Incarceration of African American Men and the Impacts on Women and Children

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ASSA

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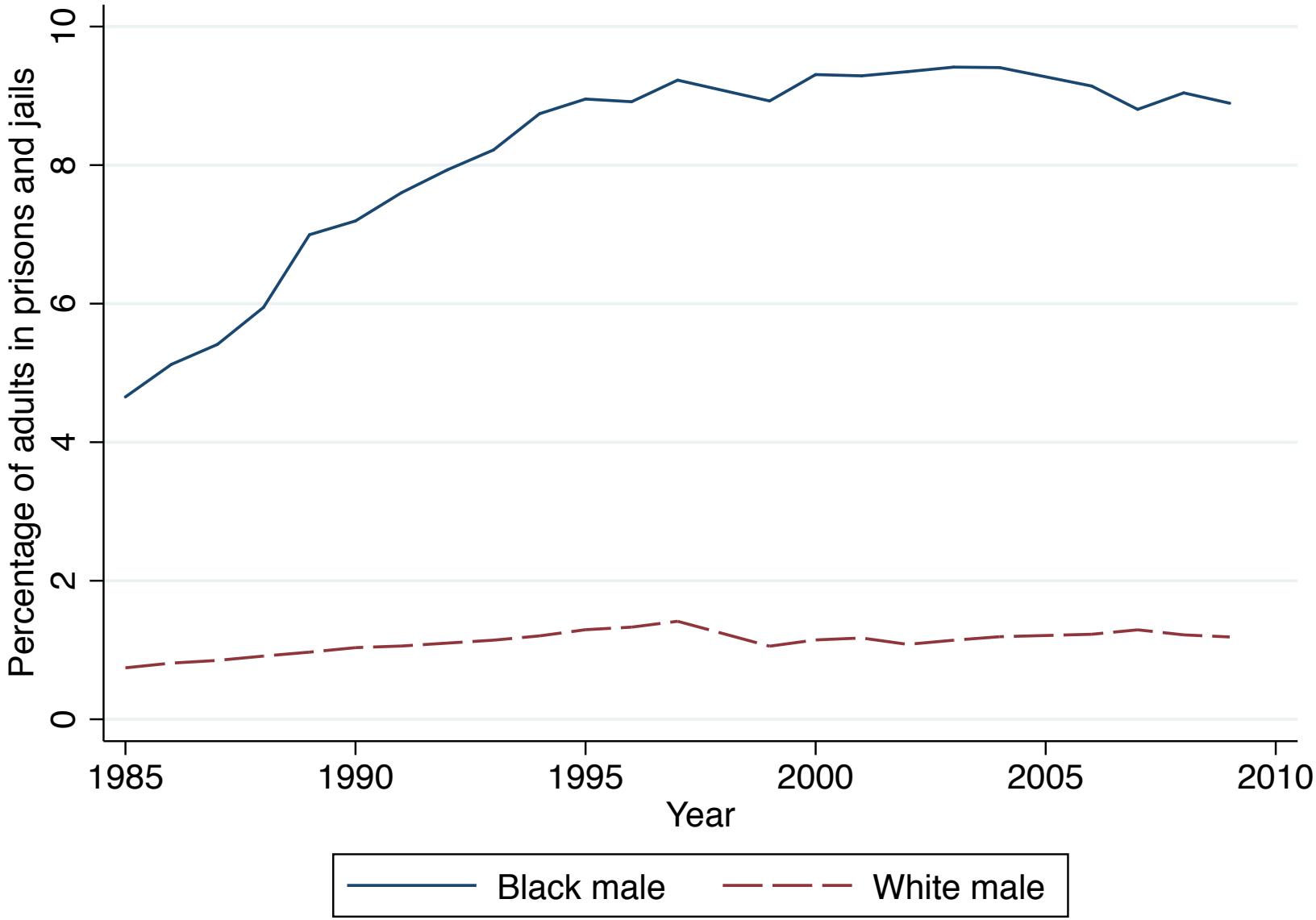
Mass Incarceration



Arrest Rate | Crime Rate | Log Percentage

Research Questions

1. Causal effects of incarceration of African American men on
   - Women's marriage and labor market outcomes;
   - Children's family structure, long-run educational outcome, and income.

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2. Different effects of black men who serve relatively short and long terms of imprisonment.

Why important?

- Evaluation of sentencing policies.
- Understanding of inequality and racial gap.

Literature Review

- Impacts of Incarceration
  - Former prisoners: E.g., Levitt (1996), Kling (2006), Hjalmarsson (2009), Green and Winik (2010), Di Tella and Schargrodsky (2013), Aizer and Doyle (2015), Mueller-Smith (2015), Bhuller et al. (2018).
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  - Race-specific sex ratios.
- Sentencing Policies and Prison Population
  - Panel regressions
  - Simulation models: Blumstein and Beck (1999), Pfaff (2011), Raphael and Stoll (2013), Neal and Rick (2016).

Data and Measurement

- National Corrections Reporting Program (NCRP)
  - Individual-level records of all prisoners: Admissions and releases (1983-2009); stocks in custody (2004-2009).
  - Demographic and sentence information (e.g., offense, sentence, county of sentence).
  - Incarceration rate by gender, race, year, and MSA where sentence was imposed.

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  - Arrests by year, state, offense and gender/ race.
- Household data: 5% Census, ACS, CPS.
  - Women's and children's outcomes.

Empirical Strategy

- Impact of black male incarceration on women and children:

$$y_{imt} = \beta_0 + \beta_1 incar_{mt} + X_{imt}\pi + \theta_t + \mu_m + \epsilon_{imt}.$$

  - i: individual; m: MSA; t: year.
  - y: women's or children's outcome.
  - $incar$: the incarceration rate of black men.

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Simulated Instrumental Variable

- Simulated IV: Variation in sentencing laws across states and over years.
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- Construction: sufficient statistics of sentencing outcomes.
  - Probability of prison admission conditional on arrest;
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  - Leave out the own MSA: local crimes and judges.
- Identifying assumption: Changes in sentencing policies are exogenous.
  - Confounding variables (e.g., crime rate, racial composition).

Simulation Model of Prison Population (I)

- A^c_{mt}: number of admissions for crime c, MSA m, and year t.
- C^c_{mt}: population of criminals – prevalence of crime.
- α^c_{mt}: Pr(arrest | engagement in crime c) – police effectiveness.
- γ^c_{mt}: Pr(prison admission | arrest for crime c) – punitiveness of sentencing policies.

$$A^c_{mt} = C^c_{mt}\alpha^c_{mt}\gamma^c_{mt}$$

Simulation Model of Prison Population (II)

Assume that the prison population starts with zero at $t = 0$.

