THESIS

STATE CORRECTIONAL SPENDING AND THE PRIVATE PRISON INDUSTRY

Submitted by

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ABSTRACT

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The efficacy of using private contractors to house prisoners has been debated since the first private prison was built in the 1980's. Most of the previous research on private prison costs has focused on case study analysis and has failed to reach a conclusive decision on whether any savings accrue from contracting with private companies. This paper contributes to economic research by examining data over seventeen years across 50 states on their correctional expenditures and the percent of prisoners they have in private prisons to determine whether private prisons are actually cost saving for states to use. To do this, I make use of a fixed effects econometric model to examine if there are any savings associated with contracting out prison services. This paper also examines the effects of other factors have on correctional expenditures and with prison privatization. The results suggest that privatization has little effect on correctional expenditures and other factors impact correctional expenditures in a statistically significant degree such as poverty and the government ideology of a state.

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I.   Introduction

Prisons are a constant in modern society. They promise to safeguard law and order by isolating offenders for extended periods of time, but this promise relies on effective and efficient management. The history of prisons in the United States contains numerous instances of success, where habitual offenders are kept off the streets, but also instances of failure, like escape and recidivism. Prisons have also failed periodically to protect the rights of inmates by preventing or punishing cases of inmate abuse (Perkinson 2010).

As prisons have evolved in the U.S. their goals have changed. From their inception they were places to hold deviant individuals for punishment but that changed to creating institutions where the incarcerated would become rehabilitated (Perkinson 2010). The construction of prison infrastructure and employing adequate staff to overlook the rehabilitation of individuals is expensive, costing taxpayers roughly $39 billion in 2011 (Delany and Henrichson 2012). In the last half century, prison populations have exploded in the United States (Perkinson 2010).

Rising costs and rising prison population together have meant that the country has struggled to finance and build prisons to house the rising number of incarcerated individuals. Consequently, states have looked to contract with private companies to hold the expanding prison population. At first, contracting out prison operations was used out of necessity as the prisons in many states were at or over capacity (McDonald et al. 1998). The companies that acquired contracts also promised to bring the same services that public prisons brought but at cheaper costs and with superior quality (Perrone and Prat 2003).

Previous research on private prisons has looked at case study evidence to evaluate if they save states money (Archambeault and Deis 1997; OPPAGA 2000; McDonald and Carlson 2005;

Nelson 2005). Some states require that their contractors provide cost savings at a target percentage, however these targets are not always met. In Nelson (1998) for example, two private prisons in Florida were compared to a public prison. The study of the three prisons observed that the per diem cost of housing individuals in private prisons was marginally cheaper than their public counterpart. The private prison managers were required to demonstrate that their prison would be 7% cheaper to run compared to public prisons before being awarded the contract. There was no evidence of the private prisons meeting the required cost saving which was outlined in the contract awarded to the two companies in Florida.

Other studies have also used case studies to determine if private prisons offer any savings to a state. Kish and Lipton (2013) examine several studies that all used case study analysis to attempt to reach a conclusion on the costs of privatizing prisons. One study in their paper provides evidence over a five-year period of three similar prisons to conclude on the savings experienced by states. The results of the study suggested that the privately-operated prison was able to achieve lower per diem costs for their prisoners compared to the public equivalent (McDonald and Carlson 2005). In Mumford et al. (2016), private prisons in Tennessee and Louisiana were observed to be cheaper to run initially but as time progressed, they became equal or more expensive to run than public equivalents due in part to the monopolistic nature of the prison market.

The analysis in this paper contributes to the subject of private prisons by looking at panel data from a wider range of states and time. This paper looks at panel data across seventeen years to see if using private prisons are actually cost saving for state correctional departments. The case study approach to prison evaluation is inadequate for analyzing the impacts of private prisons broadly because it does not account for the overall effect that privatization has on states.

States may decide to cut back on expenditure spending because of contracting or private prisons may require that state officials are always present in private prisons to ensure contractual obligations are upheld (McDonald et al. 1998). Also, the operation of prisons can fluctuate over time as the population within prisons change.

By looking at data from seventeen years, I provide a more complete analysis of the true costs of using private prisons in this thesis. In theory, as states delegate the operation of prisons to private companies, they will no longer have to spend to maintain the public prisons they replace. This result depends on the assumptions of efficiency gains associated with changes in private prison populations. In turn, the correctional department should have lower costs reflected in their expenditure records. The amount of private companies in the prison business also adds variation to the privatization question because companies will offer their services at different prices to states. Effectively then, this becomes a question involving both supply and demand.

Case studies have an accounting of one or two prisons run by two different private companies at a time (McDonald and Carlson 2005; Nelson 2005). With data across fifty states, providing statistical variation both over space and time, the amount and rates required to do business with private companies will aid in concluding accurately any cost savings to the state from privatization. In this paper, I start with the empirically testable hypothesis that the change in the proportion of prisoners held in private facilities should reflect a corresponding change in state correctional expenditures. If private contractors save the state money, then there will be a decrease in state correctional expenditures as more prisons are operated by private companies.

In section II, I give a brief history of the private prison industry; how it came to be and what has happened since the first contract was awarded in the 1980's. In this section, I also

introduce some of the controversies surrounding private prisons and document changes to the spatial distribution of private prisons and their costs over time in the U.S. In section III, I review previous literature surrounding private prisons. Literature concerning privatization has attempted to ascertain the costs of using private prisons and if they are equivalent to public prisons in quality or at rehabilitating individuals. In section IV, I present the empirical methodology used in this analysis to study the cost effects of increasing the percent of prisoners held in private facilities. In section V, I present the sources of the data used in this study. In section VI, I offer the results that were obtained from the econometric models that were used to study correctional expenditures for both per capita and per prisoner for states. In section VII, I conclude with some comments on the study and the results that were presented.

II. Background and Motivation

The prison population in America experienced rapid growth in the 1980's due in part to changes made by the Reagan administration and their hard stance on crime (Perkinson 2010). During the mid-eighties, Congress changed indeterminate sentencing, which allowed prisoners the chance of early release contingent on their prison record and introduced fixed penalties. The federal government during that decade also encouraged parole curtailments and privatization amongst states (Perkinson 2010). The U.S. prison population began to grow rapidly because of these changes, and other economic, political, judicial, and population changes. In 1980 there were roughly 350,000 individuals incarcerated but by 1990 that number had increased to almost 800,000 and in 2015 the U.S. prison population was counted at 1,526,800 individuals (Carson 2016).

History of Private Prisons in America

As a direct result of the increase in prisoners every state in the nation, except for Kansas, was facing over-crowded prisons (Perkinson 2010). To alleviate issues caused by the over-crowding that was happening, state governments turned to private corporations to house inmates. The main reason that states sought private corporations to house inmates was to ensure that their prisons were not at or over capacity (McDonald et al. 1998). Private prisons were also a way to quickly build the infrastructure needed to house the ever-growing prisoner population. It was estimated that state governments would take five years or more to construct a prison while private contractors said they could build a prison in one tenth that time (Logan and Rausch 1985).

The first private company, Corrections Corporation of America, to be awarded a contract for prison operation opened its prison in 1984 in Tennessee (Mattera et al. 2001). Since the first contract given to a private company to hold prisoners, the population of prisoners held in private facilities has increased significantly. In 1990 there were 7,771 individuals held in private facilities (ACLU 2011). By 2015 the number of prisoners had increased dramatically and there were 118,569 people incarcerated in private facilities.

Private prisons were an ideal solution for states to combat their rapidly growing prison population because their construction and use did not have to be approved by the taxpaying public. Politicians could satisfy public fears of crime sweeping the nation without having to rely on increased taxation to construct prisons to house the newly convicted individuals. In the 1980's, voters in New York voted against using bonds to construct new prisons (Logan and Rausch 1985). Many states made use of bonds that did not need voter approval, called lease-revenue bonds, to help finance private prisons (Mattera et al. 2001).

By 1989, after the first contract with CCA, the number of private prisons in America increased to 44, managed by several private companies. By 1997, CCA and Wackenhut (later called GEO group) owned 61 of the 91 reported private facilities in the U.S. There was a total of fifteen different management firms that operated these facilities (McDonald et al. 1998). In the years following 1998, there has been major consolidation in the private prison industry and the larger corporations have either underbid or acquired their competitors. Over a decade later, CCA and GEO still hold more than half of the contracts in the United States to operate private prisons (Mason 2012). In 2017 there were only six companies that operated private facilities (Prison Legal News 2017). This decreases competition between private companies eligible to operate prisons and limits the options that states have for picking a private contractor and may have led

to increased private profits and decreased state savings over time as the three largest private

companies account for 96% of the total number of private prison beds (Mumford et al. 2016).

Controversy Surrounding Private Prisons

There is no shortage of controversy surrounding the private prison industry. Although

they offered a quick solution to state governments who were burdened with bulging prisons,

private prisons have been the subject to numerous complaints by the public and prisoners held

within their walls. In one example, private prisons have been criticized by people who live in

Hawaii, Nevada, and California because these states have contracted with CoreCivic in Arizona

to hold their prisoners (Larson 2018). The use of private prisons in faraway states separates

prisoners from their families and friends and makes it costly for them to be visited. This is one

example of how private facilities have failed to live up to expectations.

There have been many instances of abuse and inefficient management within private

prisons. An individual incarcerated in a Mississippi private prison was assaulted by another

prisoner and instead of helping the victim the guards ran away (Williams 2018). In 2013,

Kentucky state officials decided to abandon the use of private prisons following several sexual

abuse allegations and a major riot that occurred at one of the facilities (Watkins 2017).

Following such instances of abuse, state officials have expressed their distrust of using

private prisons (Sheets 2017). There have been three states to make it illegal to use private

prisons, these are Iowa, Illinois, and New York (Lipton 2017). In 2008, a prison in Idaho, that is

operated by the CCA, was found to have four times the amount of prisoner-on-prisoner assaults

than the combined count that had occurred at seven other Idaho prisons. In response to these

findings, Idaho required CCA to make major improvements to the prison conditions (ACLU

2011). Utah and Michigan have stopped using private prisons because of issues dealing with security (Williams 2018). The data from the Bureau of Justice Statistics shows that Michigan stopped using private prisons in 2004 and Utah stopped their use in 2000. Figures 1 and 2 visually illustrate the usage of private prisons by state in 1999 and 2015.

