Recidivism and the Convict Labor Market: A Cross-country Comparison of Recidivism Trends in For-Profit Prisons

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Recidivism and the Convict Labor Market: A Cross-country Comparison of Recidivism Trends in For-Profit Prisons

Cover Page Footnote
Dr. Seunghae "Grace" O Research Excellence in Economics Program (Re2P) Juan Sebastian Quintero Dr. Jeffrey Borowitz
Recidivism and the Convict Labor Market

What’s the Problem?

For-profit prisons face a conflict of interests. Their goals as social rehabilitators, reducing crime and recidivism, directly interfere with their goals as profit-seekers, increasing the number of prisons and prisoners they own (Mendez, 2012). As the incarcerated population grows, the number of prisons required to house it increases. Government contracts to build and operate prisons are sold, and the prison system receives inexpensive workers. By allowing private interests to determine the living and working conditions of prisoners, who are legal property of their state, we open prisoners to two major issues: maltreatment while under prison care and poor reintegration into the civilian world after incarceration. In both instances, it is never in the private corporations’ interest to do more than what is both legally required and accurately monitored. This incentive can drive them to “cut corners, leading to unsafe conditions” for prisoners and prison staff (Russell, 2012). In the case of reintegration, for-profit prisons benefit from recidivist criminal activity. They receive both a per diem payment for housing criminals and the product of prisoners’ labor while they are incarcerated.

Additionally, the close ties between private prisons and government officials can lead to illegitimate lobbying efforts designed to increase the incarceration rate. Because “the number of prisoners in [the U.S.] has always increased to fill available prison space, even as crime rates decline,” these efforts have succeeded in the United States (Antonuccio, 2008). Regardless of legality, their efforts measurably raise incarceration rates beyond their natural level and increase revenue to private corporations who house criminals. Brickner and Diaz (2011) provide a few examples of this corruption. Pennsylvania Juvenile Court Judge Mark Ciavarella was “paid by private prison officials to sentence kids to harsher punishments in order to keep the company's
private facility filled” (Brickner & Diaz, 2011). Governor Jan Brewer was “connected with lobbyists for private prisons… Brewer came under fire after signing S. 1070, which... likely would have allowed private companies to increase detention of undocumented immigrants in the state” (Brickner & Diaz, 2011). These examples need little explanation for one to understand the political influence private prisons possess. The perpetual growth of for-profit prisons is the driving factor behind increased incarceration and re-incarceration rates as a result of the system’s financial incentive to keep prisoners behind bars.

*The Topic:*

Studying the relationship between re-incarceration rates of industrialized and post-industrial nations and whether or not they employ penal labor in for-profit prisons. We expect nations who employ prisoners’ labor in private and government facilities to re-incarcerate more of their criminals in order to increase revenue in the for-profit prison industry.

*Purpose:*

Determining the effects of profit-seeking agencies on re-incarceration rates of convicted criminals. This study focuses on re-incarceration rather than incarceration or crime rates in order to measure the effect for-profit prisons have on their prisoners, which cannot be measured from first time offenders who have not yet been imprisoned. Do prison labor and the for-profit prison industry increase criminal recidivism?

*Null and Alternative Hypotheses:*

H0: Countries that employ prison labor do not have significantly higher re-incarceration rates than countries that don’t. B1* Prison Labor = 0

H1: Countries that employ prison labor have significantly higher re-incarceration rates than countries that don’t. B1* Prison Labor > 0
Data and Methodology

The re-incarceration rate is the 3 year rate of re-imprisonment in a cohort of released prisoners in a given year and the dependent variable our model predicts. The recidivism data come from the various Ministries of Justice and Criminology Departments of the United States, United Kingdom, China, Japan, Australia, New Zealand, Iceland, Norway, Sweden, Finland, Denmark, Netherlands, Scotland, Ireland, and Spain, as well as The Laogai Research Foundation from 1994-2011. For countries with multiple studies in this time period, the average of their findings is taken for its recidivism rate. The variation in criminal recidivism over time in the 10 countries that recorded in multiple years was significantly smaller than the variation between nations themselves. The largest standard error, found in the United States, was 4.4 percentage points compared to 9.3 percentage points between all 18 nations.

