

Fire and Punishment: Enforcement incentives and strategic fire use in the Brazilian Amazon

Anna Pede*

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Incomplete monitoring of illegal behavior may cause violators to reoptimize their criminal activities. I study how satellite monitoring of deforestation impacts illegal land-clearing behavior in the Brazilian Amazon. I argue that by detecting primarily mechanical clearings, the introduction of near-real-time satellite monitoring favored a technological substitution towards the use of fire. Using cloud cover as an instrument for satellite-based detection, I find that municipalities under more intensive surveillance experienced a statistically significant substitution from mechanical to fire-based clearing. My findings help explain why Amazon fires have persisted despite the overall decline in deforestation starting from 2005.

Keywords: Forest fires, deforestation, environmental law enforcement

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