The prison population of year-end 1 sentenced from MSA m (I_{m1}) is:

$$I_{m1} = \sum_{c=1}^{N} I_{m1}^{c} = \sum_{c=1}^{N} A_{m1}^{c} = \underbrace{\sum_{c=1}^{N} C_{m1}^{c} \alpha_{m1}^{c} \gamma_{m1}^{c}}_{\text{prisoners admitted in year 1}}$$

The prison population of year-end 2 sentenced from MSA m (I_{m2}) is:

$$\begin{aligned} I_{m2} &= \sum_{c=1}^{N} A_{m2}^{c} + \sum_{c=1}^{N} A_{m1}^{c} \mathbb{1}\{\bar{S}_{m1}^{c} > 1\} \\ &= \underbrace{\sum_{c=1}^{N} C_{m2}^{c} \alpha_{m2}^{c} \gamma_{m2}^{c}}_{\text{prisoners admitted in year 2}} + \underbrace{\sum_{c=1}^{N} C_{m1}^{c} \alpha_{m1}^{c} \gamma_{m1}^{c} \mathbb{1}\{\bar{S}_{m1}^{c} > 1\}}_{\text{unreleased prisoners from year 1}} \end{aligned}$$

where $\bar{S}_{mt}^{c}$ is average time served.

Simulation Model of Prison Population (III)

The prison population of year-end t sentenced from MSA m (I_{mt}) is:

$$I_{mt} = \underbrace{\sum_{c=1}^{N} C_{mt}^{c} \alpha_{mt}^{c} \gamma_{mt}^{c}}_{\text{new admissions}} + \underbrace{\sum_{c=1}^{N} \sum_{j=1}^{t-1} C_{mj}^{c} \alpha_{mj}^{c} \gamma_{mj}^{c} \mathbb{1}\{\bar{S}_{mj}^{c} > t - j\}}_{\text{accumulation from the past flows}}.$$

- C_{mt}^{c}: prevalence of crime
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- γ_{mt}^{c} and $\bar{S}_{mt}^{c}$: punitiveness of sentencing policies

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Let $C_{mt}^{c} \alpha_{mt}^{c}$ be constant: $C\alpha$ – *normalization*

$$I_{mt}|_{\text{arrest}} = \sum_{c=1}^{N} C\alpha \gamma_{mt}^{c} + \sum_{c=1}^{N} \sum_{j=1}^{t-1} C\alpha \gamma_{mj}^{c} \mathbb{1}\{\bar{S}_{mj}^{c} > t - j\}$$

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Let $C_{mt}^{c}\alpha_{mt}^{c}$ be constant: $C\alpha$ – *normalization*

$$I_{mt}^{*}|_{\text{arrest}} = \sum_{c=1}^{N} C\alpha\gamma_{s(m)t}^{c} + \sum_{c=1}^{N} \sum_{j=1}^{t-1} C\alpha\gamma_{s(m)j}^{c} \mathbb{1}\{\bar{S}_{-mj}^{c} > t-j\}$$

Simulated IV

Simulated instrument for the incarceration rate:

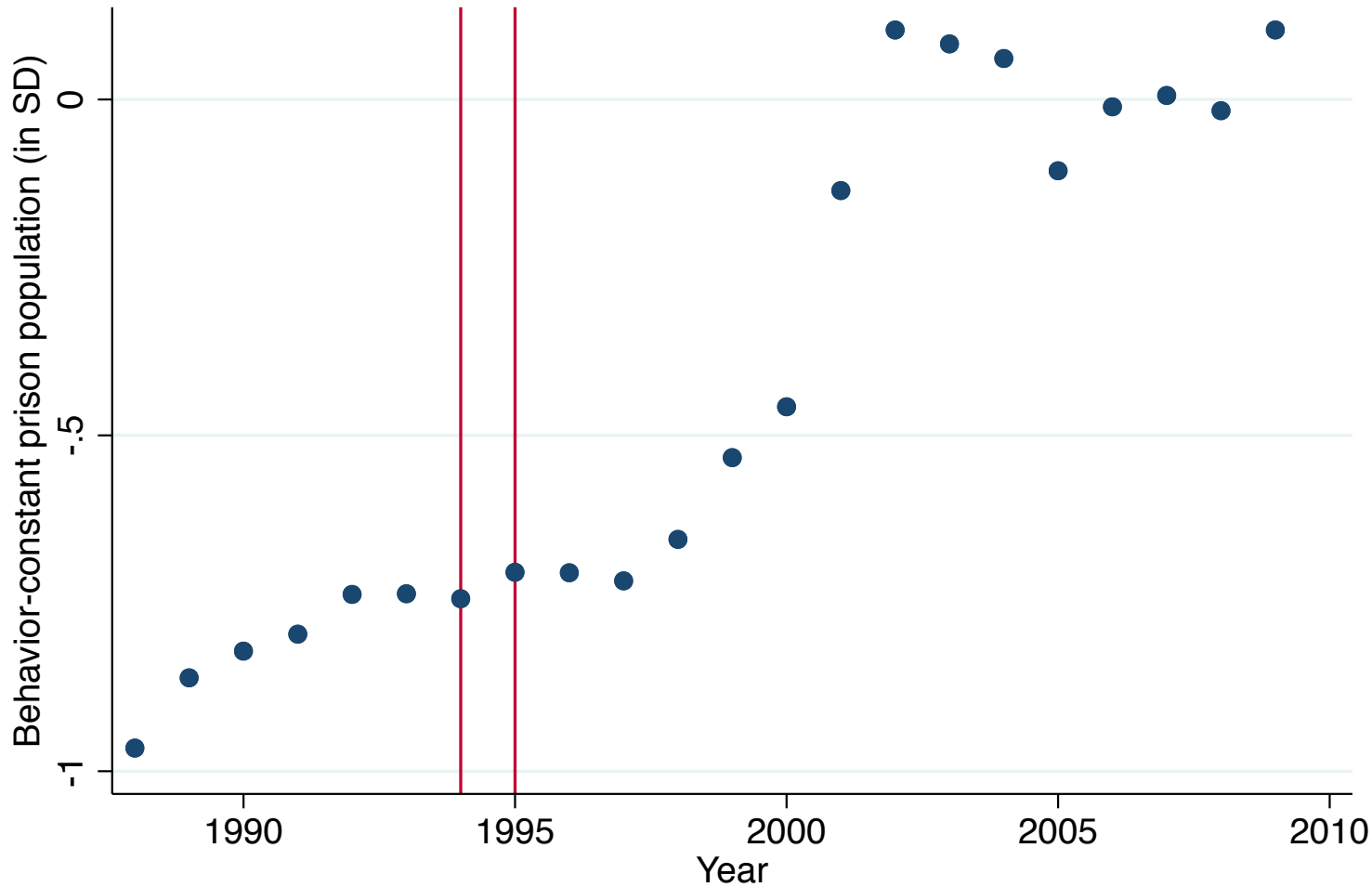
$$IV_{mt} = \frac{\sum_{c=1}^{N} C\alpha\gamma^{c}_{s(m)t} + \sum_{c=1}^{N}\sum_{j=1}^{t-1} C\alpha\gamma^{c}_{s(m)j}\mathbb{1}\{\bar{S}^{c}_{-mj} > t-j\}}{P_{mt}}$$

where

- $\gamma^{c}_{s(m)t}$: Pr(admission to prison | arrest).
- $\bar{S}^{c}_{-mt}$: Average length of sentence served.
- $C\alpha$: Average number of arrests.
- P_{mt}: Resident population.

Behavior-constant Prison Population

Arkansas



Note: Voluntary sentencing guideline and determinate sentencing in 1994, and three-strikes law in 1995.

