

Impacts of Private Prison Contracting on Inmate Time Served and Recidivism

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Contents

- 1 Model
- 2 Empirical Strategy: The Case of Mississippi
- 3 Results
- 4 Conclusion

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- 2 Empirical Strategy: The Case of Mississippi
- 3 Results
- 4 Conclusion

Private Contracting

- Prisoners are very expensive for governments, often 000s of Dollars a year each.
- In the United States, the prison population has multiplied by six in less than 50 years.
- Cost and capacity concerns have pushed governments to contract out the operation of prison facilities.
- Multiple countries and US states keep a significant portion of prisoners in private facilities.
- Contracts are frequently per diem: The operators receive a fixed payment for every occupied bed, each day.

Model of Incarceration and Recidivism

- Individual i poses a (severity-weighted) recidivism cost on society

$$r_i(t) = R_i - \beta_i t$$

- R_i is an individual-specific risk, t is time in prison and $\beta_i > 0$ captures the decrease in recidivism risk over time incarcerated.
 - Incapacitation: While in prison, the individual cannot commit crimes, reducing the level of crimes committed.
 - Deterrence/Rehabilitation: Post-release crimes decrease as a result of punishment or rehabilitation.
- Each day in prison costs the state a fixed sum: C^{gov}

The Social Planner's Problem

- A social planner chooses a sentence length s_i that minimises a social loss function:

$$C^{gov} \cdot s_i + \int_{s_i}^{\infty} r_i(t) dt$$

- The social planner will choose a s_i^* such that the marginal cost of incarceration, C , is equal to the the prisoner's expected risk: $s_i^* = \frac{R_i - C^{gov}}{\beta_i}$
- At the optimum, the cost of incarceration is $C^{gov} \cdot s_i^*$ and the benefit is $\int_0^{s_i^*} r_i(t) dt$. An expected cost of $\int_{s_i^*}^{\infty} r_i(t) dt$ is still expected upon release.

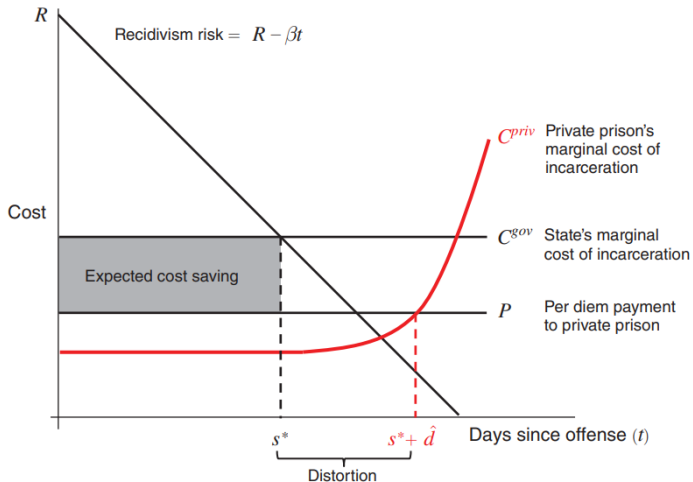
The Private Prison Operator's Problem

- Private prisons face a daily incarceration cost κ and receive a per diem of P , $\kappa < P < C^{gov}$.
- The private operator can delay release by d_i days by incurring a cost, such that:

$$C^{priv}(d_i) = \begin{cases} \kappa & d_i \leq 0 \\ \kappa + Md^2 & d_i > 0 \end{cases}$$

- Why? Paroles depend on infractions and behaviour, which is reported by the private operator.
- The private operator will maximise profits at the point where $P = C^{priv}(d_i^*)$. Because $C^{priv} = \kappa < P$ when $d_i \leq 0$, its optimum is $d_i^* > 0$.

Graphic Representation



Model Predictions

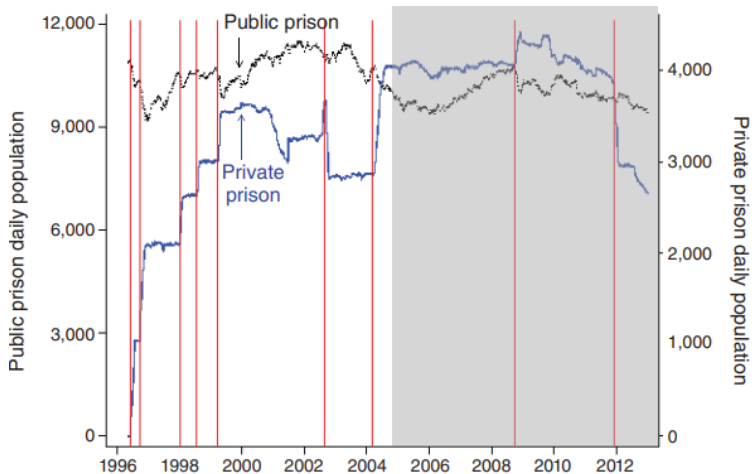
- #1: Inmates at private prisons will be incarcerated for more days.
- #2: The recidivism *level* will be lower for inmates held at private prisons.
- #3: If the mechanism for delayed release is issuing additional infractions, inmates at private prisons will have more of them on their record.