Similarly, the variation in crimes of assault (2003-2011), burglary (2003-2011), drug possession and sale (2003-2008), homicide (1995-2011), robbery (2003-2011), theft (2003-2011), and sexual violence (2003-2011) were substantially smaller over their respective periods in any nation from our study than between the nations themselves (United Nations, 2013). Although the data do not represent a perfect cross-section, we can make relevant cross-country comparisons based on the assumption that both crime and recidivism, which is the crime rate among formerly convicted criminals, trends change very little over the course of a single generation of criminals.

For some countries, only reconviction data are available. Reconviction rates are necessarily higher than re-incarceration rates simply by definition. The United Nation’s “International Statistics on Justice and Crime” defines the punitivity ratio of a nation as its sentenced incarcerated persons per persons convicted of a crime by a judicial body (Harrendorf
et al., 2010). Although, as the report concedes, some nations in this study were obviously subject to underreporting issues in one or both of these rates. Because several of the nations in our study were obviously underreporting, we use the mean punitivity ratio to approximate re-incarceration from reconviction. Taken together, their mean punitivity ratio was .93 (Harrendorf et al., 2010). This does not produce any alarming results or significant changes in our recidivism data.

Prison labor is a dummy variable. Nations who employ convicted criminals in low-skilled or hard labor receive a 1; all others receive a 0. The United States, United Kingdom, China, Japan, Australia, and New Zealand all employ prison labor in for-profit prisons.

Police officers, judges, prison staff, and prosecutors per general population as well as persons prosecuted per prosecutor, persons convicted per prosecutor, and persons suspected of a crime per police officer serve as control variables for the size and productivity, but not quality, of the police, penal, and legal staff. Persons convicted per prosecutor is especially useful because “conviction is located at the end of the criminal justice process of first instance, [and thus] the differences of the legal systems are fully pronounced here,” (Harrendorf et al., 2010). Simply put, the conviction of guilty criminals is analogous to the final product of the legal process and the best indicator of the prosecutors’ productivity. However, none of these variables added predictive power to our recidivism model. This result simply indicates that, on average, law enforcement and prison staff do not substantially influence criminal recidivism within their range of sizes in these nations.

Organized criminal activity represents a special type of “professional” crime. Presumably, to join a criminal organization, a person would need skills and experience committing crimes in order to be considered an asset. Additionally, organized criminals are almost certainly likely to return to their primary source of income after release due to their
dismal prospects in the legal job market. Thus, we expect all members of a criminal organization to be recidivist criminals, but with only some being caught and successfully prosecuted. Jan Vin Dijk estimates the prevalence of organized crime in a nation based on organized crime perception, informal sector (or black market operations), unsolved homicides, high level corruption, and money laundering in “Mafia markers: assessing organized crime and its impact upon societies” (Van Dijk, 2007). Van Dijk found that the organized crime rate was uncorrelated with the general crime rate, and the organized crime index did not add predictive power to our recidivism model.

Immigrants are more exploitable in any nation because they do not possess the same rights as citizens. In the United States and United Kingdom, illegal immigrants are often detained in private prisons, and private prisons are “successfully pushing policies that would allow prison laborers to replace immigrant farm workers” (Mendez & Intern, 2012). Additionally “immigrants detained in private facilities in the U.K. are being funneled through the prison labor scheme to work for the benefit of the prison and the private employer” (Mendez & Intern, 2012). For these reasons, we may expect countries with a higher immigrant population to also be more likely to incarcerate those immigrants. We use the immigrant population as measured by the “United Nations: Trends in International Migrant Stock: The 2013 Revision” (United Nations, 2013). However, immigrant population was predictive of neither re-incarceration nor penal labor employment.