Threats to Identification

1. Sentencing outcomes may be driven by severity of crimes. Detail
2. Large MSAs may dominate a state's policy-making. Detail
3. Harsher sentencing policies may be initiated by confounding factors. Detail
4. Sentencing policies may affect women directly or through female incarceration. Detail
5. Prison overcrowding may affect sentencing outcomes. Detail

Findings

Incarceration rate of black men

- Black women:
  - $\downarrow$ married or marrying up
  - $\uparrow$ employed
- Black children:
  - $\uparrow$ born out of wedlock
  - $\uparrow$ living in a mother-only family
  - $\downarrow$ obtaining some college education

Findings

Incarceration rate of black men (↑ 1 pp):

- Black women:
  - ↓ married (3 pp) or marrying up (2 pp);
  - ↑ employed (3 pp).
- Black children:
  - ↑ born out of wedlock (4.3 pp);
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  - ↓ obtaining some college education (4 pp).

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- Extensive-margin incarceration: more-educated women;
- Intensive-margin incarceration: less-educated women, children.

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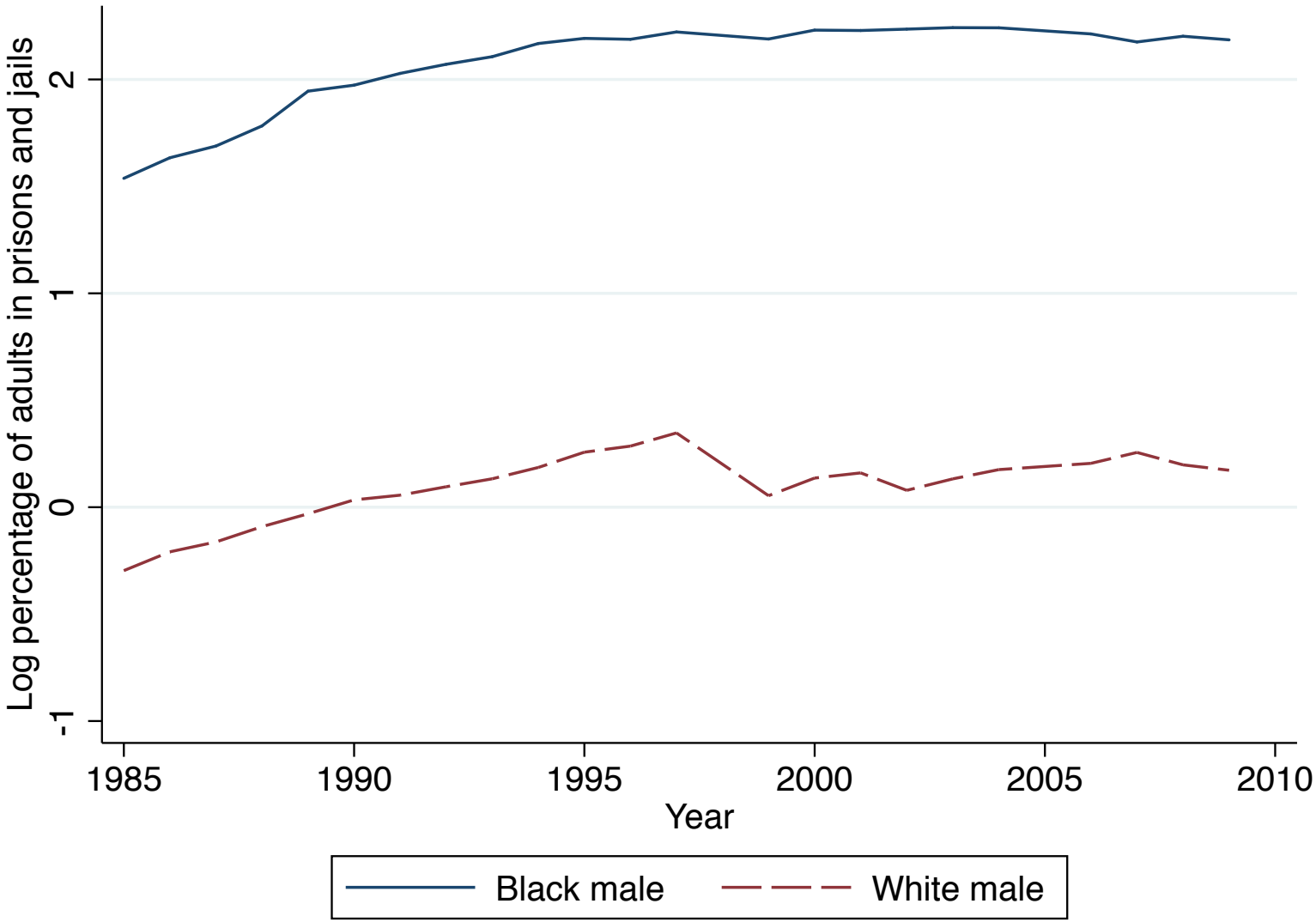
Harsher sentencing policies:

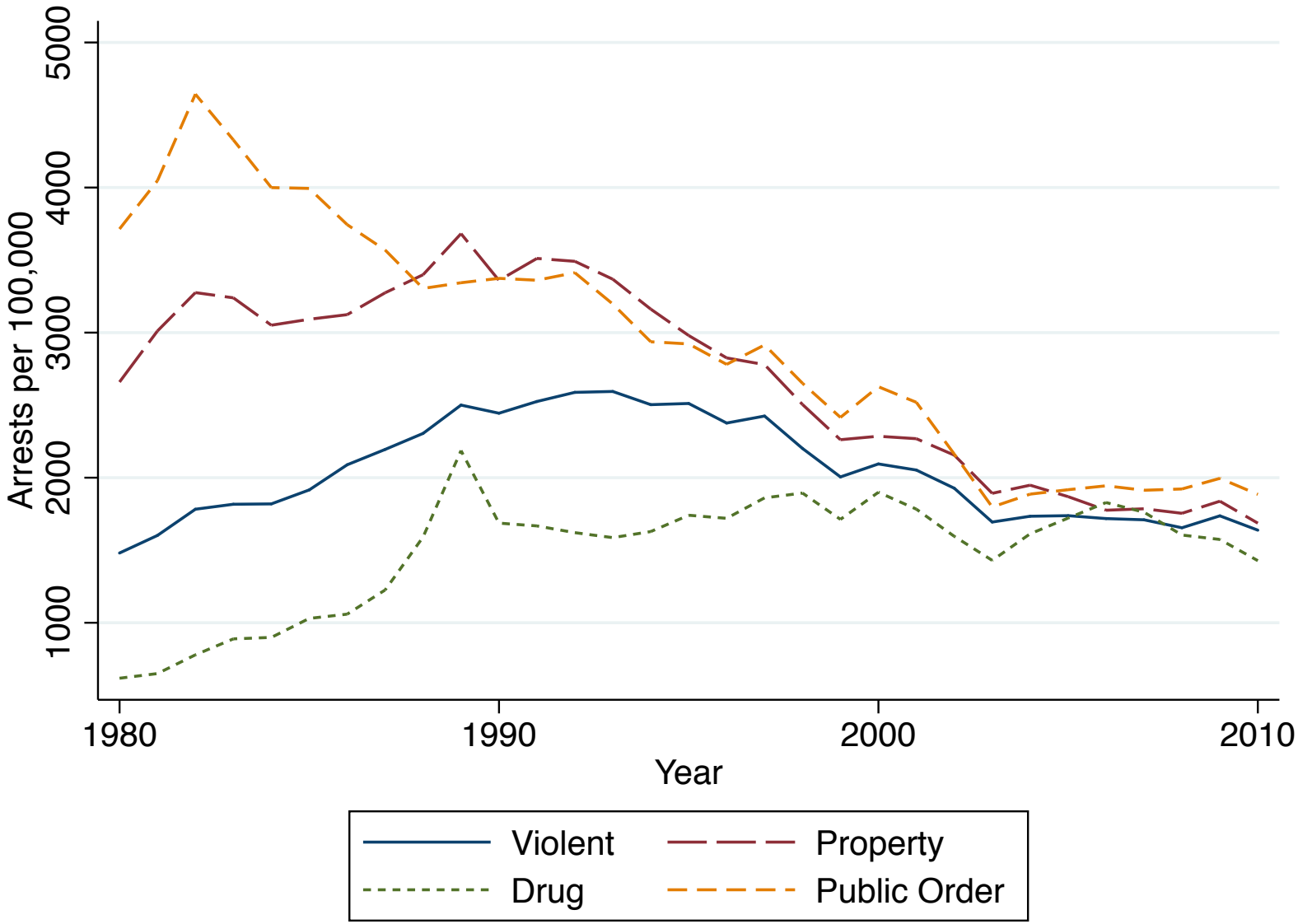
- ↑ black-white intergenerational income gap for men.