Spatial Distribution of Private Prisons

In order to examine the changing spatial distribution of private prisons relative to public ones over time in the U.S., I present a number of illustrative figures. For figures 1 and 2, the darker the shade of blue a state is, the higher percent of all prisoners there are in private prisons. Looking at Kentucky for example, in 1999 you can see that there is a slight shade of blue which represents the 11% of prisoners that were held in private prisons. Following the scandals in 2013, the state removed all prisoners from private prisons. Looking at figure 2, Kentucky now has no coloring because of its discontinued use of private prisons. In both figures 1 and 2, New Mexico has the highest percent of prisoners in private prisons. Over the period of time reviewed in this study, from 1999 to 2015, some states have discontinued their use of private prisons while others
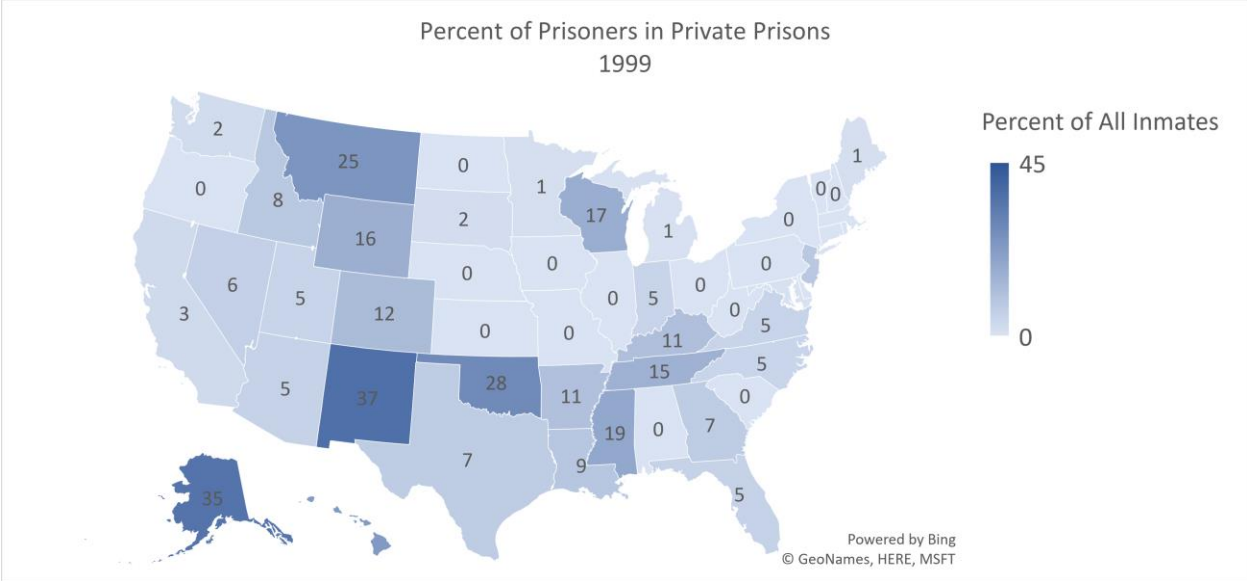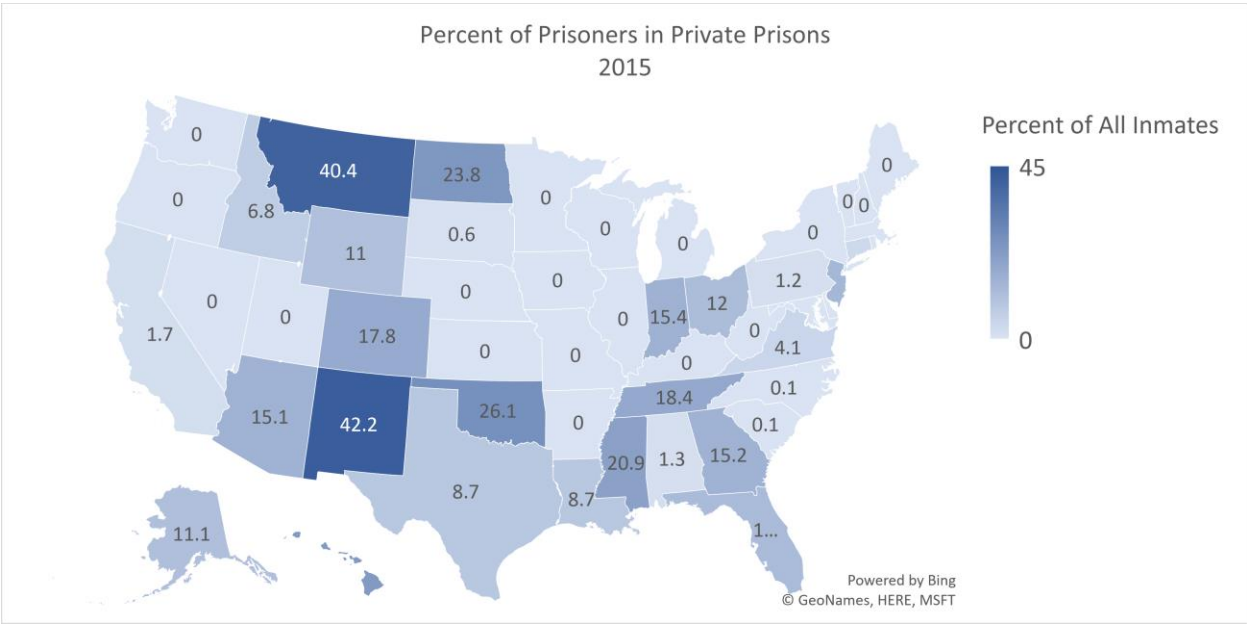
Figure 1

Figure 2

have increased their reliance on them. The zeros that appear in the figures are true zeros and not the result of rounding. The change that Utah and Michagan went through is apparent when looking at the two figures.

Proponents of privatization suggest that market forces in private markets create incentives for cost-efficiency (Sigler 2010). A cursory look at Figures 3 and 4 show that the per capita correctional expenditures of states in 1999 and 2015 do not decrease with the number of prisoners they have in private prisons. Figure 3 is corrected for inflation and are shown in 2015 dollars. Although, the decision to use private prisons is based on many things, other than correctional expenditures, such as the need to increase the capacity of prisons within a state, it has been stated as a significant motivation for their use (Kim and Price 2014).

As a state spends more money per capita on correctional expenditures, their color will be a darker shade of blue on the figures below. If private prisons were actually cost saving, then the figures would have a visual representation between states that spend little per capita on correctional expenditures and their high percentage of prisoners in private prisons. Comparing all the figures shown, there is not an apparent connection between states that spend little on their correctional services and their use of private prisons. For example, Montana increased their per capita correctional expenditures in 1999 compared to 2015, which was $194.80 (in 2015 dollars) and $260.72 respectively. Comparing these expenditures with their use of private prisons in Figures 1 and 2 they almost doubled the number of prisoners they held in private prisons from 1999 to 2015. In 1999, Montana had 24% of their prisoners in private prisons while in 2015, 40% of their prisoners were held in private prisons.

Per Capita Correctional Expenditures for 1999 in 2015 dollars

PerCapita Correctional Expenditures

500.0

60.0

251.3
194.8
107.0
163.5
12...
300.4
234.4
151.7
251.1
263.4
332.7
282.1
147.4
139.6
179.6 15...
214.2
253.0
319.3
236.3
276.3
240.0
280.4
171.4
166.6
18...
205.8
253.1
240.0
191.0
156.7
150.7
205...
265.2
13... 132.8
235.0
354.9
2...
2...

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Figure 3

Per Capita Correctional Expenditures for 2015

Correctional Expenditures

500.0

60.0

234.0
260.7
179.1
172.2
1...
281.2
206.2
207.4
267.4
2...
31...
365.2
265.3
234.5
177.1
140.9
175.2 15...
170.3
391.6
234.7
177.0
157.5
17...
279.8
251.1
318.6
191.0
197.5
176.2
177.4
209.6
16... 153.1
223.7
2...
15...
470.5
2...

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Figure 4

In figures 5 and 6, I include the percentage changes for state correctional expenditures and the percent of prisoners they have incarcerated in private prisons from 1999 to 2015. These figures express that if you compare the percentage changes in correctional expenditures and private prisons a clear pattern does not appear. For example, New Mexico increased their usage of private prisons and have increased their correctional expenditures since 1999. In another example, Colorado increased their use of private prisons but have decreased their correctional expenditures since 1999. From this simple assessment there is no apparent correlation with increasing private prison use and decreasing correctional expenditures.

Figure 5
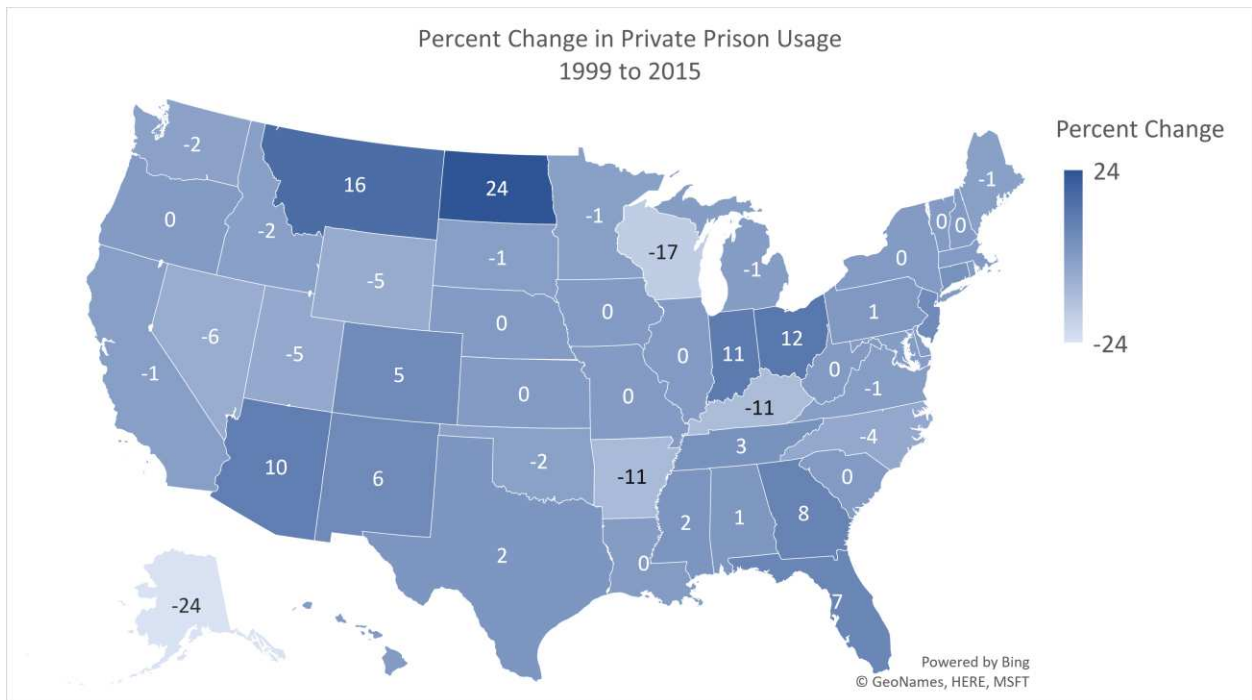
Percent Change in Correctional Expenditures
1999 to 2015
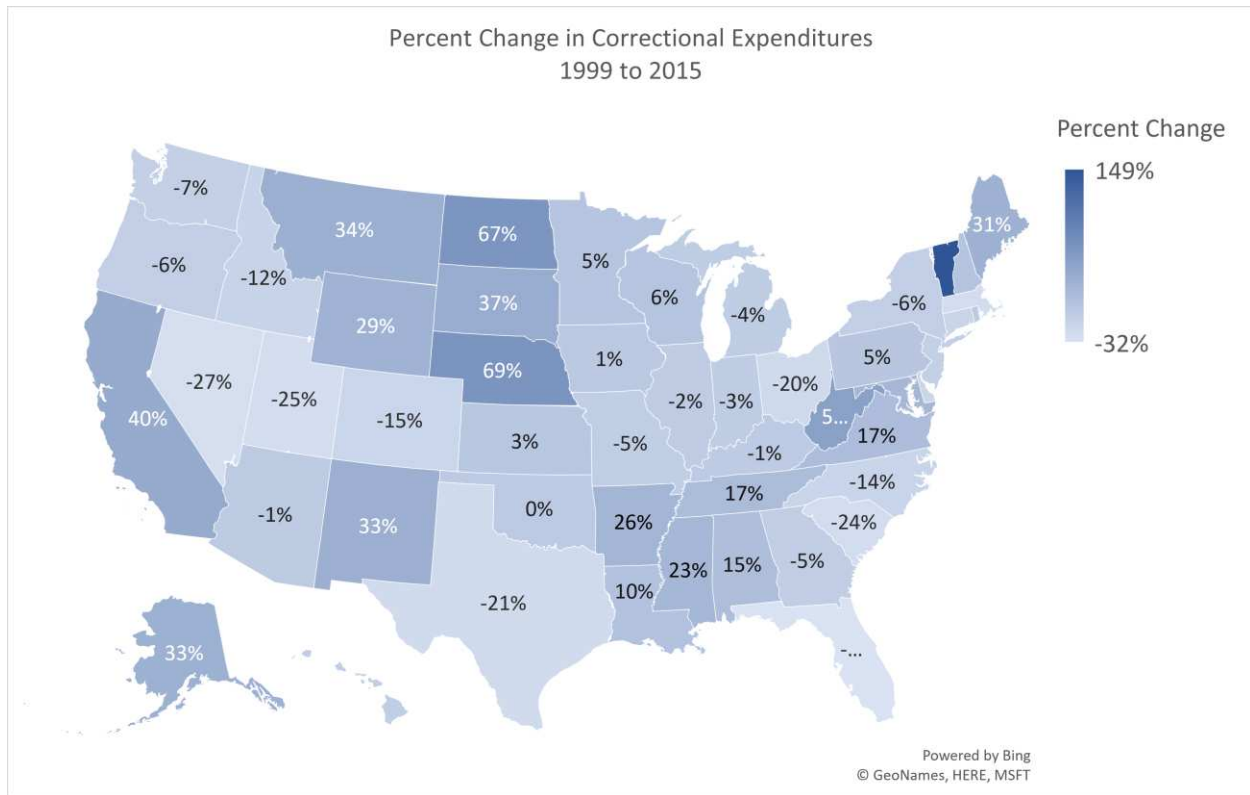
Figure 6

