Hierarchical Global Pollution Control in Asymmetric Information Environments: A Continuous-type, Three-tier Agency Framework[1]

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Abstract

We construct a continuous-type, three-tier agency model with hidden information and collusion à la Tirole (1986, 1992), thereby providing a framework that can address the problem of the global pollution control. By extensively utilizing the Monotone Comparative Statics method, the First Order (Mirrlees) approach and a graphical explanation, we characterize the nature of the equilibrium contract that the Supra-National Regulator (SNR) can implement under the possibility of collusion by the government and the firm. We compare the two-tier vs. three-tier regulation structures from the SNR's viewpoint, and then obtain a comparative statics result on the accuracy of monitoring and the possibility of collusion. We further examine whether the SNR has an incentive to adopt the dual supervision structure, with reference to "Regulatory Capture".

***Key Words*:** Global Pollution Control, Mechanism Design, Hidden Information, Collusion, Monotone Comparative Statics

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