Incarceration Growth



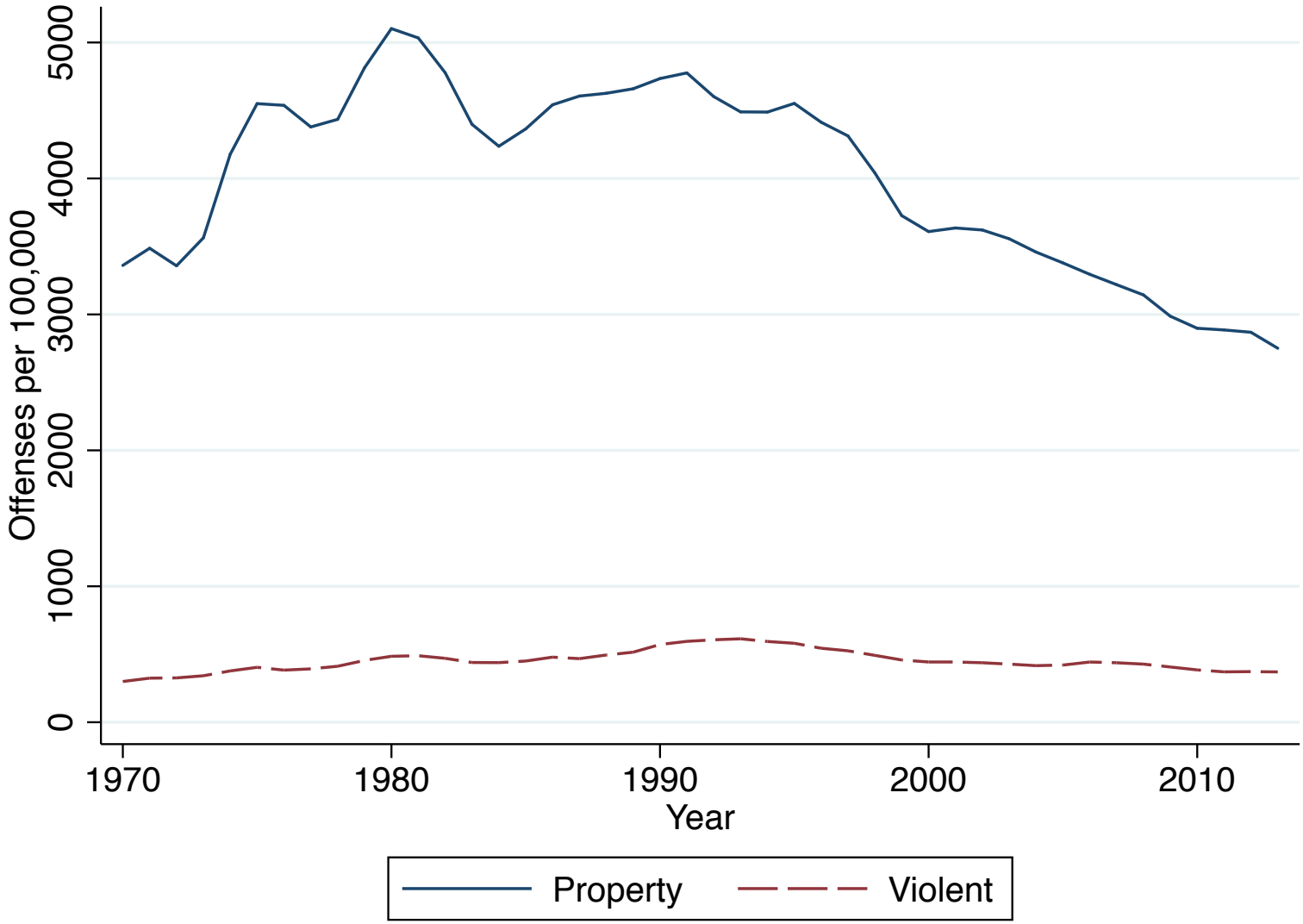
Back

Arrest Rates (Black Adults)



Back

Crime Rates (Black Adults)



Source: FBI's Uniform Crime Reports, 1970-2013.

Back

Perpetual Inventory Method

- I_{mt}^{rs}: the number of prisoners in custody of race r and sex s, sentenced from MSA m at yearend t.
- A_{mt}^{rs}: the number of persons admitted to prison.
- R_{mt}^{rs}: the number of persons released from prison.
- Change of prison population between yearend $t-1$ and t:

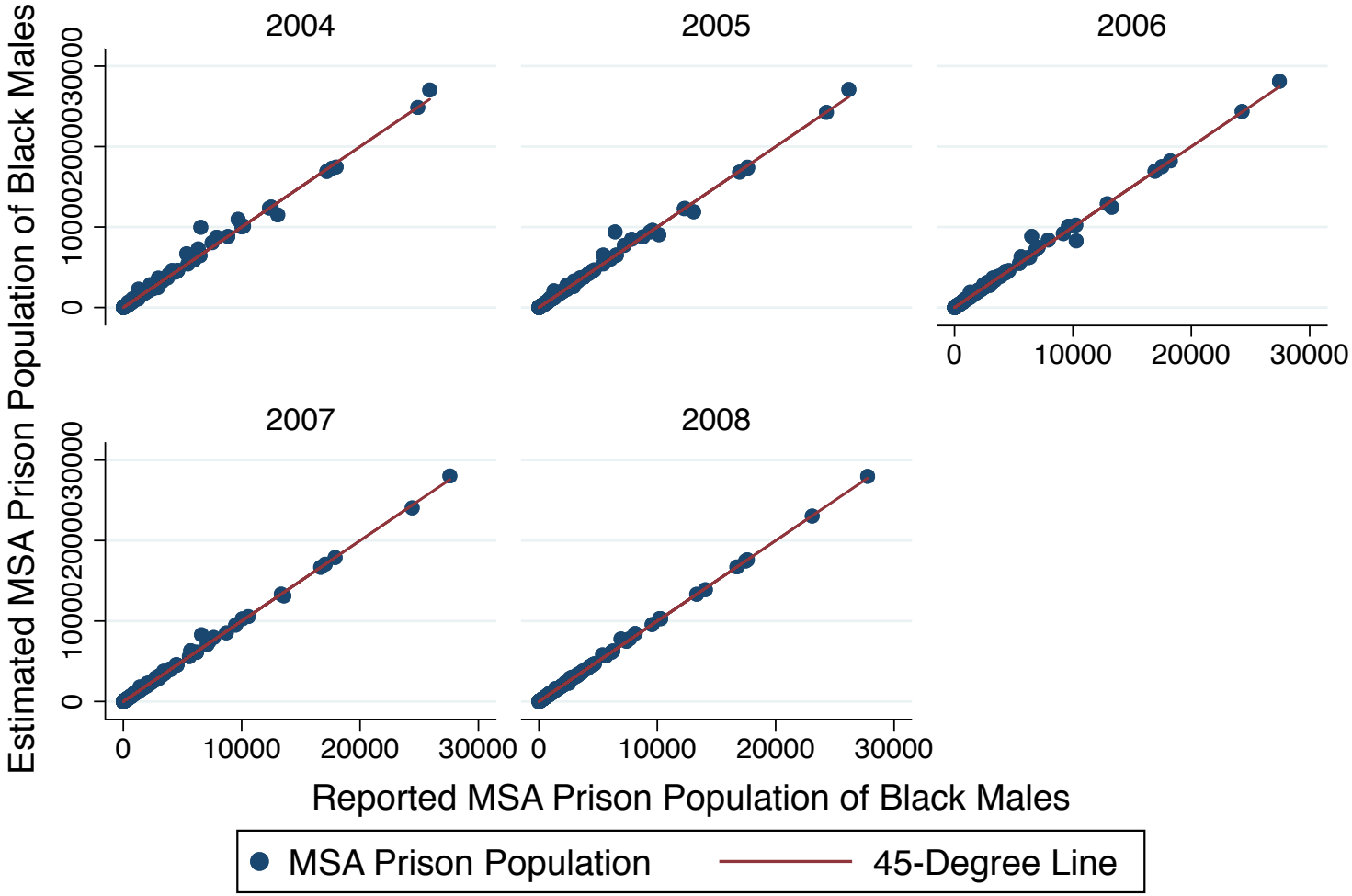
$$\Delta I_{mt}^{rs} = A_{mt}^{rs} - R_{mt}^{rs}.$$

- Back out the number of prisoners in custody before 2009:

$$\begin{aligned} I_{m,2008}^{rs} &= I_{m,2009}^{rs} - \Delta I_{m,2009}^{rs} \\ I_{m,2007}^{rs} &= I_{m,2008}^{rs} - \Delta I_{m,2008}^{rs} \\ &\cdots\cdots \\ I_{m,1983}^{rs} &= I_{m,1984}^{rs} - \Delta I_{m,1984}^{rs}. \end{aligned}$$

Back

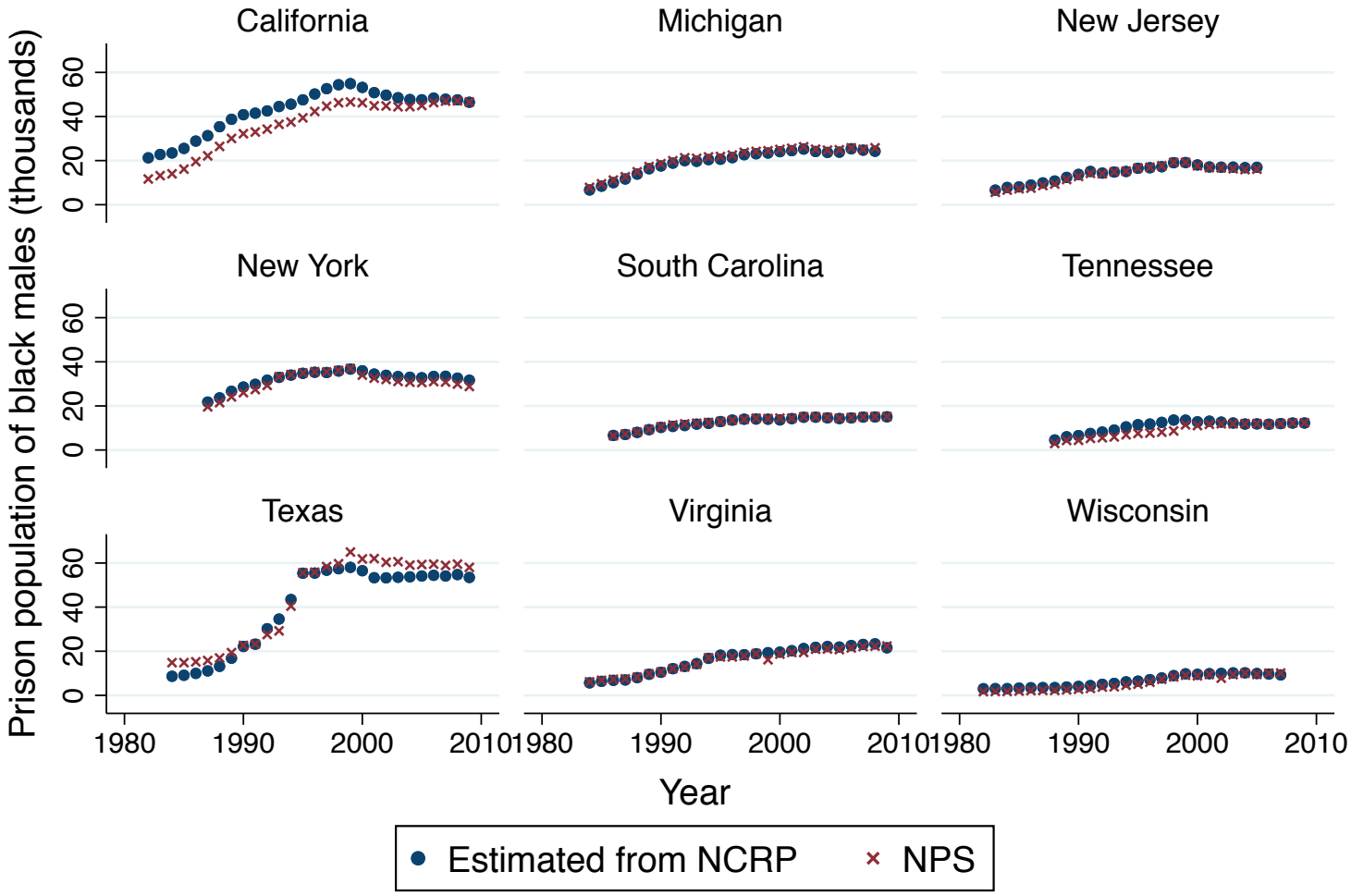
Estimated & Reported Prison Population: MSA Level



Graphs by year

Back

Estimated & Reported Prison Population: State Level



Back

correlation = 0.935

Threats to Identification

1. Sentencing outcomes may be driven by severity of crimes.
   - Leave-one-out means.
   - Sentencing outcomes have been more punitive towards almost all types of offenses. Admission / 1000 Arrests
   - Anti-Drug Abuse Act. Drug Possession
2. Large MSAs may dominate a state's policy-making.
3. Harsher sentencing policies may be initiated by confounding factors.
4. Sentencing policies may affect women directly or through female incarceration.
5. Prison overcrowding may affect sentencing outcomes.