We use the Gini Index of wealth distribution as measured by the World Bank to determine wealth disparity. In nations with high wealth disparity, criminals have relatively more to gain from property crimes like theft and burglary. Within these 18 nations, there is a non-negligible correlation between Gini index and crimes of burglary ($r^2 = .53$) and theft ($r^2 = $
Given that these crimes have over 70% recidivism in the United States, and most likely elsewhere, we may expect nations with more wealth disparity to have greater general recidivism (Durose et al., 2014). However, wealth disparity added no predictive power to the recidivism model.

**Results and Explanations**

**Model:**

Re-incarceration Rate = 31.2 + 14.3*(Prison Labor Employment) + u

<table>
<thead>
<tr>
<th>Residuals</th>
<th>Min</th>
<th>1Q</th>
<th>Median</th>
<th>3Q</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-10.364</td>
<td>-5.377</td>
<td>-0.039</td>
<td>4.123</td>
<td>12.636</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Estimate</th>
<th>Std. Error</th>
<th>T Statistic</th>
<th>Pr &gt; t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>31.2</td>
<td>1.88</td>
<td>16.59</td>
<td>1.66 e-11</td>
</tr>
<tr>
<td>Prison Labor</td>
<td>14.3</td>
<td>2.82</td>
<td>5.07</td>
<td>0.000114</td>
</tr>
<tr>
<td>Residual Std. Error</td>
<td>5.946 on 16 DF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple R-Squared</td>
<td>0.6164</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R-Squared</td>
<td>0.5924</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>25.71 on 1 and 16 DF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p-value</td>
<td>0.0001136</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prison labor is the only variable that adds significant predictive power to the recidivism model.

An adjusted R-squared of .59 indicates a strong positive correlation between employing prisoners for labor and their likelihood of recidivating. This correlational result by itself cannot
prove or even indicate that for-profit prisons cause an increase criminal recidivism. Perhaps for-profit prison industries are simply more likely to arise in nations with a large population of recidivist criminals, or both of these factors are caused by another variable not included in our model. However, the results support the causal conclusion found in Bayer and Pozen’s (2005) “The Effectiveness of Juvenile Correctional Facilities: Public versus Private Management,” which found a statistically significant increase in recidivism caused by for-profit prison management.

Previous Findings on Recidivism and Prison Privatization

Bayer and Pozen’s (2005) results indicated a 5% to 8% increase in 1 year recidivism rates and 13% to 19% increase in daily hazards in for-profit prisons compared to non-profit private, county, and state prisons in a cohort of Florida juvenile offenders. The results are significant even after adjusting for socioeconomic and regional factors, prison size, and type of criminal offence.

For-profit prisons outperformed non-profit and state prisons in costs, spending $6,000 and $11,500 less per prisoner respectively. The cost reductions in for-profit prisons, however, do not account for the social and economic costs associated with recidivist criminal activity or imprisoning and housing the recidivist criminal. County prisons had both the lowest cost per prisoner and lowest recidivism rates for certain types of crime. Additionally, county and for-profit prisons tended to be larger than state and non-profit, so scale economies may explain some of the cost difference (Bayer & Pozen, 2005). Some of the cost reduction in private prisons can be accounted for by security personnel wage differences. Public guards earn a 15% wage premium over private, are more likely to be unionized, and generally perform higher quality work in terms of reducing recidivism, escapes, and inter-prison violence (Donahue, 1988).
Additionally, public prisons have more experienced guards than private because of their lower turnover rates, 16% in public compared to 53% in private (Brickner & Diaz, 2011). Private prisons are motivated by profits and not social welfare, leading to lower quality treatment and higher re-incarceration rates for their prisoners.