Another place a state may lower costs from private prisons is through inmate lawsuits. Any legal action taken by prisoners to redress any abuse they face while incarcerated at a private prison will be taken up with the private contractor and will therefore reduce the states liability in such cases (McDonald et al. 1998). If it can be proven that the state was not acting with deliberate indifference towards prisoners held in private facilities, then they are not culpable for any instances of abuse that happen in them (McDonald et al. 1998). This legislature does not protect states completely from any lawsuits that arise from using private prisons. The ACLU sued the state of Florida based on instances of cruel and abusive treatment in a private facility operated by the CCA forcing the American Correctional Association to evaluate the treatment of inmates (Logan and Rausch 1985). Using private contractors can help to alleviate the pressures

brought on by over-crowding but as can be seen from history they come with significant costs and quality issues.

In the next section I present previous literature that has been written on private prisons and their usage. Previous literature has focused on delineating if private prisons offer similar quality prisons and getting better understanding of the costs associated with privatizing prisons. There is still much to learn from papers that delve into the subject of prison privatization as it is a relatively new topic.

III. Literature Review

The previous literature on private prisons have focused on two main issues regarding their use. The first issue that proponents and critics have considered has been the determination of the quality of private prisons compared to public ones (Perrone and Pratt 2003). The second issue concerns the potential cost savings to state governments associated with using private contractors to hold prisoners (Nelson 1998). Many proponents of privatization within the correctional system have argued that using private contractors will lead to higher quality prisons at lower costs (Hart et al. 1997). In the following, I offer a short summation of the literature that has focused on the quality of private prisons, then I will present previous literature that catalogues the cost of relying on contractors. I also review literature that discusses public-private partnerships of public services that are being contracted to private companies.

Quality Comparison

Perrone and Pratt (2003) do an extended literature review of papers that try and quantify the quality of private prisons. They note that papers that have tried to shed light on the expansion and reliance on private prisons by state governments have only looked at case studies. Perrone and Pratt notice that it is difficult to generalize about the quality of private versus public prisons by comparing only a few prisons. Private prisons have an incentive to hire inadequately trained guards because their wages will be cheaper, and this can encourage the use of unnecessary force (Hart et al. 1997). The Hart el al. paper created a theoretical framework of privatization and showed that private prisons have a strong incentive to lower costs at the expense of quality. A publication released by the American Civil Liberties Union (2011) studied the effects of using private prisons through a case study analysis. The study reported numerous instances of harsh treatment of individuals detained at private facilities. The anecdotal evidence provided by both

studies, Perrone and Pratt (2003) and ACLU (2011), suggest that private facilities focus on profit maximization as their main goal and rehabilitating law breakers is a low priority.

The preponderance of privatization in the prison market has led many activists and law makers to want answers about the quality and costs of services that private contractors provide. There are still many issues surrounding the attainment of information held by private prisons that are described in an article by Raher (2010). Private prisons are excluded from releasing their records based on the Freedom of Information Act, as is described in Raher's paper. Through protracted legal battles private contracting companies have been able to uphold their secrecy regarding the operations of their facilities. This in turn makes it difficult for outside observers to analyze the successes or failures pertaining to contracting prison industries to private companies. In the ACLU (2011) study, it was observed that private contractors have misinformed governments and the public about their costs which can preclude cost comparisons based on information released from private contractors.

In an article written by Spivak and Shark (2008), data on prisoner's post-release performance was analyzed to make conclusions about the performance of state versus private run prisons in Oklahoma. They collected data from prisoners in Oklahoma to determine the performance of the respective prisons in that state. To conduct their study, the authors used a Cox proportional hazards survival regression specification. They concluded that men who spent more time in private prisons were more likely to recidivate while women were less likely. The lack of transparency in private prisons described in Raher (2010) introduces complications with understanding what could produce the differing recidivation rates between men and women as there is no reason offered in the Spivak and Shark article.

Cost Comparison

Many papers in the past have focused on case study analysis to compare public and private prisons (Archambeault and Deis 1997; OPPAGA 2000; McDonald and Carlson 2005; Nelson 2005). Several of these case studies have been conducted to evaluate the cost effectiveness of private prisons versus similar public counterparts. Typically, the reports are done by impartial services or government oversight committees. Their findings are then reported to the state government and reviewed by all the interested parties and then used to determine if private prisons should continue to be used in the future.

In a paper by Julianne Nelson (1998), she noted that, based on the data from prisons in Tennessee, private prisons reduced their spending on security staff but increased spending on managerial staff and operations. In Hall (1998), he states that private firms will look to construct infrastructure that may be more expensive up front but decreases maintenance fees in the long run. Another possible way that costs could be cut in the short term is that private businesses will reduce the number of employees working in their business. A paper published in 1998, written by John Hall, looks at the relatively recent passing of a bill in English parliament called the Private Finance Initiative. In the paper, Hall describes how the bill will likely affect the level of private spending on public services. The author notes that the PFI contracts will incentivize private businesses, especially in the case of prisons, to change their cost schemes in order to maximize lifetime profits. Mattera et al. (2001) noted that there are significantly higher turnover rates for private prison guards compared to other industries. The high turnover rate also contributes to quality issues that were noted in previous articles (Hart et al. 1997; ACLU 2011). Guards working at public prisons are typically unionized and are paid higher wages then non-unionized guards working in private prisons (Sigler 2010). Looking at data across several years

can contribute to the literature by examining the true costs of contracting private prisons to incarcerate individuals.

In a study done by Archambeault and Deis (1997) which was sponsored by Louisiana State University, two private prisons were compared with a public prison that were all built around the same time. One private prison was operated by Winn Correctional Center and the other by Wackenhut Corrections Corporation. The private prisons in the analysis were under contract with the state of Louisiana. All three prisons were built by the state and then the private contractors were authorized to operate them once they entered into contractual agreements with Louisiana. This offered the authors of the analysis an opportunity to compare the managerial and operational differences that would appear between private and public prisons without having to consider the construction costs necessary to build a prison. The study concluded that both private prisons outperformed the state-run prison in a couple of different categories. The private prisons were found to be 11% to 13% cheaper to operate than the public prison. They were also found to be a safer place for inmates as they were found to have fewer instances of assault that resulted in serious injuries. However, over the period that data was collected in this study, the private prisons had four instances of escape compared to zero escapes from the public prison.

The Office of Program Policy Analysis and Government Accountability, which is an office of the Florida Legislature, known as OPPAGA, conducted a similar study as the Archambeault and Deis (1997) paper. The OPPAGA (2000) case study was of one private prison and one public prison. The private company, Wackenhut Corrections Corporation, built and opened a prison in Florida in 1998. The study concluded that the construction cost of the private prison was 24% less than what the state spent on a similar prison that they opened in a nearby location. Controlling for the size of the two prisons, the public prison was noted as being costlier

per square foot and per inmate bed compared to the private prison. The state of Florida ultimately determines how many inmates are authorized to be under the supervision of each prison and the study concluded that the public prison was held at 103% capacity while the private prison was held at 94% capacity. An increase in the allowed number of prisoners per day in the private prison would have resulted in a lower per diem inmate cost for its operation.

To compare the operating costs of the two prisons, OPPAGA (2000) adjusted for prison capacity and services provided by the respective prisons. The analysis found that the private prison, operated by WCC, was 3.5% cheaper to operate in fiscal year 1997-98 and 10% cheaper to operate in FY 1998-1999 than the public prison that it was compared to. It is noted in the report that cost savings accrued by private prisons are found mainly from personnel. For example, the state pays 21% of each public prison correctional officer's salary into the Florida Retirement System. By comparison, WCC has a 2.5% cap on its retirement expense paid for their employees. The purpose of the report was to provide a recommendation on renewing the contract with WCC. OPPAGA found that WCC exceeded the 7% cost savings required by the state and suggested that they continue to use WCC to operate their prison. Included in the report was a response from the Department of Corrections in Florida which suggested that the adjustments, like for services provided to prisoners[1], made to better equate the prisons resulted in distorting the true operational costs of the private prison and affected the findings of the study.

