Public Defender Value Added

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Motivation

Gideon's Army (HBO, 2003)

"Even the intelligent and educated layman . . . requires the guiding hand of counsel at every step in the proceedings against him. Without it, though he be not guilty, he faces the danger of conviction because he does not know how to establish his innocence."

Justice George Sutherland (1932)

Introduction

Research Questions:

- How important are public defenders (PDs)?
- Does PD quality vary with observable attorney characteristics?
- Should counties outsource to private court-appointed attorneys (CAAs)?

Methodology:

- Adapt value-added methods from Kane & Staiger (2008) to estimate PD effects.
- Estimate the association between attorney characteristics and behavior and PD effects.

Why does it matter?

- Fairness: Do attorney assignments impact case outcomes as much as case facts?
- Labor Market: If attorney quality strongly predicts outcomes, counties may be misallocating incarceration spending.

Outline

Previous Literature

Agan et al. (2021) find that defendants represented by court-appointed attorneys face higher conviction and incarceration rates than those with private counsel.

Shem-Tov (2022) finds that defendants randomly assigned a public defender fare better than those with court-appointed attorneys, experiencing lower conviction rates, reduced incarceration likelihood, and shorter sentences.

Abrams and Yoon (2007) finding significant heterogeneity in PD performance; more experienced attorneys secure better outcomes, while law school rank has no effect, and Hispanic attorneys achieve notably shorter sentences for their clients.

Anderson and Heaton (2012), finds that defendants in homicide cases randomly assigned a public defender reduces the defendant's sentenced imprisonment time by 31% but has no effect on the probability of conviction.

Outline

Data

Dallas Misdemeanor and Felony Court Records

- Defendant name, offense date, offense type, charge type, case disposition date, and case disposition from 2005 to 2019 obtained via FIOA.

Attorney Information

- Attorney name and type (i.e., public defender, court appointed, or privately retained) obtained via web scraping.

Vale Added Primer

Kane and Staiger (2008)

Consider the following model:

$$Y_{it} = X_{it}'\gamma + \nu_{it}, \quad \text{where} \quad \nu_{it} = \theta_{j(i,t)} + \eta_{j(i,t)t} + \epsilon_{it}$$

where

- Y_{it} and X_{it} are student's outcomes and observable characteristics, respectively.
- The residual ν_{it} is composed of a teacher effect (θ_j), teacher-year effect (η_{jt}), and student-year error (ϵ_{it})
- θ_{jt}, η_{jt}, and ϵ_{it} are assumed to all be independent.

Kane and Staiger (hereafter, KS) estimate and calculate the residuals ν_{it}. By decomposing the variance ν_{it}, they are able to produce precise estimate of θ_j and it's variance.

Value Added Primer

Kane and Staiger (2008)

The variance of ν_{it} is equal to $\text{Var}(\nu_{it}) = \sigma_\theta^2 + \sigma_\eta^2 + \sigma_\epsilon^2$. We can calculate each of these terms using the following equations

$$\hat{\sigma}_\theta^2 = \text{Cov}\left(\bar{\nu}_{jt}, \bar{\nu}_{jt'}\right)$$
$$\hat{\sigma}_\epsilon^2 = \text{Var}\left(\nu_{it} - \bar{\nu}_{j(i,t)t}\right)$$
$$\hat{\sigma}_\eta^2 = \text{Var}\left(\nu_t\right) - \hat{\sigma}_\theta^2 - \hat{\sigma}_\epsilon$$

KS use these variance components to calculate teacher's value added, however, they are of interest by themselves.

Value Added Primer

Kane and Staiger (2008)

A teacher's VA estimator is a weighted avg. of students' mean classroom residualized test scores:

$$\hat{\theta}_j \equiv \sum_t \omega_{jt} \bar{\nu}_{jt}, \quad \text{where} \quad \omega_{jt} = \frac{h_{jt}}{\sum_t h_{jt}} \text{ and } h_{jt} = \frac{1}{\sigma_\eta^2 + \sigma_\epsilon^2 / n_{jt}}$$

To form EB estimates, KS shrink $\hat{\theta}_j$ by the signal variance-to-total variance ratio (a function of the signal-to-noise ratio):

$$\hat{\theta}_j^{EB} = \frac{\hat{\sigma}_\theta^2}{\text{Var}\left(\hat{\theta}_j\right)} = \left(\frac{\sigma_\theta^2}{\sigma_\theta^2 + \frac{1}{\sum_t h_{jt}}} \right) \hat{\theta}_j$$

This VA measure is commonly used (e.g., Jackson (2018, JPE), Bau and Das (2020, AEJ:EP))

Heterogeneity in PD Effects

Between Attorneys

Questions

- Does PD quality correlate with experience or law school prestige?
- Do top PDs use specific strategies (e.g., trial delays, plea deals)?

Method: OLS

$$Y_{ijt} = \beta_0 + \beta_1 \hat{\theta}_j^{EB} + \gamma X_{it}' + \varepsilon_{it}$$

- Y_{it} are attorney characteristics and behavior
- X_{it} are observable case and defendant characteristics

Heterogeneity in PD Effects

Over Time

Questions

- Do prosecutors affect PD influence on outcomes?
- Do laws (e.g., mandatory minimums) limit PD impact?

Method: Comparisons of Variances

- Estimate $\hat{\theta}_{j0}^{EB}$ and $\hat{\theta}_{j1}^{EB}$ for each attorney j under two different prosecutors.
- Compare $\sigma^2_{\hat{\theta}_{j0}^{EB}}$ and $\sigma^2_{\hat{\theta}_{j1}^{EB}}$ to assess how much attorney quality influences defendant outcomes across prosecutorial regimes.

Heterogeneity in PD Effects

PDs Vs. CAAs

Questions

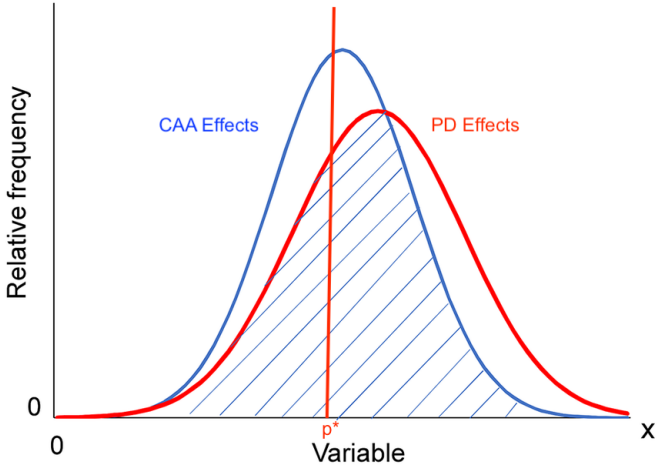
- When should counties outsource to court appointed attorneys?

Method: Comparison of Means

- In multi-defendant cases, PD and CAA assignments are quasi-random (Shem-Tov, 2022). Estimate $\hat{\theta}_j^{EB}$ for PDs and CAAs in these cases.
- Compute $p^\star$, the percentile where PD effects fall below the mean CAA effect.

Heterogeneity in PD Effects

PDs Vs. CAAs



Questions for the Audience

Economics Implications

- What economic theory can I test in this setting?

Extending Past Research

- What other things can I test these value added estimates?