organized crime.

*Fines, Leniency, Rewards and Organized Crime: Evidence from Antitrust Experiments*. Estimating the frequency with which cartels are formed is almost impossible because non-detected cartels are not

observed. Therefore it is difficult to evaluate empirically the relative performance of different policies aimed at deterring price fixing cartels. This project evaluates instead such policies experimentally by comparing deterrence levels and prices across different policies when subjects – students – are playing a cartel formation game in a lab. Both traditional and modern policies embedded with a leniency program increased deterrence levels; these policies did not reduce overall prices, however, because the cartels that were formed were more stable, leading to higher cartel prices. Only policies rewarding whistle blowers were welfare improving in the sense that they reduced prices.

*Risk Aversion, Prospect Theory, and Strategic Risk in Law Enforcement: Evidence From an Antitrust Experiment.* Cartels can be detected through independent investigations conducted by competition authorities or through whistle blowing by cartel members. These two ways of detecting cartels are substitutes but the latter is preferable from a welfare point of view, since fewer resources are devoted to cartel detection. Using the above experimental approach, the project evaluates under different law enforcement institutions the effects on cartel deterrence of increased fines combined with a reduced probability of detection (i.e. reduced resources to cartel detection). The deterrence effect is much larger under policies embedded with a leniency program, confirming the crucial role of strategic risk – the risk of being cheated upon – for the success of leniency programs.