There were two case studies conducted on the same private facility (McDonald and Carlson 2005; Nelson 2005) which helps to highlight the disparate conclusions reached about the cost savings that are associated with contracting prison services. The study by McDonald and

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[1] Examples of the services provided to prisoners are educational, health, and substance abuse.

Carlson (2005), compared a private prison run by Wackenhut Correctional Corporation to the estimated costs to the Bureau of Prisons (BOP) if it had run the same facility. The study reviewed costs of 5 years, from 1998 to 2002 of the WCC run prison in Taft, California. The facility was known as the Taft Correctional Institution (TCI). The authors also compared the operation of the private prison to fourteen other BOP run prisons that were similar in characteristics. The government and WCC agreed to a fixed price to be paid over a period of 10 years which would increase if the prisoner inmate count rose above a specified amount. The estimated costs for the BOP to operate the prison were established by following the guidelines set forth by the Office of Management and Budget. The report estimated that the private prison was 6-10% cheaper to operate over the five-year period compared to if the government had operated the prison. The authors supported the accuracy of their estimates by comparing their costs with actual costs incurred from fourteen similar prisons operated by the federal government. WCC was able to operate at a lower cost than the majority of the fourteen prisons that were in operation. McDonald and Carlson concluded that WCC operated their prison at a cheaper rate than what the BOP could have operated an identical prison.

A separate report of the Taft private facility was published in 2005. Nelson (2005) conducted an analysis to evaluate the cost to the government of contracting with a private company to run a prison. Like the previously mentioned report, Nelson (2005) looks at data of the first five years of a ten-year contract to compare operating costs of the private prison to the cost of running the same prison if the Bureau of Prisons had run it themselves. The analysis took information from the beginning of the contract and guidelines set by the Office of Management and Budget to estimate an expected cost for both contracting out operations or having the prison run by the government. Based on their estimates it would have been cheaper for the BOP to run

the prison in question. Within the case study, they discovered that the observed contract per diem costs were more than what was expected. These higher costs were due to wage increases mandated by the Service Contract Act. To check the validity of their cost estimates, the authors observed the cost of three prisons, run by the BOP, that were similar to the Taft Correctional Institution. The estimates that were established in the report over-estimated the per-diem cost of two prisons run by the BOP and under-estimated the other[2]. The analysis revealed that the observed per diem costs of the contract were not substantially different from per-diem costs at comparable BOP run prisons. Based on their results, the report asserted that there was no significant cost difference between contracting out the operation of the prison to that of having it run by the government.

A comprehensive study of private prisons in the United States written by McDonald et. al. (1998) compares the literature on quality, cost, and the legality of private prisons. The authors conclude that the literature that is in existence differs in its conclusions of whether private prisons are beneficial for society. This is based on their ability to lower costs and alleviate overcrowding issues in public facilities. They use data collected from a survey to reach conclusions about the need for private prisons in several jurisdictions in the United States. The legislation surrounding private prisons mainly stipulates that privately-run facilities should adhere to operating rules set forth by government contracts and organizations that ensures the quality of confinement is humane. Also, many contracts with state governments have clauses where the private facility should be able to promise cost savings to the state.

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[2] Differences in the estimates established can be explained by the authors decision on how to handle "support costs" and selecting what was avoidable and unavoidable. Support costs are expenditures that can benefit all BOP facilities including privately managed facilities. They include central office, training, national programs and regional office costs.

An American Civil Liberties Union (2011) paper noted the apparent conflict of interest of private facilities to ensure rehabilitation for incarcerated individuals. This results from the need of individuals to fill private facilities to ensure a stream of money from corrections departments. A working paper by Dippel and Poyker (2018) find a causal link between judges' sentencing behavior and private prisons. They use state-specific changes in prison capacity and sentencing in circuit courts in contiguous counties to test for the causal link. The dependent variable is the length of an individual's prison sentence in months and the variable of interest is the private prison capacity. They find that there is an increase in the amount of time a person will be sentenced based on an increase in private prison capacity. This causal link suggests that there is an incentive for judges to hand out lengthier sentences based on how large the private prison industry is in their district. The cost of incarcerating individuals will increase proportional to the amount of time they are required to serve. By examining data over several years, it will be possible to determine accurate cost information on the price of allowing private prisons to incarcerate individuals.

Mason (2012) gives a historical perspective of the reliance and motivation for the use of private prisons by states starting in the 1980's. Mason delineates the various amounts of prisoners that have been held by private facilities by each state over the span of 30 years. A few states have rid themselves of their contracts with private facilities while others have increased their use of private facilities. Mason suggests that the change in the level of prisoners held in private facilities is correlated with the level of political contributions made by the companies that run private prisons. This discovery indicates that private prisons attempt to promote mass incarceration and are not concerned with reducing recidivism rates. Sentence length has been shown to increase as the amount of private prisons in a state increase (Dippel and Poyker 2018).

Mason also provides anecdotal evidence that even if private facilities are less costly than their public equivalent, they achieve these costs reductions by offering inferior qualities to inmates or suppressing their workers' wages, which has been supported by evidence in other articles (Hart et al. 1997; Perrone and Pratt 2003; ACLU 2011). The use of an econometric model that uses aggregate data across time will make it possible to examine if private prisons are in fact more expensive to contract.

Along with per diem costs for housing prisoners, governments provide subsidies to private prisons in other ways. Private prisons can be awarded tax breaks and subsidies which may add to the cost of privatizing the prison industry for local, state, and federal governments as noted by Mattera et al (2001). In their study, Mattera et al, interviewed government leaders to identify if the subsidies that were provided to private prisons were investigated to ascertain if the prisons that were being used were providing economic benefits. The government officials interviewed were unaware if there were any benefits identified through economic studies, or if any economic studies were done at all. Mattera et al. also studied the private prison industry and found that 73% of the 60 facilities in operation at the time received development subsidies from the government. They found that $628 million in tax-free bonds and other government-issued securities were used to finance the private prisons in their study. The cost associated with contracting private prisons are therefore underrepresented by looking at the per diem amount given to prisons.

Determining the true cost of privatization is a difficult procedure as is pointed out in a paper by Kish and Lipton (2013). In their paper they review several previous papers that try to pinpoint the costs of using private contractors to hold inmates. Kish and Lipton conclude that most papers either find that private prisons are less costly, or authors were unable to determine

whether privatization was more expensive. In one instance, papers reach differing conclusions studying the same prisons (McDonald and Carlson 2005; Nelson 2005). Kish and Lipton further explain that cost analyses of private prisons are inherently difficult to conduct for several reasons. These reasons include, a failure to account for all costs (indirect and direct) of prison operation, quantifying the impact of cost savings on quality, and private prisons are not likely to disclose information. In McDonald et al. (1998), contracts between private companies and states included rules that required having a state monitor visit or work at the prison to ensure agreements within the contract were upheld which contributes to costs incurred from contracting that may be unaccounted for.

Public-Private Partnerships

There are many facets to contracts that are not expressed directly in the previous literature on private prisons because it is a relatively new phenomenon. Looking at literature on public-private partnerships (PPP) helps to explain the extent to which contracts can affect state expenditures. Public-private partnerships involve shifting the delivery of public services is shifted to the private sector.

In Sadka (2007), PPPs were noted as being a possible way for states to spread the cost of construction across future years to undervalue current budget deficits. However, Sadka asserts there is no precedence that suggests most PPPs are a way for states to be fiscally irresponsible. PPPs are also possible avenues of evading controls on expenditures. Actions that are efforts to procure contractors come with costs. In Dudkin and Valila (2006), general transaction costs were estimated for acquiring PPPs. The authors determined that costs to states of acquiring contracts are 7 to 10% of the capital value of the proposed project. They note that each sector varies in the typical amount of transaction costs resulting from awarding contracts. In smaller sectors,

transaction costs are typically higher for the public sector. Any savings achieved from shifting responsibility from the public sector to the private sector are diminished by transaction costs.

A few papers have considered governments' motivations to contract with private prisons (Price and Riccucci 2005; Kim and Price 2014). They used econometric models to answer this research question. An article by Price and Riccucci (2005), for example, looks at what motivates the reliance on private prisons by state governments. They conclude that states are more likely to contract private companies to operate prisons based on the political culture and controlling party in the legislature of the state. However, proponents of prison privatization believe that states will be motivated to privatize based on the economic benefits of using contractors. The authors use regression analysis to uncover possible motivating factors for states to privatize their prisons. Henrichson and Delany (2012) show that the cost of prisons to taxpayers are a significant source of motivation for policy reform. They took data from 2010 to assess the level of corrections spending on prisons across states. This study uses their findings to express the average cost of incarcerating an individual to taxpayers. They also limit their cost analysis by using data from one year.

Kim and Price (2014) look at the impact of various factors on the proportion of state inmates held in private facilities based on different independent variables. They address similar questions to those posed by the Price and Riccucci (2005) article. Kim and Price found that political pressures, government ideology, and unionization do not affect the proportion of state inmates held in private prisons. However, they did find evidence that correctional expenditures, prison capacity, and regional identity are factors that affect the amount of state inmates held in private prisons. Regional identity refers to the social expectation of different areas in the U.S.,

where areas that have relied on private prisons in the past will continue to do so in the future as it has become an element of their culture.

In the next section I describe how I will use econometrics to answer the topic question of this paper. Using data from a seventeen-year period, I examine whether private prisons are actually cost saving for states to use.

IV. Measuring If Private Prisons are Actually Cost Saving

To analyze if private prisons are actually cost saving, I use a fixed effects econometric model. The data I use is panel data over a period of 17 years and 50 states. I offer the summary statistics and describe the data in the section that follows this one. In this section, I describe the econometric model that I use and the reasoning for the variables that are included in the model.

I estimate two models with two dependent variables to conclude on the effects of using private prisons. The first described in the model is the correctional expenditures by state by year controlling for the state population of that year, which is correction expenditures per capita. The second dependent variable looked at is the correctional expenditures for each state per year controlling for the total number of prisoners they have incarcerated for that year, which is correctional expenditures per prisoner. The two variables measure slightly different things. The per capita controlled variable tells us what the state spends per citizen on their corrections department. The per prisoner variable tells us how much the state spends on their corrections department per prisoner per year.

The baseline regression is:

$$(1)\ Y_{st} = \beta_1 + \beta_2 Priv_{st} + \gamma_s + \delta_t + \epsilon_{st}$$

The estimated regression is of the following form:

$$(2)\ Y_{st} = \beta_1 + \beta_2 Priv_{st} + \beta_3 U_{st} + \beta_4 Pov_{st} + \beta_5 Gini_{st} + \beta_6 PopDen_{st} + \beta_7 Gov_{st} +$$
$$\beta_8 APC_{st} + \beta_9 AVC_{st} + \beta_{10} PC_{st} + \beta_{11} VC_{st} + \beta_{12} PE_{st} + \gamma_s + \delta_t + \epsilon_{st}$$

The dependent variable, Y, is either per capita correctional expenditures or correctional expenditures per prisoner. The independent variable of interest is *Priv*, which is the percent of

prisoners that a state has in private prisons. If private prisons are cost saving, then β_2 is predicted to be statistically significant and negative.

