Recreational Marijuana Legalization and Manufacturing Work Hours: A State-Level Econometric Analysis

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An exploratory 50-state analysis of whether recreational marijuana legalization is associated with average weekly payroll hours for manufacturing production employees.

QUESTION AND DATA

The project uses 2021 cross-sectional data for all 50 states. The outcome is sector-specific weekly manufacturing payroll hours - not productivity, employment, or work hours for all workers.

MODEL

Ordinary least squares models include economic, demographic, education, health, and regional controls, along with diagnostic tests and a logged specification.

OBSERVED ASSOCIATION

In the main specification, legalization status is associated with about 1.2 fewer weekly manufacturing payroll hours, holding selected controls constant. The estimate is statistically significant only at the 10 percent level; the logged model has the same direction.

INTERPRETATION

The result is exploratory and does not establish that legalization changed work hours. A state-level cross-section can identify an association but cannot isolate policy timing or individual behavior.

DIAGNOSTICS

The analysis does not detect heteroskedasticity, but multicollinearity and distributional concerns remain. Robustness checks help test specification sensitivity; they do not remove the design's structural limits.

LIMITATIONS

- Only 50 aggregate observations and a risk of ecological inference
- Omitted confounders and a simplified binary policy measure
- Pandemic-era data and no longitudinal or individual-level identification

PORTFOLIO NOTE Completed academic econometrics paper. The reported association is not presented as causal evidence.