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Threats to Identification

1. Sentencing outcomes can be driven by criminal behaviors.
2. Large MSAs may dominate a state's policy-making.
   - HHI: relative black population of MSAs within states.
3. Harsher sentencing policies may be initiated by confounding factors.
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Back

Threats to Identification

1. Sentencing outcomes can be driven by criminal behaviors.
2. Large MSAs may dominate a state's policy-making.
3. Harsher sentencing policies may be initiated by confounding factors.
   - Control for lags and leads of the IV.
   - Correlation between the IV and potential confounding factors (e.g., crime rates and proportion of the black population).
   - Control for state-specific time trends.
4. Sentencing policies may affect women directly or through female incarceration.
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2. Large MSAs may dominate a state's policy-making.
3. Harsher sentencing policies may be initiated by confounding factors.
4. Sentencing policies may affect women directly or through female incarceration.
   - Policies may not be salient to the general population.
   - Female incarceration rate is very low.
   - Other channels, other than black male incarceration, that would induce lower marriage, more out-of-wedlock children, and higher female employment at the same time?
5. Prison overcrowding can affect sentencing outcomes.

Back

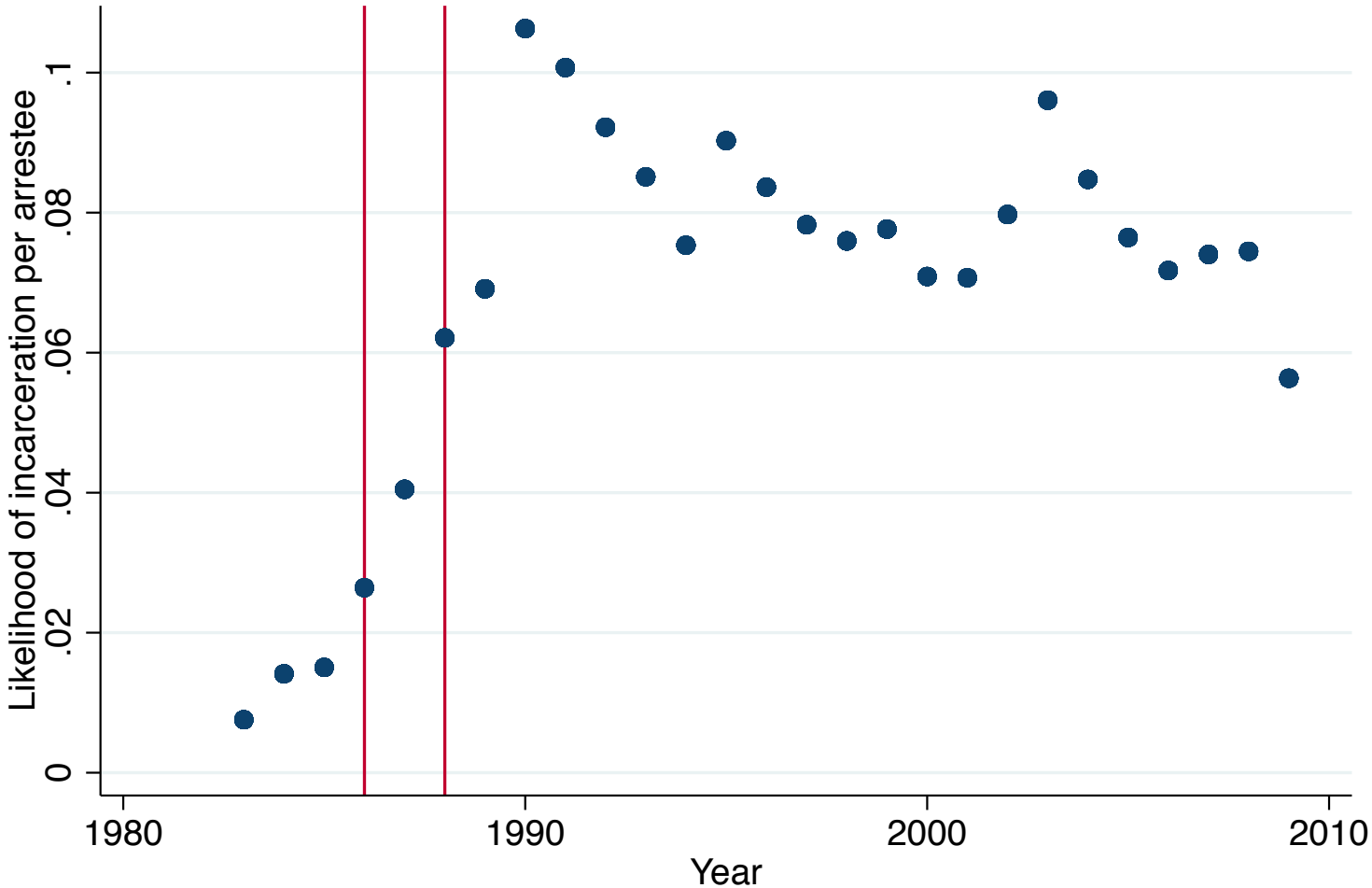
Threats to Identification

1. Sentencing outcomes can be driven by criminal behaviors.
2. Large MSAs may dominate a state's policy-making.
3. Changes in sentencing policies may be driven by confounding factors.
4. Sentencing policies may affect women directly or through female incarceration.
5. Prison overcrowding can affect sentencing outcomes.
   - Control for lags and leads of the IV.
   - Judges' discretion to impose alternatives to incarceration $\downarrow$ due to guidelines (Conaboy, 1997).
   - Prison overcrowding should not affect sentencing outcomes of a state's prisoners sent to federal prisons.