To control for fluctuating changes in correctional expenditures and to also study the associations between other determinants and correctional expenditure, I include 10 other variables in some specifications of my model. *U* is the unemployment rate for each state for a given year. *Pov* is a measure of the percent of citizens living in poverty in a given state. *Gini* is a measure of the Gini index of income inequality for a given state. *PopDen* is a measure of a state's population density. *Gov* is a measure of the political environment within a state's government. *APC* is the property crime arrest rate per thousand residents within a state. *AVC* is the violent crime arrest rate per thousand residents for a given state. *PC* is the property crime rate per thousand residents and *VC* is the violent crime rate per thousand residents for a given state. *PE* is the per capita police expenditures in a state[3]. Gamma (γ) and delta (δ) denote state and time fixed effects respectively[4].

The inclusion of the ten other variables alongside the variable of interest, *Priv,* is to control for other factors that will influence the amount of expenditures that a state will have on their correctional department. It helps to include variables that will control for the increase in crime in a state to disentangle the effects of the percent of prisoners held in private prisons.

There have been several studies (Kelly 2000; Gillani et al. 2009) that suggest a relationship between crime rates, poverty, unemployment, inequality, as measured by the Gini index, and population density. I expect the coefficients associated with these variables to be

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[3] Due to the possibility of Police Expenditures causing endogeneity problems I ran a regression where I excluded the *PE* variable which did not present any issues by leaving it in the model.
[4] Because of the dwindling degrees of freedom in the model I was unable to do time and year interaction terms.

positive because there will be increased correctional expenditures associated with increased poverty, unemployment, inequality and population density.

The government ideology of a state influences the decisions that legislatures will make on prison services and composition (Price and Riccucci 2005). Including this measure helps to control for the differing costs associated with services offered to inmates, such as health and rehabilitation. I expect that the coefficient associated with government ideology will be positive. As a state's government ideology becomes more liberal than there will be an increase in correctional expenditures associated with this.

Most private prisons hold medium to minimum security risk individuals as stated in McDonald et al. (1998), which is why a variable to control for the arrest rate of violent crimes is included. There was no data on the classification of individuals incarcerated for violent crimes by state by year. I include the arrest rates for violent and property crime because people being arrested will be incarcerated if proven guilty. It is true that housing individuals who are more violent and require maximum security facilities is costly to the state government (Mumford et al. 2016). If there are a lot of individuals required to be held in facilities that are maximum security, then that will inflate the costs to the correctional department in that state and that is crime is separated out to violent and property. I expect the coefficients associated with these variables to be positive.

I make use of a fixed effects model because it accounts for the heterogeneity of states and their relationship with private contractors. I include the results of an OLS regression of the pooled data in section VI as a comparison and further robustness check.[5]

As states enter into contractual agreements individually it is advantageous to consider a fixed effect model. The differences in reliance on private prisons by some states can influence the coefficients in the model. Some states use a high percentage of private prisons while others have outlawed the use of private contractors of prisons altogether. These differences impact the estimation of each model.

In the next section I offer a brief explanation for where I obtained the data and how the data has been transformed for the analysis. Also, I present the summary statistics for the data that is used.

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[5] I ran a first differenced model with the same variables that did not have striking results when compared to the fixed effects model. I also ran a fixed effects model where the respective variables, per capita correctional expenditures, correctional expenditures per prisoner and per capita police expenditures were logged. The results of the logged variable regression are included in Appendix 1. The same variables were significant in the logged regressions as in the linear regression and in the same direction. This therefore serves as a robustness check.

V. Data

Data on the correctional expenditures and police expenditures by each state is published by the Bureau of Justice Statistics. The BJS also published data collected on the number of prisoners held by each state for each year included in this analysis (1999-2015)[6]. From the Federal Reserve Economic Data, I obtained state population estimates for the years of the analysis[7]. This allowed for me to create the two dependent variables that I look at using the various econometric models.

The government services that produce correctional expenditures include prisons, penitentiaries, jails, and other correctional institutions. Correctional expenditures are calculated by taking the total of direct current expenditures and capital outlay for the year. Direct current includes salaries paid, the purchase of supplies, materials, and contractual services while capital outlay are expenditures on construction, equipment, and the purchase of land. Police expenditures are calculated by the costs incurred by police services, patrols, crime prevention activities, and other law enforcement activities.

Along with total prisoner population the BJS has data on the number of prisoners held in private facilities as a percent of total prisoners by each state for each year included in the analysis. This was the source of the variable of interest, *Priv.*

The unemployment rate estimates were obtained from the Federal Reserved Economic Data[8]. The U.S Bureau of the Census published data on the estimates of the poverty rate and Gini

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[6] Available at https://www.bjs.gov/index.cfm?ty=dctp&tid=1 and following the links on the left-hand side of the site to either Expenditures/Employment or Total correctional population.
[7] Population estimates are available at https://fred.stlouisfed.org/categories/104.
[8] Unemployment data available at
https://fred.stlouisfed.org/search/?nasw=0&st=unemployment&t=unemployment%3Busa&ob=sr&od=desc

Index[9]. The Gini Index was collected from the American Health Rankings from 1999-2007 after 2007 the Gini Index was collected from the Bureau of the Census[10]. The Gini index is a measure of income inequality that goes from 0 to 1. For the Gini index, a measure of 1 indicates that there is absolute inequality within the area of interest, while a measure of 0 indicates absolute equality. Population density was collected from estimates created by the U.S Bureau of the Census and is measured as the number of people per square mile.

Gov is a measure of a state's government ideology in each state on a liberal-conservative continuum ranging from 0, the most conservative, to 100 being most liberal, as developed by Berry et al. (2010). A state's government ideology was measured using the scores from the Americans for Democratic Action and the AFL-CIO Committee on Political Education rankings. These rankings are calculated by assessing the votes of Congress on a select few important matters that were voted on during a voting period. Berry et al. (2010) takes these rankings and attributes them to state officials with the assumption that state officials mirror their federal counterparts. For example, a conservative state like Arizona has a score of 17.5 while California, a liberal state, has a score of 71.4. The data for government ideology was collected from Richard Fording's website, a co-author of the paper that develops the measure[11].

The Crime Rate and Arrest Rate was collected from the Uniform Crime Reporting site which is conducted by the Federal Bureau of Investigation[12]. This data was then used to create counts of violent crime and property crime offenses and arrests. The variables *APC, AVC, PC,* and *VC* are the counts of arrests and offenses as counted per thousand residents in a state

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respectively. Violent crimes are offenses of murder, forcible rape, robbery, and aggravated

assault. Property crimes are offenses of burglary, larceny-theft, motor vehicle theft, and arson.

Descriptive statistics for the data are in Table 1[13]. In total there are 850 observations for

the variables. There are 50 states included in the study over the period of 1999-2015.

Table 1: Descriptive Statistics

Descriptive Statistics					
Variable	Obs.	Mean	Std. Dev.	Min	Max
Correctional Expenditures Per Capita	850	194.8533	62.90263	62.97282	470.4931
Correctional Expenditures Per Prisoner	850	51976.44	22349.32	14211.23	127068.9
Percent of Prisoners in Private Prisons	850	7.730118	11.06653	0	45.8
Percent Unemployed	850	5.746363	2.006991	2.3	13.60833
Percent of Citizens Living in Poverty	850	12.56906	3.406838	4.5	25.8
Gini Index of Inequality	850	0.45091	0.026604	0.383	0.519
Population Density	850	191.331	256.4966	1.085621	1218.348
Government Ideology	850	46.22189	15.40257	17.51221	73.61864
Property Crime Arrests per Thousand Residents	850	1.654629	1.339348	0	8.57552
Violent Crime Arrests per Thousand Residents	850	10.32317	22.13598	0	201.0014
Violent Crime per Thousand Residents	850	3.97835	2.301519	0.222029	40.70155
Property Crime per Thousand Residents	850	31.77711	10.27526	4.654275	96.04126
Police Expenditures per Capita	850	244.6103	75.75834	87.39861	513.3558

The mean percent of prisoners that states have in private prisons is 7.7%. However,

eleven states do not use private prisons, and five have phased them out over the time of this

analysis[14].

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[13] See appendix 4 for the between and within variation of the data.
[14] Appendix 2 has a list of states that have never used private prisons or have phased out their use of them over the time period in the analysis.

Any missing observations in the data were replaced by averaging the previous and following year observations. In total 11 observations were replaced by averaging the previous and following year. Correctional expenditures for the years 2001 and 2003 were not available by state because a change in the design of the financial surveys collected by the BJS. Limited arrest and crime data were available for random states over the period included in this analysis. For example, limited data was collected in Minnesota in 2007 for violent crime offenses, this is due in part because the number of agencies that submit data to UCR varies from year to year. Data on property crime arrests were not available for Kansas in 1999, 2000, and 2001 while data on violent crime arrests were not available for 1999 and 2000. Data on property crime arrests were not available for Wisconsin in 1999 or 2000.

VI. Empirical Results

The following section presents the regression results. The OLS regressions differed in many ways to that of the fixed effects models because of the inherent heterogeneity of the states. As described earlier in this thesis, states differ greatly from each other in their usage of private prisons over the time period of study.

Before discussing the results of the main specification of this paper I provide the results of the baseline regressions in table 2. It helps to identify what the coefficient attached to the variable of interest, *Priv*, is when there are no control variables present in the model. Also, we can see the importance of adding the fixed effects to the model. Comparing the baseline regression to the main specification can help to show the importance of including both the fixed effects and the control variables.

TABLE 2: BASELINE RESULTS 1999-2015

VARIABLES	(1) Correctional Expenditures per Capita (Fixed Effects)	(2) Correctional Expenditures per Capita (Pooled OLS)	(3) Correctional Expenditures per Prisoner (Fixed Effects)	(4) Correctional Expenditures per Prisoner (Pooled OLS)
Percent of Prisoners in Private Facilities	-0.477	0.892***	-75.49	-196.7**
	(0.624)	(0.210)	(94.79)	(79.21)
Constant	153.3***	188.0***	41,792***	53,497***
	(5.626)	(2.590)	(1,650)	(964.9)
Includes both State and Time Fixed Effects	Yes	No	Yes	No
F-Statistic	21.79	18.00	13.30	8.12
Observations	850	850	850	850
R-squared	0.622	0.025	0.490	0.009
Number of States	50		50	

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

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A striking result from the baseline regression is the increase of the R^2 between the pooled OLS and fixed effects regressions suggesting there is a better fit when using fixed effects and that the fixed effects are pulling out important state and year heterogeneity. This result exhibits the importance of the fixed effects impacting the variation in correctional expenditures per capita or per prisoner respectively.

Models 2 and 4 presented in table 3 are the results of the OLS regressions run on the pooled data of the states and their correctional expenditures. Models 1 and 3, the main specification, in table 3 are the fixed effects models that were run to try and identify true estimates of the coefficients because of the differences in conduct with private contractors and legislation that state governments have when compared to each other.

