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## **DO PLANTS MAKE LESS POLLUTION REDUCTION EFFORTS DURING RECESSION? PLANTS' RESPONSE TO LOCAL ECONOMIC CONDITION**

### **Abstract:**

The U.S. communities are experiencing economic hardship with plant or business closings contributing to high unemployment rates. In this circumstance, communities and local governments may prioritize economic recovery over environmental improvement, thereby weakening community and government pressure against nearby polluting plants. Under this weakened public pressure, plants may make less effort to reduce their emission. In an attempt to explore the concern, this study examines the impact of local economic downturn on nearby chemical plants' toxic release reduction behavior. A total of 352 chemical use plants in upstate New York and their toxic release inventory data were traced for five years (2006-2010) and analyzed with local economic condition variables along with other socio-economic and regulatory environmental variables.

Particularly, this study estimated the impact of local economic recession on plants' behavior by adopting an alternative measure. Instead of plants' simple toxic release levels, which could be also an outcome of plants' production volume change, this study used an explicit measure of plant's toxic release reduction efforts. The measure of plant's reduction effort was constructed based on Berrone and Gomez-Mejia's 2009 study, whose effort measure considers both toxic release level and production increase ratio. In addition, along with widely used economic recession measure—unemployment rates, this study also used plant/business closing rates of the community, assuming it is a more tangible and realistic indicator of the local economic condition community members recognize.

The results show plants' toxic release reduction effort, which incorporated both toxic release level and production increase ratio in its measurement, was reduced when unemployment and plant closing rates are high. The results imply declining economy weakens community pressure and governments' monitoring/enforcement intensity by making them prioritize the recovery of local economy over pollution reduction/environmental conservation. The findings of this study may reveal the limitations of the recent regulatory approach, which employs a public pressure mechanism to achieve polluters' better environmental performance, such as information-based regulation or voluntary programs.

### **Keywords:**

Recession, pollution reduction effort, plant closing, unemployment, toxic release inventory.