Back

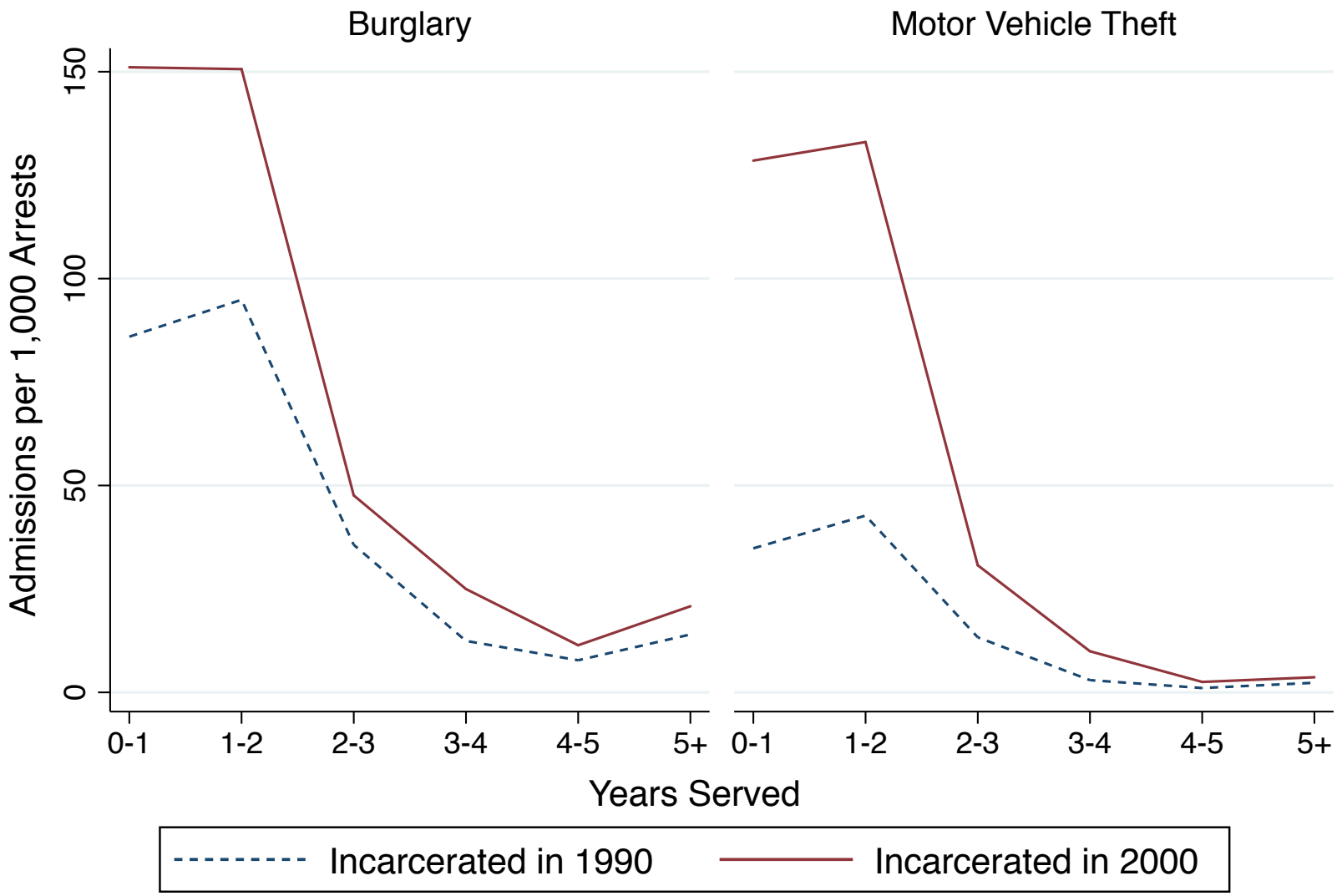
Pr(Prison Admission | Arrest)

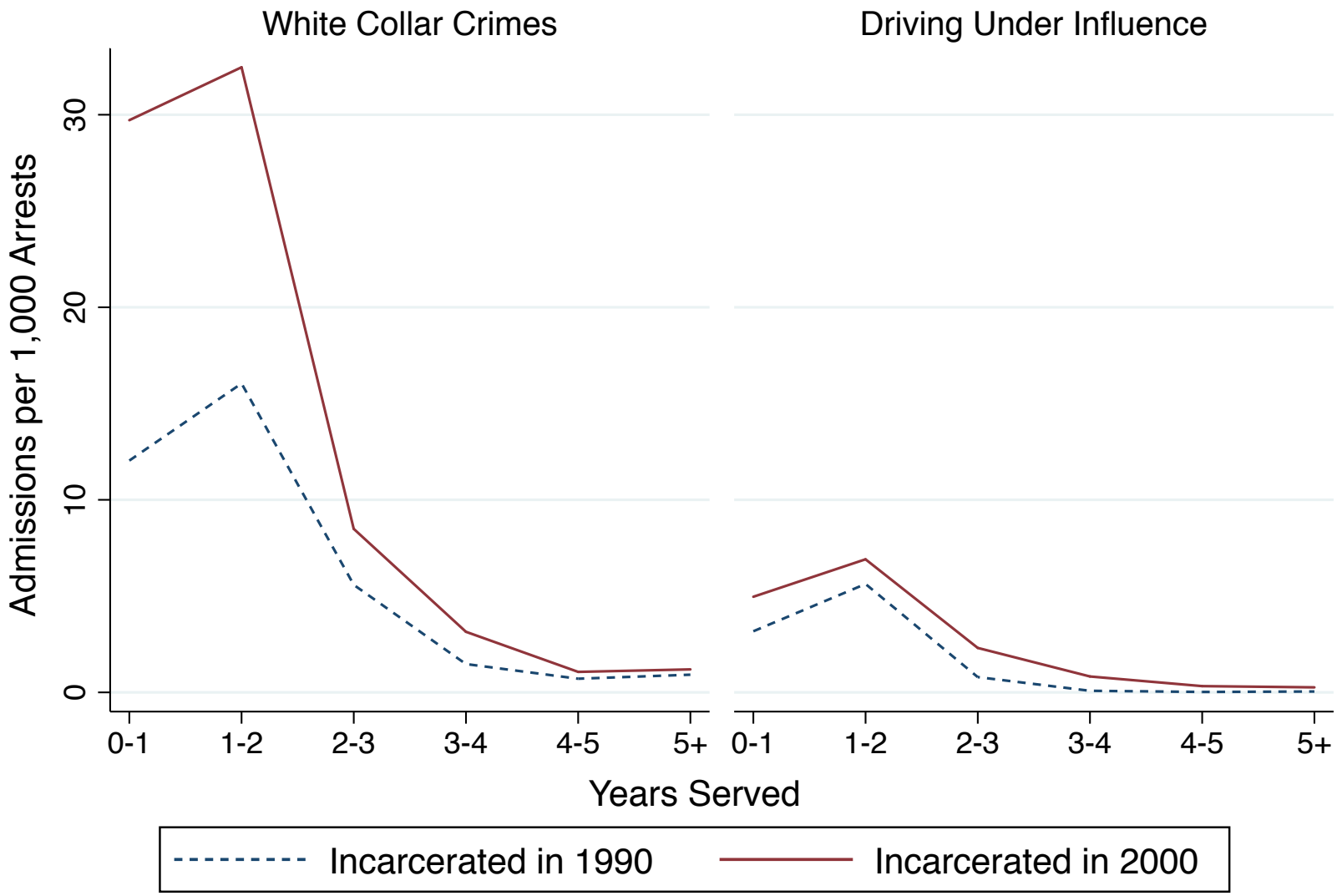
Black Offenders, Drug Possession



Note: Anti-Drug Abuse Act effective on Oct 27, 1986. Anti-Drug Abuse Amendments Act effective on Nov 18, 1988.