It is apparent from the results in table 3 that significant changes occur when using either the pooled OLS regression method or the fixed effects model. The comparison of the specifications shows a change in the values of the coefficients, some changing signs, between the OLS model and the fixed effects model. Another thing to note is the change in statistical significance of variables between specifications. These results suggest that an OLS regression does not adequately capture the heterogeneous factors that are present in the fixed effects model because of the changes in value and significance of many of the coefficients. This is seen by comparing models 1 and 2 in table 3. The R^2 values are slightly higher for the fixed effects models showing that using a fixed effects model is a better fit to examine what impacts correctional expenditures among states. There are two different dependent variables used to capture if private prisons are actually cost effective. The first two models show the results when

correctional expenditures per capita is used while the next two use correctional expenditures per

prisoner.

TABLE 3: RESULTS 1999-2015

VARIABLES	(1) Correctional Expenditures per Capita (Fixed Effects)	(2) Correctional Expenditures per Capita (Pooled OLS)	(3) Correctional Expenditures per Prisoner (Fixed Effects)	(4) Correctional Expenditures per Prisoner (Pooled OLS)
Percent of Prisoners in Private Facilities	-0.183	0.300**	-25.12	-137.9**
	(0.349)	(0.135)	(68.77)	(70.05)
Percent Unemployed	-1.917	-0.346	-635.7	-125.6
	(1.484)	(0.934)	(513.1)	(424.8)
Percent of Population Living in Poverty	-1.004*	0.567	-548.8***	-919.0***
	(0.525)	(0.538)	(176.4)	(295.3)
Gini Index of Income Inequality (measured from 0, absolute equality, to 1, absolute inequality)	-12.28	-122.0*	-2,771	-63,310**
	(41.14)	(72.38)	(14,941)	(31,875)
Population per Square Mile	-0.519**	-0.0296***	55.96	-5.005
	(0.198)	(0.00629)	(101.2)	(3.396)
Government Ideology (liberal-conservative spectrum from 1 to 100)	-0.0583	0.0122	84.38**	309.4***
	(0.107)	(0.0941)	(41.50)	(42.33)
Violent Crime Arrests per Thousand Residents	-0.768	4.790***	63.96	-1,157**
	(1.170)	(0.960)	(477.2)	(463.8)

Property Crime Arrests per Thousand Residents	0.286***	0.235***	42.07*	-59.37**
	(0.0589)	(0.0665)	(23.39)	(28.17)
Violent Crimes per Thousand Residents	-0.349	0.338	-18.36	-1,331**
	(0.299)	(0.833)	(125.5)	(558.8)
Property Crime per Thousand Residents	0.0736	0.129	32.19	-328.6***
	(0.0821)	(0.118)	(39.70)	(82.76)
Police Expenditure per Capita	0.395***	0.642***	133.4***	136.3***
	(0.0766)	(0.0268)	(20.20)	(11.88)
Constant	199.9***	74.80**	18,793	65,454***
	(38.57)	(29.32)	(19,624)	(12,865)
Includes both State and Time Fixed Effects	Yes	No	Yes	No
F-Statistic	57.91	119.73	23.36	42.84
Observations	850	850	850	850
R-squared	0.721	0.608	0.560	0.366
Number of States	50		50	

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Models 1 and 2 show the OLS and fixed effects regressions when correctional expenditures per capita is the dependent variable. The coefficient attributed to the percent of the population living in poverty becomes significant at the 10% level. The coefficient for the Gini index is no longer statistically significant given the fixed effects specification, model 1, so is the coefficient attached to violent crime arrests per thousand residents. The coefficient for population density loses significance and changes from the 1% level to the 5% level of significance when using the different specifications.

To examine the effects on correctional expenditures per prisoner the table expresses the results of the two specifications in models 3 and 4. Again, we can see changes in statistical

significance when considering the two specifications. For the pooled OLS model the measures of violent crime arrests, violent crime, property crime per thousand residents in a state and the Gini index of inequality become insignificant when using the fixed effects specification. The coefficient attached to a state's government ideology, which measures how liberal or conservative a state is graded on a spectrum from 1 to 100, goes down in statistical significance when using the fixed effects model. The measure for government ideology is significant at the 1% level in the pooled OLS regression while in the fixed effects model for correctional expenditures per prisoner it is significant at the 5% level. The results suggest that the pooled OLS specification fails to capture the heterogeneous[15] aspects of states' correctional expenditures per prisoner.

It is also important to note the change in the coefficient of interest, the percent of prisoners in private prisons, between the fixed effects models, 1 and 3, in tables 2 and 3. The percent of prisoners in private prisons has less of an effect on correctional expenditures per capita and correctional expenditures per prisoner in the main specification, table 3, than the baseline regression, table 2. In both tables there is not strong evidence that the percent of prisoners in private prisons save states much money. The decrease in effect from the baseline to the main specification is evidence of omitted variable bias in the baseline specification.

The following discussion focuses on the results of the fixed effects model as it is a better specification for the given analysis. It is apparent that the heterogenous aspect of the states affects the coefficients in a way that would make them biased and inconsistent if the state characteristics were ignored.

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[15] Appendix 3 shows the results of the fixed effects regression including the individual state effects.

Are Correctional Expenditures Lower when Private Prisons are Used?

Given the empirical results, it is apparent that private prisons do not affect correctional expenditures in the ways that were suggested by people who championed their use amongst states. When correctional expenditures per capita is the dependent variable the coefficients relating to the percent of prisoners in private prisons is of a very small magnitude and is not statistically significant. The per prisoner correctional expenditures is likewise marginally affected by the increase in the percent of prisoners in private prisoners, although the sign is as predicted by proponents of privatization. There are other factors that contribute to the increase or decrease of correctional expenditures by state governments. The results suggest that policy makers should focus more on aspects that decrease crime and poverty than on contracting correctional services to private companies.

Property crime arrests per thousand residents is highly significant in model 1 of the fixed effects regression. This is a measure of the number of individuals who are arrested for committing property crimes in a state and it makes sense that it has a positive coefficient. An increase of ten instances of property crime arrests per thousand people in a state, all else equal, will raise the per capita correctional expenditures by $2.86. As more people are arrested for crimes that are likely to send them to prison, the state will have to spend money to incarcerate them. The data shows that the expected result for potentially increasing the incarceration rate within a state will raise expenditures for the correctional department.

For model 3, a similar result is shown. An increase of ten instances of property crime arrests per thousand people in a state, all else equal, will raise per prisoner correctional expenditures by $420.70. The coefficient attached to this variable is of the expected sign as it costs states money to provide the services needed to incarcerate individuals in penitentiaries.

For both the models, 1 and 3, the results in table 2 show that instances of crime, violent or property, per thousand residents are not statistically significant. This result could be explained because many crimes go reported to the police but are not followed up with an arrest or the fact that one individual can commit multiple crimes (Gramlich 2017). There is no statistical relationship from the event of a crime and correctional expenditures. A study of police expenditures would likely show a relationship with crime but that is beyond the scope of this analysis, as police expenditures are not included in the correction expenditure measure used in this paper.

A possible way to decrease correctional expenditures within a state is to combat the amount of property crime that occurs, resulting in arrests. Giving people other opportunities to disincentivize committing property crime, like burglary or auto theft, will have an effect in decreasing correctional expenditures if it is successful.

The result of increasing police expenditures has the expected result. For both model 1, per capital correctional expenditures, and model 3, the per prisoner correctional expenditures have positive and statistically significant coefficients for per capita police expenditures. For a $1 increase of per capita police expenditures, all else equal, per capita correctional expenditures will increase by $0.40. In relation to model 3, for a $1 increase of per capita police expenditures, the per prisoner correctional expenditures will increase by $100.50. As more funds are allocated to the police department in a state there is a statistical relationship with correctional expenditures. The resulting coefficient is of the expected sign, as police departments acquire funds to pay for officers to patrol then it is likely that people committing crimes will be caught and arrested.

For the percent of people living below the poverty line, there is evidence of a decrease in the per prisoner correctional expenditures. A 1% increase in the amount people living in poverty,

all else equal, will decrease per prisoner correctional expenditures by $548.80. The percent of people living in poverty also effects per capita correctional expenditures. For a 1% increase in the amount of people living in poverty will decrease per capita correctional expenditures, all else equal. Many people who are counted as living below the poverty line are eligible for support from the local or federal government (Sherman et al. 2013). Any support people living below the poverty level receive from the government could in turn help to disincentivize them from turning to crime in the hope of supporting themselves.

Also, for model 3, the coefficient linked to Government Identity has a statistical relationship with per prisoner correctional expenditures. This suggests that the more liberal a state is the more it will spend on its correctional department. For a one-unit upward movement along the liberal conservative spectrum, all else equal, there will be an increase in per prisoner correctional expenditures of $85.32 This suggests that as states become more liberal in ideology, there government will legislate increases in correctional expenditures. The support for strong stances on crime and prisons will lead to increases in correctional expenditures as will building more prisons or hiring more guards and increasing focus on rehabilitative programs (Pfaff 2016).

From the evidence in this study, state correctional expenditures are not affected by increasing the percent of prisoners in private prisons. Contracting private companies to run prisons does not produce the results that are expected when allowing private markets to allocate resources. With a lack of competition amongst private companies offering their services to state governments there is a lack of competitive forces that would result in the expected reduction of price through an ease in acquiring the services of guards and building infrastructure without lengthy bureaucratic processes or voter approval (Mumford et al. 2016). Guard wages are on average lower in private prisons than in public prisons and with higher turnover rates (Mumford

et al. 2016). The result of which can lead to increased instances of violence and abuse because of poorly equipped staff. Lower per diem estimates for private prisons do not adequately capture the economic cost that can result from their use.

With a high barrier to entry in the market, once states contract to use private prisons they may see reduced leverage when renegotiating contracts in the future because of their reliance on private prisons and the states difficulty to raise the required funds to build their own prison (Sigler 2010). There is also evidence of higher escape rates amongst private prisons that result in costs to states and the federal government to recapture inmates (OPPAGA 2000; Archambeault and Deis 1997). Fundamentally, it is within the interest of private prisons for increased incarceration rates to ensure that their prisons are used to house inmates, while rehabilitation efforts are neglected (ACLU 2011). New offenders and reoffenders create burdens on the state as resources are used to capture and incarcerate them and there is evidence that suggests men held in private prisons have higher rates of recidivism compared to public prisons (Spivak and Shark 2008). Private prisons impact states' costs in ways beyond measures of correctional expenditures and their use has far reaching effects.

Fixed Effects of States with and without Private Prisons

The results of the fixed effects model are interesting and telling of what drives correctional expenditures per capita or per prisoner but to check for the model's robustness it could be useful to separate states that have private prisons and those that do not. This method was used to check to see if states without private prisons were driving the marginal effect that private prisons have on correctional expenditures.