- 1 Model
- 2 Empirical Strategy: The Case of Mississippi
- 3 Results
- 4 Conclusion

Institutional Background

- The US state of Mississippi has four private prisons and three public ones. Private prisons make up about 40% of overall capacity.
- Private and public prisons are roughly subject to the same obligations, with private operators exerting significant autonomy of management decisions.
- Prisons are used only to hold inmates with sentences of over a year. After an evaluation is conducted, the state assigns inmates to private prisons first, and public ones once capacity is exhausted. Inmates can move during their sentence.
- Inmates are released early subject to conditions that include behaviour in prison.

Prison Population in Mississippi



- Data from the Mississippi Department of Corrections (MDOC) of inmates sentenced to prison from May 1996 to July 2013.
- The restricted sample has 26593 inmates between May 1996 and July 2004, to allow observation of recidivism.
- There are large differences in observable covariates between private and public prison inmates, raising identification concerns. Private prison inmates are more likely to be:
 - Black
 - Single
 - Young
 - Less educated

Econometric Specification

- Simple OLS:

$$Y_i = \beta \cdot Private_i + \theta X_i + \varepsilon_i$$

- IV: $CapacityShock_i = \sum_{j=1}^J capacityshock_{ij}$ as an instrument for private prison assignment.

$$capacityshock_{ij} \equiv \begin{cases} C_j & a_i \leq t_j - 90 \text{ and } v_j \geq t_j + 90 \\ 0 & \text{otherwise} \end{cases}$$

- The instrument quantifies capacity shocks across all private prisons that occur during incarceration, except those within 90 days of admission or release.
- Probit correction method is applied in the first stage.

Controls: X_i

- Demographic: Age, race, marital status, and education level.
- Offense: Sentence length (flexibly), type, and criminal history (number of felonies in 5 years prior).
- Classification: Custody designation, medical class, and level of care.
- Admission time trends, interacted with sentence length.
- Geographic: County of conviction.

- 1 Model
- 2 Empirical Strategy: The Case of Mississippi
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Time Served

	Days served		Fraction served	
	OLS	IV	OLS	IV
<i>Private</i>	85.25	89.63	0.062	0.048
t-stat	19.49	3.39	20.67	2.57
$\bar{Y}$	722.7		0.71	

First-stage F-stat: 887

Infractions

	Probit	OLS
<i>Private</i>	0.09	0.142
t-stat	15	14.2
$\bar{Y}$	0.24	

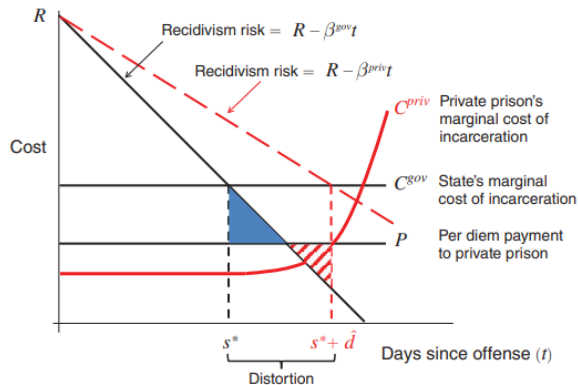
36-month Recidivism

	OLS	Probit	IV
<i>Private</i>	0.014	0.015	0.017
t-stat	2	2.14	0.45
$\bar{Y}$		0.25	

Regression Interpretation

- Time served: There is a positive causal effect of private prison assignment on incarceration time (89 extra days, or 4.8 p.p. of their sentence), exactly as the model predicts. The OLS bias is not very large.
- Infractions: Private prison assignment causes a 9% increase in the probability of (being registered as) committing an infraction. The OLS bias is large.
- Recidivism: No clear evidence of an effect.

Welfare Analysis



- The welfare effect of the distortion is ambiguous due to the lower costs of the private operators.
- This welfare analysis doesn't take into consideration the value of freedom, or potential labour market costs of incarceration.
- It is possible that $\beta_{gov} > \beta_{priv}$, which could explain why the evidence doesn't show lower recidivism for private prison inmates.

- 1 Model
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Perverse Incentives?

- Inmates in private prisons spend on average 85-90 additional days incarcerated than public prison inmates, or about 5% of their sentence.
- Additional time served can erode about half of the cost savings from efficiency gains in management.
- Private prison inmates are more likely to receive infractions - which are held against them in parole cases, and harm their chances of early release. This increase can be explained by a private incentive to exert costly monitoring.
- Private prison inmates do not exhibit different recidivism rates than public prison inmates. This may be consistent with literature showing mixed evidence on the effect of incarceration on future crime.
- Welfare effects are unclear but unlikely to be positive.