Back


Burglary
Motor Vehicle Theft
Admissions per 1,000 Arrests
0
50
100
150
0-1
1-2
2-3
3-4
4-5
5+
Years Served
Incarcerated in 1990
Incarcerated in 2000
Graphs by Category of Offenses


White Collar Crimes
Driving Under Influence
Admissions per 1,000 Arrests
0
10
20
30
0-1
1-2
2-3
3-4
4-5
5+
Years Served
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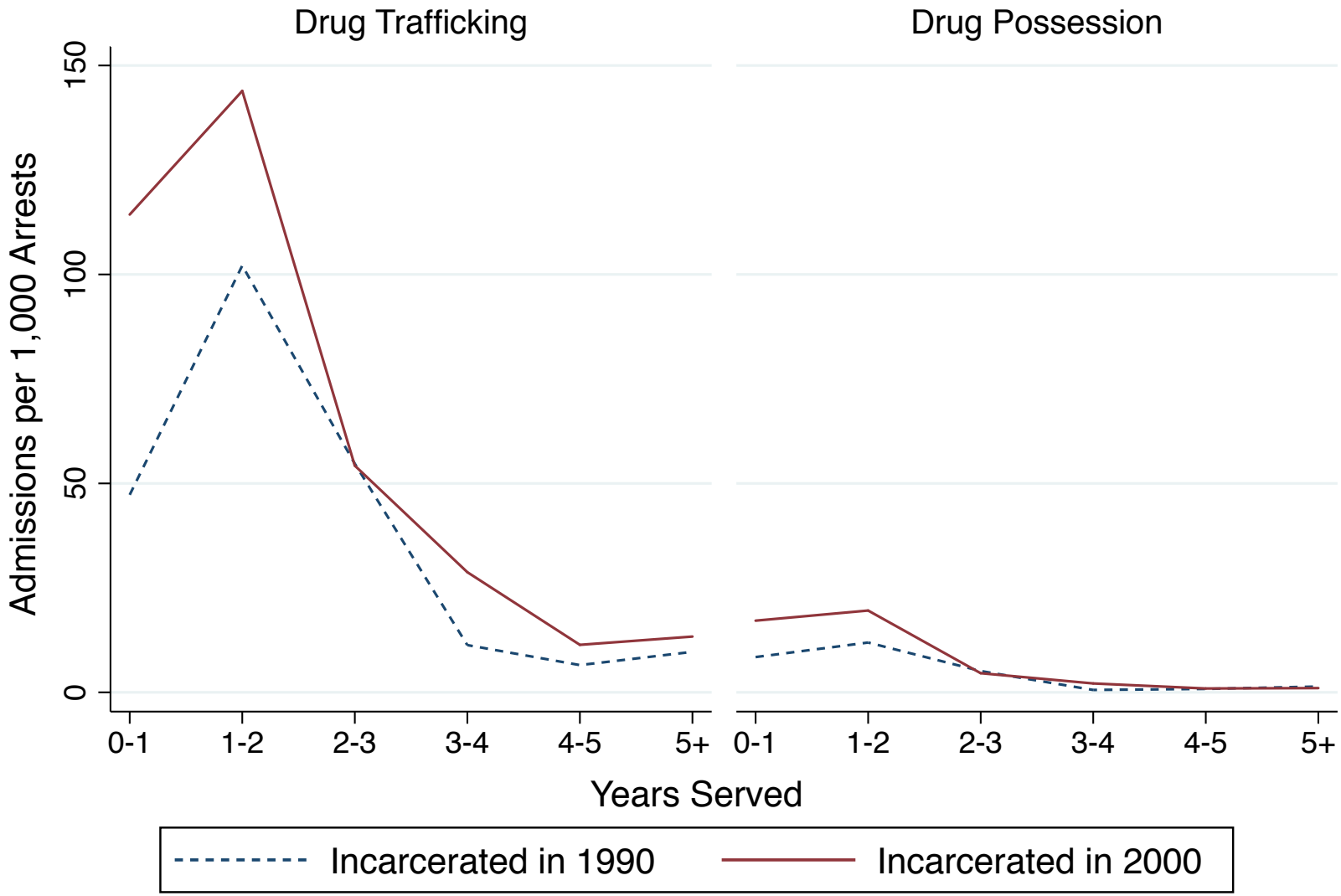

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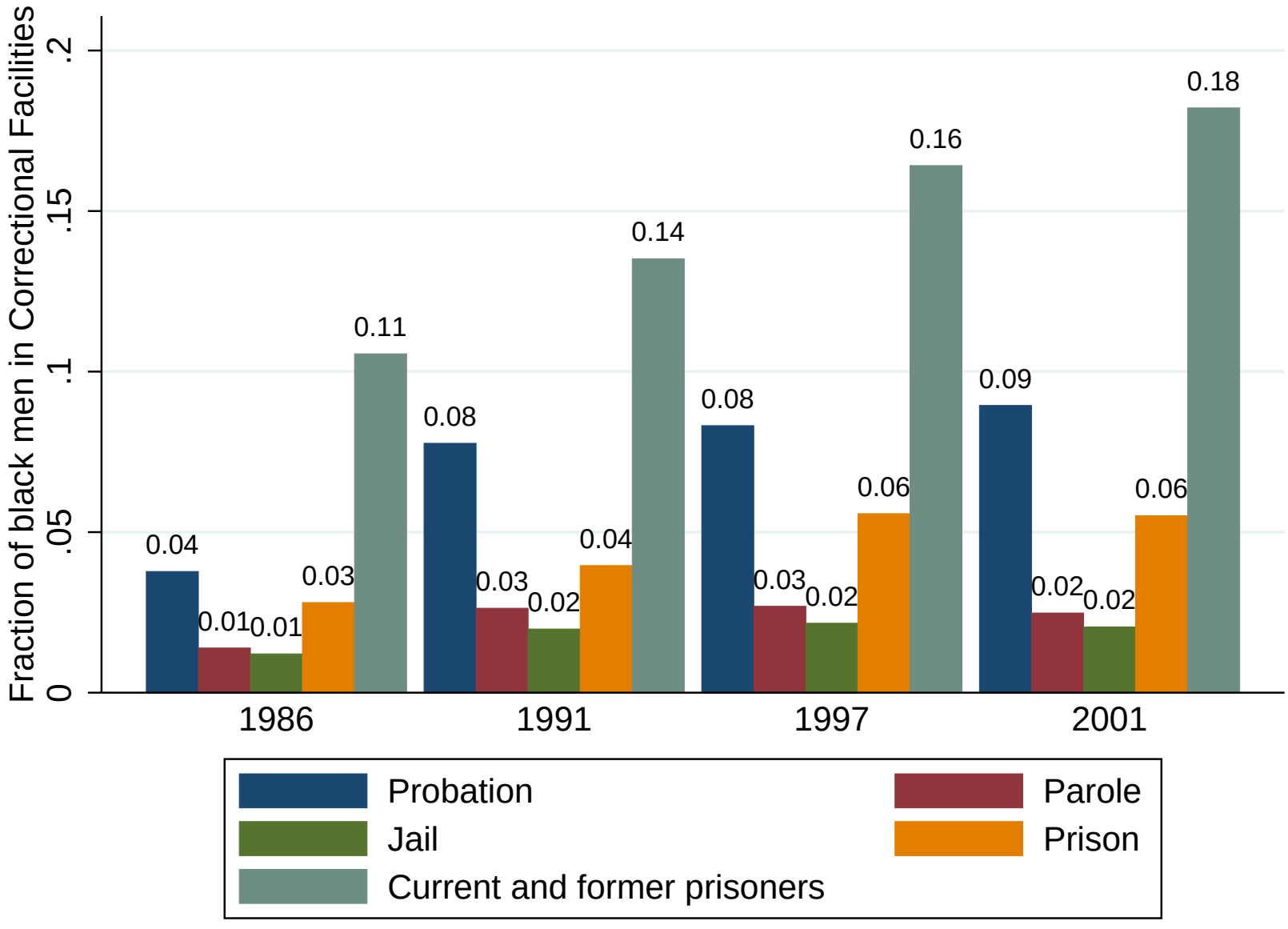

Back to Findings