Table 4 presents the fixed effects results of four different regressions. Used are the same two different dependent variables with the same independent variables but now the data are split into two groups, states with private prisons and those without private prisons.

TABLE 4: Results 1999-2015

VARIABLES	(1) Correctional Expenditures per Capita (With Private Prisons)	(2) Correctional Expenditures per Capita (No Private Prisons)	(3) Correctional Expenditures per Prisoner (With Private Prisons)	(4) Correctional Expenditures per Prisoner (No Private Prisons)
Percent of Prisoners in Private Facilities	-0.285	0.342	-23.16	426.8
	(0.328)	(1.443)	(66.54)	(364.7)
Percent Unemployed	-0.667	-0.578	-1,051	58.97
	(2.045)	(0.969)	(694.0)	(827.5)
Percent of Population Living in Poverty	-0.991	-1.054	-552.1**	-299.0
	(0.666)	(0.704)	(206.4)	(260.8)
Gini Index of Income Inequality (measured from 0, absolute equality, to 1, absolute inequality)	13.62	-115.6	5,312	-5,607
	(50.93)	(117.8)	(17,327)	(54,550)
Population per Square Mile	-0.505*	-0.503***	158.8	-41.59
	(0.262)	(0.155)	(147.4)	(55.47)
Government Ideology (liberal - conservative spectrum from 1 to 100)	0.0705	0.0132	105.7**	39.52
	(0.142)	(0.188)	(47.97)	(114.2)
Violent Crime Arrests per Thousand Residents	-0.571	-0.116	696.4	-457.3
	(1.525)	(1.571)	(624.3)	(447.4)
Property Crime Arrests per Thousand Residents	0.266***	0.149	40.82	51.06
	(0.0598)	(0.193)	(26.18)	(89.17)
Violent Crimes per Thousand Residents	0.464	-0.176	196.9	-47.28
	(1.262)	(0.147)	(561.4)	(99.70)
Property Crime per Thousand Residents	0.448	0.0237	184.9	20.89
	(0.304)	(0.0467)	(132.3)	(31.01)
Police Expenditure per Capita	0.487***	0.0912	122.8***	44.61

	(0.0792)	(0.0955)	(30.83)	(73.52)
Constant	134.6**	305.0***	-13,069	51,082*
	(54.03)	(47.69)	(26,763)	(28,220)
Includes both State and Time Fixed Effects	Yes	Yes	Yes	Yes
F-Statistic	103.17	na	143.49	na
Observations	578	272	578	272
R-squared	0.752	0.721	0.598	0.534
Number of States	34	16	34	16

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The variable of interest, percent of prisoners in private prisons, in all the models in table 4 are not statistically significant which suggests that the results in table 3 are not driven by states that do not have private prisons. The use of private prisons then has a marginal effect on correctional expenditures per capita or per prisoner in states. This suggests that the use of private prisons under the pretext that they will reduce correctional expenditures is not supported by the data.

The results of this analysis suggest that there is no effect on cost from increasing the percent of prisoners in private facilities. There are other and more significant factors that contribute to changes in per capita correctional expenditures or per prisoner correctional expenditures. For example, poverty and the state government ideology impact the states correctional expenditures to a significant degree. In the next section I make some brief concluding remarks on the study and the results that were obtained from investigating if private prisons are actually cost saving for states to use in place of public prisons.

VII. Conclusion

The efficacy of private prisons has been debated since their inception and use in the 1980's. Present in the debate was the question on whether or not they offered cost savings to state correctional departments. The era in which they appeared was the beginning in an explosion in prison populations resulting from various events, like the War on Drugs, and new legislation on indeterminate sentencing (Perkinson 2010). With most states facing issues with their prison infrastructure stemming from overcrowding they needed a quick solution to try and alleviate that problem. One solution was to look towards private contractors who could build prisons at a much quicker rate compared to their public counterparts. It was also a desirable solution because the use of private contractors would not rely on voter approval to build new prisons.

In previous research the conclusion about the cost of private prisons differs from paper to paper with most previous research pointing towards little to no cost savings stemming from the use of private prisons. These results come from multiple studies that use case study analysis to form their conclusions. The results of this study add to previous literature on private prisons by offering econometric analysis obtained from panel data that includes observations from 50 states over seventeen years. Along with no evidence of cost savings, there are several instances pulled from historical events where abuse was high in private prisons. There are clear economic incentives for private contractors to pay lower wages to their guards. This can lead to higher rates of abuse and violence within private prisons because of relatively inexperienced prison staff. There are also incentives for private prisons to not offer rehabilitative services because of their expense. This can cause higher rates of recidivism amongst inmates who are held in private facilities. This suggests that the ultimate economic impact of the trend toward using more private prisons relative to public ones over time has implications beyond simple state finances.

An area of future study involving private prisons could look into the composition of the private market of prisons and consider the role of imperfect competition. There could also be an investigation into short-run and long-run costs in the prison industry. A beneficial avenue of study would be comparisons of recidivism rates between private and public prisons or prisons that offer rehabilitation services.

Considering the evidence presented in this study and that of previous literature, private prisons do not offer any cost savings for states when they are used. Other options should be pursued by state correctional departments when trying to reduce their expenditures. Property crime arrests and a state's poverty count are shown to affect correctional expenditures in this analysis. Lowering correctional expenditures has focused on capturing the private market with little real benefits experienced. Focusing on other factors, such as reducing property crime arrests or improving the benefits to individuals living below the poverty level, that can contribute to reductions in expenditures that are overlooked by policy makers.

References

Archambeault, W. and D. Deis. 1997. Cost Effectiveness Comparisons of Private Versus Public

      Prisons in Louisiana: A Comprehensive Analysis of Allen, Avoyelles, and Winn

      Correctional Centers. *Journal of the Oklahoma Criminal Justice Research Consortium* 4.

Banking on Bondage Private Prisons and Mass Incarceration. *American Civil Liberties*

      Union 2011: 1-57.

Berry, W., R. Fording, E. Ringquist, R. Hanson, and C. Klarner. 2010. Measuring Citizen and

      Government Ideology in the U.S. States: A Re-appraisal. *State Politics & Policy*

      Quarterly. 10: 117-135.

Carson, E. (2018, August 7). Prisoners in 2016. Retrieved from

      https://www.bjs.gov/content/pub/pdf/p16.pdf

Delaney, R. and C. Henrichson. 2012. The Price of Prisons: What Incarceration Costs Taxpayers.

      Vera Institute of Justice. 1-24.

Dippel, C. and M. Poyker. 2018. Do Private Prisons Affect Court Sentencing? Working Paper.

      Retrieved from

      https://www.anderson.ucla.edu/faculty_pages/christian.dippel/privateprisons_sentencing.

      pdf

Dudkin, G. and T. Valila. 2006. Transaction Costs in Public-Private Partnerships: A First Look

      at the Evidence. *Competition and Regulation in Network Industries* 1: 307-330.

Gillani, S., H. Rehman, and A. Rasheed. 2009. Unemployment, Poverty, Inflation and Crime

     Nexus: Cointegration and Causality Analysis of Pakistan. *Pakistan Economic and Social*

     Review 49: 79-98.

Gramlich, J. (2017, March 1). Most violent and property crimes in the U.S. go unsolved. *Pew*

     Research Center. Retrieved from https://www.pewresearch.org/fact-tank/2017/03/01/most-

     violent-and-property-crimes-in-the-u-s-go-unsolved/

Hart, O., A. Shleifer, and R. Vishny. 1997. The Proper Scope of Government: Theory and an

     Application to Prisons. *Quarterly Journal of Economics* 112: 1127-1161.

Hall, J. 1998. Private Opportunity, Public Benefit? *Fiscal Studies* 19: 121-140.

Henrichson, C., and R. Delaney. 2011. The Price of Prisons What incarceration Costs Taxpayers.

     VERA Institute of Justice. 1-28.

Kelly, M. 2000. Inequality and Crime. *The Review of Economics and Statistics* 82: 530-539.

Kim, Y. and B. Price. 2014. Revisiting Prison Privatization: An Examination of the Magnitude

     of Prison Privatization. *Administration & Society* 46: 255-275.

Kish, R. and A. Lipton. 2013. Do Private Prisons Really Offer Savings Compared with their

     Public Counterparts? *Economic Affairs.* 93-107.

Larson, P. (2018, August 25). Hawaii, Nevada, California (and maybe soon Puerto Rico) send

     inmates to Arizona. *Azcental.* Retrieved from

     https://www.azcentral.com/story/news/local/arizona/2018/08/25/arizonas-private-prisons-

     hold-hawaiians-californians-far-home/1089161002/

Lipton, B. (2017, March 16). Three states have banned private prisons. Is yours one of them?

    Muckrock. Retrieved from https://www.muckrock.com/news/archives/2017/mar/16/three-

    states-have-banned-private-prisons-yours-one/

List of major for-profit prison services and companies. (2016, June 5). Retrieved from

    https://www.prisonlegalnews.org/news/publications/list-major-profit-prison-services-and-

    companies/

Logan, C. and S. Rausch. 1985. Punish and Profit: The Emergence of Private Enterprise Prisons.

    Justice Quarterly. 2: 303-318.

Mason, C. 2012. Too Good to be True Private Prisons in America. *The Sentencing Project.* 1-25.

Mattera, P., M. Khan, G. LeRoy, and K. Davis. 2001. Jail Breaks: Economic Development

    Subsidies Given to Private Prisons. *Good Jobs First.*

McDonald, D., E. Fournier, M. Russel-Einhourn, S. Crawford, J. Nelson, G. Gaes, S. Camp, and

    W. Saylor. 1998. Private Prisons in the United State: An Assessment of Current Practice.

    Abt Associates Inc. 1-68

McDonald, D. and K. Carlson. 2005. Contracting for Imprisonment n the Federal Prison System:

    Cost and Performance of the Privately Operated Taft Correctional Institution. *Abt*

    Associates Inc. 1-151.

Mumford, M., D. Schanzenbach, and R. Nunn. 2016. The Economics of Private Prisons.

    The Hamilton Project.

Nelson, J. 2005. Competition in Corrections: Comparing Public and Private Sector Operations.

    The CNA Corporation. 1-148.

Office of Program Policy Analysis and Government Accountability. 2000. South Bay

  Correctional Facility Provides Savings and Success; Room for Improvement. *Oppaga*

  Private Prison Review Report No. 99-39.

Perkinson, R. (2010). *Texas Tough.* New York, NY: Picador.

Perrone, D., and T. Pratt. 2003. Comparing the Quality of Confinement and Cost-Effectiveness

  of Public versus Private Prisons: What We Know, Why We Do Not Know More, and

  Where to Go from Here. *The Prison Journal* 83: 301-322.

Pfaff, J. 2016. The Complicated Economics of Prison Reform. *Michigan Law Review* 114: 951-

  981.

Price, B. and N. Riccucci. 2005. Exploring the Determinants of Decisions to Privatize State

  Prisons. *American Review of Public Administration* 35: 223-235.

Raher, S. 2010. The Business of Punishing: Impediments to Accountability in the Private

  Corrections Industry. *Law School Journals at UR* 209.