**Conclusion**

Our correlational results support the causal conclusion found by Bayer and Pozen. Nations who allow for-profit prisons to employ and incarcerate prisoners have higher criminal recidivism than nations who don’t. Although this correlational study cannot calculate the causal impact of prison labor on recidivism because other unobserved differences between nations may affect re-incarceration, Bayer and Pozen’s results indicate that, ceteris paribus, for-profit prisons increase recidivism in their prisoners compared to non-profit prisons. Therefore, the policy recommendations are the same. Replace for-profit prison management with state and local management and disallow future government contracts for private prisons. Private prison corporations have little vested interest in the welfare of their prisoners or the communities in which they are located compared to publicly managed facilities. They do not face the financial and social repercussions if their prisoners recidivate and benefit if that prisoner is re-incarcerated in the private prison system. State and local prisons would be much more accountable given the greater degree of government oversight and lesser degree of profit-seeking.
### Appendix A

Results for other tested variables:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate</th>
<th>Std. Error</th>
<th>T-statistic</th>
<th>Pr &gt; T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persons convicted per prosecutor</td>
<td>0.00152</td>
<td>0.0103</td>
<td>0.148</td>
<td>0.88628</td>
</tr>
<tr>
<td>Persons prosecuted per prosecutor</td>
<td>0.00359</td>
<td>0.006905</td>
<td>0.52</td>
<td>0.6156</td>
</tr>
<tr>
<td>Persons suspected of a crime per police officer</td>
<td>0.09274</td>
<td>0.14451</td>
<td>0.642</td>
<td>0.5355</td>
</tr>
<tr>
<td>Police officers per person</td>
<td>0.0239</td>
<td>0.01929</td>
<td>1.239</td>
<td>0.23905</td>
</tr>
<tr>
<td>Prosecutors per person</td>
<td>0.2368</td>
<td>0.4346</td>
<td>0.545</td>
<td>0.59576</td>
</tr>
<tr>
<td>Professional judges per person</td>
<td>-0.1815</td>
<td>0.3941</td>
<td>-0.461</td>
<td>0.65272</td>
</tr>
<tr>
<td>Prison Staff per person</td>
<td>0.02404</td>
<td>0.04414</td>
<td>0.545</td>
<td>0.59684</td>
</tr>
<tr>
<td>Composite Organized Crime Index</td>
<td>-0.0226</td>
<td>0.1154</td>
<td>-0.196</td>
<td>0.847956</td>
</tr>
<tr>
<td>Immigrants</td>
<td>0.04994</td>
<td>0.2767</td>
<td>0.18</td>
<td>0.859357</td>
</tr>
<tr>
<td>Assault</td>
<td>0.004471</td>
<td>0.003943</td>
<td>1.134</td>
<td>0.27734</td>
</tr>
<tr>
<td>Burglary</td>
<td>-0.001322</td>
<td>0.003941</td>
<td>-0.336</td>
<td>0.74259</td>
</tr>
<tr>
<td>Drug crime</td>
<td>-0.005419</td>
<td>0.005474</td>
<td>-0.99</td>
<td>0.340252</td>
</tr>
<tr>
<td>Homicide</td>
<td>1.126</td>
<td>1.319</td>
<td>0.853</td>
<td>0.406895</td>
</tr>
<tr>
<td>Robbery</td>
<td>0.002849</td>
<td>0.006304</td>
<td>0.452</td>
<td>0.6587</td>
</tr>
<tr>
<td>Sexual violence</td>
<td>-0.005841</td>
<td>0.00868</td>
<td>-0.673</td>
<td>0.51374</td>
</tr>
<tr>
<td>Theft</td>
<td>-0.0006093</td>
<td>0.0014045</td>
<td>-0.434</td>
<td>0.67153</td>
</tr>
<tr>
<td>Wealth Gini</td>
<td>-13.675</td>
<td>18.667</td>
<td>-0.733</td>
<td>0.47512</td>
</tr>
</tbody>
</table>
Appendix B

Summary of the Literature on Convict Labor:

United States of America:

At the beginning of the Reconstruction era in the American South, police began targeting freed African Americans for violations of the newly passed curfew, anti-loitering, and anti-vagrancy laws (Smith & Hattery, 2008). Because few newly freed African Americans owned land, they were easy targets for arrest. The African American crime rate skyrocketed, surpassing the crime rates of Caucasian Americans, and remains disproportionately high today (Smith & Hattery, 2008). The convict lease system took off with this new, large pool of labor. Convict labor was rented out to many of the slave-driven industries of the pre-Civil War era like plantation farming, coal mining, and textile production (Smith & Hattery, 2008). More recently, their labor has been rented out to multinational corporations, such Microsoft to Victoria’s Secret, for a myriad of tasks such as data entry, factory production, and telemarketing (Smith & Hattery, 2008). Prison labor was explicitly made legal by the 13th amendment to the U.S. Constitution which outlaws slavery “except as a punishment for crime.” For these reasons, many consider the convict labor system to be a continuation of slavery.

The Federal Prison Industries (UNICOR) was established under President Franklin D Roosevelt in 1934. UNICOR runs and regulates 109 factories housing more than 22,000 federal prisoners. They generated $765 million in sales in 2008 and are projected to receive $2.7 million in government funding in fiscal year 2014. UNICOR’s sales are restricted to federal agencies, meaning that they cannot compete with private contractors on any private contracts. Federal agencies, except for the Department of Defense, are required to purchase goods through UNICOR when available unless UNICOR authorizes the sale from a private contractor (James,
Inmates employed by FPI receive wages from $0.23/hour to $1.15/hour (James, 2007). 50% of their wages may be garnished to pay for various legal and penal fees, such as court-ordered fines and child support payments (James, 2007).

In 2011, there were 176,228 prisoners housed in federal facilities and 29,776 in private for a total of 206,004 (Department of Justice, 2011). All of these prisoners were used for labor if they were physically able. By law, they must work or be dealt punishment (James, 2011).

*People’s Republic of China:*

China’s reported recidivism rates are extremely low (Deng et al., 1998). While not a single nation reported a recidivism rate below 20% for any year, China reported near single digit re-incarceration rates in multiple years (Tongzhi, 2008). These rates are not only remarkable; they are highly suspicious. The controversial Laogai and their questionable methods of incarcerating individuals may explain China’s reports of low recidivism. The Laogai or “reform through labor” is a system of labor camps located throughout China which has detained approximately 50 million prisoners in the past 50 years, many of them political dissidents, with an estimated 10 million prisoners being held in 1993 (Wu, 1993). Prisoners are frequently worked for up to 16 hours a day in production and public works projects and medically and nutritionally neglected (Wu, 1995). Additionally, some prisoners’ organs are sold to important Chinese politicians and foreign buyers (Wu, 1995). According to the The Laogai Research Foundation, there are an estimated 3,000 Laogai camps (Wu, 1993). They have identified 1,100 Laogai camps since LRF’s founding 21 years ago (Wu, 1996). The Laogai has come under fire both internally and internationally for its many human rights violations and is by far the most pervasive penal labor system in this study. Due to the secretive nature of these camps, finding data on the Laogai is difficult.
Harry Wu, a former Laogai prisoner of 19 years and the founder of the The Laogai Research Foundation, is one of the few sources of information. Wu and the LRF, who have appeared before Congress to testify on the Laogai, describe in great detail and with video evidence the harsh conditions in the camps, from 16 hour work days to human organs marketing and murder (Wu, 1995). Because of the difficulties in acquiring complete data, all data presented on the Laogai are approximations which most likely understate the true total, according to Wu.

Laojiao or “re-education through labor” is a separate faction of the Laogai. It is generally used as punishment for petty criminals, unemployed vagrants, and political dissidents (Wu 1993). Unlike the Laogai, Laojiao isn’t handled as a criminal offense. Persons need not pass through judicial procedures to be sent to a Laojiao and are not counted in the prison population, crime rate, or recidivism rate (Wu, 1993). Instead, police discretion determines who is sent to Laojiao. The sentences to Laojiao are shorter than those of Laogai, usually lasting 3 years or less with the possibility of having a fourth year added (The Laogai Research Foundation, 2006). Currently, there are 346 identified Laojiao camps, all of which employ penal labor similar to other Laogai camps (The Laogai Research Foundation, 2006).

