Punishment and Crime: Impact of death penalty on local crime rates in India

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ISI Annual Growth and Development Conference, Dec 19, 2024

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- Does the death penalty (DP) provide greater deterrence of murders beyond that afforded by a sentence of life imprisonment? No.
- Our paper: deterrent effect of DP on crime from a large developing country with lower state capacity, viz., India.

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Global instances of DP ↑: 2,016 death sentences & 883 excecutions in 2022, highest in 5 years

Importance of Crime Prevention

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- High crime rates also have high socioeconomic costs & negatively affect social capital formation (Czabanski 2008)

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- Dynamic DID estimators that allow for treatment heterogeneity in our context
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- Rape: same for rape. (Some results on rape counts after 7-8 yrs after issuance of DP; interpretation?)

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- Third: We contribute to a growing lit on use of admin data to explain impacts of judicial outcomes on socioeconomic phenomena

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- Conversion of a death sentence to execution is low due to delays; most defendants serve out their sentences on death row. Since 2000: 8 DP executions in India

Data

 District-level crime rates, 1998-2020, from NCRB, (Murders = murder + attempted murder + culpable homicide not amounting to murder)

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- DPIR records each death sentence imposed by trial courts in India between 2000-2021, & tracks the progress of each case. Info from High Courts
- DPD: tracks death sentences imposed since 2016
- Data from DPIR combined with data from DPD to get DP stats over 20+ years: 1117 district-year observations have observed at least one death sentence. 8 executions since 2000.



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Empirical Strategy I: TWFE

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$$crime_{i,d,t} = \beta_0 + \beta_1 anydeath_{d,t-1} + \beta_2 X_{d,t(-j)} + \beta_d + \beta_t + u_{i,d,t}$$
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$$crime_{i,d,t} = \beta_0 + \beta_1 deathcount_{d,t-1} + \beta_2 X_{d,t(-j)} + \beta_d + \beta_t + u_{i,d,t}$$
(2)

X is a vector of control variables capturing contemporaneous and lagged district characteristics relevant to crime rates in a year: dist pop in year *t*, districts' criminality trend using the rate of total cognizable crimes, excluding total murders and total rapes, averaged over the past 5 years; + a vector of binary indicators taking the value 1 if district *d*'s trial court had issued a death sentence in year t - j for $1 < j \le 5$, and 0 otherwise, and the same vector of binary indicators for lagged number of death sentences. β_d and β_t are the district and year fixed-effects respectively. Standard errors clustered at the district-level

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Allows for heterogeneous treatment effects across multiple time periods: variations in impact of treatment across time + dynamic effects of death sentences

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- CS estimator: effect of an incidence of DP in a district on crimes in the following 10 years in that dist
- We first estimate the individual district-time-specific treatment effects, allowing for treatment effect heterogeneity, then aggregate them to produce measures of overall group treatment effects.

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(3)

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where G_g is a binary variable indicating if a unit starts the treatment at time g, $Y_t(g)$ indicates the outcome value of group g at period t, and $Y_t(0)$ indicates the potential outcome value of group g at period t given they are not treated, conditioning on regions belong to group G_g and the covariates.

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- Main spec for avg effect incl pop control first, then add 5-yr crime rolling avg.
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- Exclude Tier-1 cities to account for the possibility that results might be driven by their crime rates

Impact of death penalty sentence being handed down by a district court judge in the previous year on

- Homicides in subsequent years
- Rapes in subsequent years

Results have been estimated for any death sentence in the previous year, as well as number of death sentences. All estimates control for the 5-year rolling average of crimes recorded in the district.

Impact of death sentence on murders



Impact of death sentence on rapes



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Results - Heterogeneity and robustness

Heterogeneity in main effects by

- Female to male ratio in the district
- Share of agricultural households
- Share of migrant workers
- Share of SC/ST population
- Share of marginal workers

Results are also robust to excluding Tier-1 cities and metros.

Heterogeneity by female ratio



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Heterogeneity by share of agricultural households



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Heterogeneity by share of migrant workers

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Heterogeneity by share of SC/ST population





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Impact on murders and rapes: Excluding metros



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- Marginalised communities more likely to be incarcerated & convicted.
- DP is an irreversible punishment: an error is costly + it is not a deterrent => need to rethink the rationale behind the DP.