Sadka, E. 2007. Public-Private Partnerships: A Public Economics Perspective. *Economic Studies*

  53: 466-490.

Sheets, C. (2017, April 8). How a private prisons corporation is creeping into Alabama.

  Alabama. Retrieved from

  https://www.al.com/news/2017/04/how_a_private_prisons_corporat.html

Sherman, A., D. Trisi, and S. Parrott. 2013. Various Supports for Low-Income Families Reduce

  Povert and Have Long-Term Positive Effects On Families and Children. *Center on*

  Budget and Policy Priorities. 1-19.

Sigler, M. 2010. Private Prisons, Public Functions, and the Meaning of Punishment. *Florida State University Law Review* 38: 148-178

Spivak, A., and S. Sharp. 2008. Inmate Recidivism as a Measure of Private Prison Performance. *Crime & Delinquency* 54: 482-508.

Watkins, M. (2017, November 16). Kentucky will reopen private prison despite past inmate sex abuse. *Louisville Courier Journal.* Retrieved from https://www.courier-journal.com/story/news/2017/11/16/kentucky-reopen-private-prison-despite-past-inmate-sex-abuse/867367001/

Williams, T. (2018, April 3). Inside a Private Prison: Blood, Suicide and Poorly Paid Guards. Retrieved from https://www.nytimes.com/2018/04/03/us/mississippi-private-prison-abuse.html

Appendix 1: Fixed Effects with Logged Variables

VARIABLES	(1) Logged Correctional Expenditures per Capita	(2) Logged Correctional Expenditures per Prisoner
Percent of Prisoners in Private Facilities	0.000730	-0.000558
	(0.00116)	(0.00143)
Percent Unemployed	-0.00737	-0.00432
	(0.00548)	(0.00661)
Percent of Population Living in Poverty	-0.00673***	-0.00961***
	(0.00236)	(0.00340)
Gini Index of Income Inequality (measured from 0, absolute equality, to 1, absolute inequality)	-0.134	0.0284
	(0.187)	(0.214)
Population per Square Mile	-0.00287***	0.00119
	(0.000877)	(0.00156)
Government Ideology (liberal - conservative spectrum from 1 to 100)	-0.000297	0.000342
	(0.000494)	(0.000659)
Violent Crime Arrests per Thousand Residents	-0.000955	0.000463
	(0.00516)	(0.00731)
Property Crime Arrests per Thousand Residents	0.00105**	0.00134***
	(0.000438)	(0.000399)

Violent Crimes per Thousand Residents	4.13e-05	-0.000766
	(0.00129)	(0.00167)
Property Crime per Thousand Residents	0.000801	4.48e-05
	(0.000575)	(0.000503)
Police Expenditure per Capita	0.532***	0.338**
	(0.0938)	(0.137)
Constant	2.882***	8.708***
	(0.515)	(0.772)
Observations	850	850
R-squared	0.761	0.605
Number of States	50	50

Appendix 2: State Private Prison Usage

From 1999 to 2015

Never Used Private Prisons	Phased Out Private Prisons
Delaware	Arkansas
Illinois	Kentucky
Iowa	Maine
Massachusetts	Michigan
Missouri	Nevada
Nebraska	Utah
New Hampshire	
New York	
Oregon	
Rhode Island	
West Virginia	

Appendix 3: Individual State Fixed Effects

VARIABLES	(1) Correctional Expenditures per Capita (Fixed Effects)	(2) Correctional Expenditures per Prisoner (Fixed Effects)
Percent of Prisoners in Private Facilities	-0.183	-25.12
	(0.321)	(82.34)
Percent Unemployed	-1.917**	-635.7*
	(0.854)	(339.5)
Percent of Population Living in Poverty	-1.004**	-548.8***
	(0.455)	(170.3)
Gini Index of Income Inequality (measured from 0, absolute equality, to 1, absolute inequality)	-12.28	-2,771
	(36.25)	(13,370)
Population per Square Mile	-0.519***	55.96
	(0.0930)	(44.23)
Government Ideology (liberal - conservative spectrum from 1 to 100)	-0.0583	84.38***
	(0.0765)	(26.03)

Violent Crime Arrests per Thousand Residents	-0.768	63.96
	(0.842)	(316.3)
Property Crime Arrests per Thousand Residents	0.286***	42.07*
	(0.0611)	(22.96)
Violent Crimes per Thousand Residents	-0.349*	-18.36
	(0.205)	(89.79)
Property Crime per Thousand Residents	0.0736	32.19
	(0.0876)	(37.23)
Police Expenditure per Capita	0.395***	100.5***
	(0.0458)	(16.03)
Alaska	65.65***	9,482
	(15.33)	(6,028)
Arizona	45.51***	13,201***
	(7.523)	(2,922)
Arkansas	22.76***	15,334***
	(5.221)	(2,279)
California	196.0***	28,090***
	(16.47)	(7,311)
Colorado	28.43***	23,002***
	(8.711)	(3,262)
Connecticut	347.8***	-32,668
	(58.65)	(27,915)
Delaware	294.4***	-17,568
	(34.36)	(15,486)
Florida	161.4***	-4,330
	(23.11)	(11,326)
Georgia	115.9***	14,214***
	(7.767)	(3,259)
Hawaii	42.01***	-3,672

	(14.42)	(5,785)
Idaho	5.053	21,842***
	(10.75)	(4,313)
Illinois	42.01***	-1,077
	(13.65)	(6,261)
Indiana	68.27***	13,209***
	(9.281)	(4,204)
Iowa	-27.72***	23,066***
	(5.551)	(2,372)
Kansas	-25.31***	25,639***
	(7.312)	(2,995)
Kentucky	58.81***	19,489***
	(5.202)	(2,081)
Louisiana	78.53***	124.2
	(5.805)	(2,094)
Maine	-21.99***	66,978***
	(6.138)	(3,025)
Maryland	339.7***	2,155
	(46.71)	(21,812)
Massachusetts	390.0***	28,477
	(68.29)	(32,942)
Michigan	127.4***	19,363***
	(8.321)	(3,946)
Minnesota	-31.03***	57,649***
	(6.541)	(3,253)
Mississippi	9.539	5,006**
	(8.379)	(2,506)
Missouri	-6.361	2,400
	(5.775)	(1,828)
Montana	8.562	34,317***
	(14.64)	(5,088)
Nebraska	-0.959	51,022***
	(8.216)	(3,654)
Nevada	15.21	17,880***
	(12.34)	(4,530)
New Hampshire	-10.23	25,531***
	(7.836)	(3,258)
New Jersey	595.3***	-24,438
	(100.6)	(47,773)
New Mexico	60.59***	55,236***
	(17.46)	(5,708)
New York	231.5***	30,132**
	(29.09)	(14,124)
North Carolina	79.42***	13,411***
	(9.761)	(4,284)
North Dakota	-59.57***	43,577***

	(9.016)	(4,346)
Ohio	108.9***	1,904
	(17.89)	(8,429)
Oklahoma	22.37**	6,178**
	(9.336)	(2,956)
Oregon	68.17***	43,623***
	(7.220)	(3,303)
Pennsylvania	183.0***	27,366***
	(18.03)	(8,462)
Rhode Island	483.0***	-30,501
	(85.73)	(41,326)
South Carolina	44.36***	5,776**
	(6.587)	(2,733)
South Dakota	-23.62***	22,309***
	(9.037)	(3,945)
Tennessee	37.72***	7,970**
	(8.096)	(3,117)
Texas	65.69***	8,322***
	(5.130)	(1,407)
Utah	-7.069	50,362***
	(7.912)	(3,335)
Vermont	4.524	26,393***
	(7.579)	(2,945)
Virginia	127.5***	15,515***
	(11.45)	(4,880)
Washington	80.68***	56,870***
	(4.519)	(1,933)
West Virginia	23.73***	30,151***
	(5.047)	(2,252)
Wisconsin	77.96***	28,560***
	(5.186)	(2,030)
Wyoming	91.53***	54,769***
	(18.80)	(6,033)
Constant	107.2***	160.4
	(20.57)	(8,325)
Observations	850	850
R-squared	0.929	0.917

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix 4: Between and Within Variation

Variable		Mean	Std. Dev.	Min	Max	Observations
Correctional Expenditures Per Capita	overall	194.8533	62.90263	62.97282	470.4931	N = 850
	between		54.84225	119.6233	349.1023	n = 50
	within		31.71356	71.71414	334.8657	T = 17
Correctional Expenditures per Prisoner	overall	51976.44	22349.32	14211.23	127068.9	N = 850
	between		20309.78	20583.03	103283.5	n = 50
	within		9735.425	17989.36	99556.44	T = 17
Percent of Prisoners in Private Prisons	overall	7.730118	11.06653	0	45.8	N = 850
	between		10.4327	0	42.81176	n = 50
	within		3.959554	-18.2817	28.41247	T = 17
Percent Unemployed	overall	5.746363	2.006991	2.3	13.60833	N = 850
	between		1.072426	3.277941	7.584804	n = 50
	within		1.702818	1.811559	12.12725	T = 17
Percent of Citizens Living in Poverty	overall	12.56906	3.406838	4.5	25.8	N = 850
	between		2.938262	6.441177	19.42353	n = 50
	within		1.770836	6.833764	19.38671	T = 17
Gini Index of Inequality	overall	0.45091	0.026604	0.383	0.519	N = 850
	between		0.020508	0.406906	0.502877	n = 50
	within		0.017179	0.401775	0.530939	T = 17
Population Density	overall	191.331	256.4966	1.085621	1218.348	N = 850
	between		258.7464	1.197694	1181.081	n = 50
	within		10.12499	117.5616	232.9602	T = 17

Government Ideology	overall	46.22189	15.40257	17.51221	73.61864	N =	850
	between		12.16064	24.16065	66.39219	n =	50
	within		9.599205	14.60332	77.18882	T =	17
Property Crime Arrests per Thousand Residents	overall	10.32317	22.13598	0	201.0014	N =	850
	between		16.96734	0.647563	108.1034	n =	50
	within		14.40612	-91.8233	103.2211	T =	17
Violent Crime Arrests Per Thousand Residents	overall	1.654629	1.339348	0	8.57552	N =	850
	between		0.684948	0.630871	3.458214	n =	50
	within		1.154791	-0.43119	8.506415	T =	17
Violent Crime per Thousand Residents	overall	3.97835	2.301519	0.222029	40.70155	N =	850
	between		1.50316	1.209326	6.879488	n =	50
	within		1.755016	-1.32964	39.85454	T =	17
Property Crime per Thousand Residents	overall	31.77711	10.27526	4.654275	96.04126	N =	850
	between		7.885669	16.09144	55.03825	n =	50
	within		6.676001	-1.16107	72.78012	T =	17
Police Expenditure per Capita	overall	244.6103	75.75834	87.39861	513.3558	N =	850
	between		60.68629	147.3445	403.2571	n =	50
	within		46.10755	123.1797	365.063	T =	17