Jiuye or “forced job placement” extends a prisoner’s term beyond its court appointed limit. It is a prison sentence of indefinite length designed to keep Laogai prisoners in servitude at “30-60% the wage of a general worker” (Wu, 1993). Although this sentence does not require people to commit another crime, it re-imprisons convicts in the Laogai and should be counted towards the re-incarceration rate of China. There are presently “16-20 million inmates, of whom 4.6 million are arrested and sentenced criminals, 3 to 5 million are labor re-education prisoners, and 8 to 10 million are Forced Job Placement personnel” (Wu & Slingerland, 1992). Taking the most conservative estimates, 8 million of the 16 million inmates received a sentence to Jiuye.
Because a Jiuye sentence is a subsequent prison sentence, despite the fact that prisoners need not commit another crime to receive it, we must consider the population of prisoners who receive Jiuye sentences as re-incarcerated, especially if we want to measure the increase in re-incarceration caused by China’s Laogai. We exclude China’s own reported rates because they fail to capture this population. Taking the most conservative estimates of each of these populations, we find 8 million of the 16 million prisoners received Jiuye sentences, or 50%. This will serve as China’s current re-incarceration rate.

*United Kingdom:*

The Ministry of Justice supports the movement towards 40 hour work week for prisoners. Private prison companies, most notably G4S, control about 12% of the prison population in the UK. G4S employs prisoners in industries like metal-working and digital marketing and is the second-largest commercial employer in the world after Walmart. According their website they have spent “over a decade... working with a number of employers at our prisons, such as Summit Media at HMP Wolds and Norpro at HMP Altcourse, who have been able to benefit commercially from secure, modern premises, a committed workforce and low overheads” *(Working prisons: Working people, 2011).* Although prisoners’ wages are never mentioned, G4S’s claim “work which used to be produced India has now been brought back to the UK” indicates they spend very little on labor costs *(Working prisons: Working people, 2011).* They have had both successes and failures with ingratiating themselves with businesses. According to their own study, “over two fifths of managers (43%) said their company would never be prepared to work within or with a prison” *(Working prisons: Working people, 2011).*

*Japan:*

In Japan, the Private Finance Initiative (PFI) handles convict laborers. Prisoners typically
work 8 hours a day, Monday-Friday (J@pan Inc., 2002). They receive 4.5 Yen/hour (~$0.05/hour) as a starting wage and can make up to 34.7 Yen/hour (~$0.34/hour). The system seems to have gained acceptance among the Japanese government mainstream society as corrective rather than exploitive (Johnson, 1996). Their bicameral legislature substantially increased the number of industries PFI businesses were allowed to operate in through the Amendment to the Law of Private Finance Initiative (Banking and Finance, 2011). Furthermore, the Japanese government annually announces their PFI projects, allowing private businesses to adapt their behavior (Banking and Finance, 2011).

New Zealand:

Prime Minister John Key fully supports expanding the number of working prisons in New Zealand and requiring unpaid 40 hour work weeks for prisoners, citing reducing reoffending as his goal (Chris, 2010). Currently, New Zealand has only 3 working prisons, Rolleston, Auckland Women’s, and Tongariro/Rangipo Prisons that employ 1400 prisoners for labor. The Corrections Contract Management of Prisons Act 2009 allows prisoners to be used “for the public good” in cooperation with private enterprises (Davison, 2013). Previously, it was only the state which had the power to use prisoners for labor (Davison, 2013).

Australia:

The Department of Correctional Services in South Australia employs prisoners in textile work and production, welding and fabrication, powder coating, and furniture manufacture among other industries (Department for Correctional Services, 2010). Alice Springs Correctional Center recently began using inmate labor in salt mines. Prisoners earn $60 a week after deductions (Department for Correctional Services 2010).
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