Recidivism: An Analysis of Public and Private State Prison Releases in Florida

A Joint Study conducted by:

The Florida State University
William Bales, Ph.D., Laura E. Bedard, Ph.D., Susan T. Quinn, M.S.

The Florida Department of Corrections
David Ensley, Glen Holley

The Correctional Privatization Commission
Alan Duffee, Stephanie Sanford

December 2003

Introduction

Private prisons as an alternative to government-operated prisons have been at the forefront of public policy debate in corrections over the past two decades. According to the Bureau of Justice Statistics (Harrison and Beck, 2003), at yearend 2002, privately operated facilities housed 73,497 (5.8%) state prison inmates in 31 states. By comparison, in 1999, private prisons housed 67,380 (5.5%) state prison inmates in 31 states and the District of Columbia. While the total state inmate population grew 4.1% since 1999, the population of state inmates housed privately grew 9.1% and accounted for 12.7% of state prison population growth over the last three years. Nationwide, private prisons hold enough inmates to constitute the third largest state-level prison system, behind California and Texas.

Using data from Florida, the current study addresses the central question of whether inmates released from private prison recidivate less than those released from public prisons. A recent monograph published by the Bureau of Justice Assistance, summarized arguments in favor of private prisons in three categories: obtaining faster and cheaper bed capacity, lowering operational costs, and improving quality of service (Austin and Conventry, 2001).[1] Proponents of private prisons have argued that they may achieve more rehabilitation, as evidenced by lowering recidivism rates for their inmates. Austin and Coventry report that this argument includes an assertion that private prisons have incentives to improve rehabilitation to maintain funding support from legislatures (2001, p. 32). They also report that some evidence appears to support a recidivism-reduction claim (2001, p. 13). However, Austin and Coventry state that private prison providers have had little need to argue this claim and the lack of solid evidence for recidivism reduction has clearly not prevented the initial growth of private prisons.

Policymakers' interest in this argument for privatization is indicated, for example, by Florida statutes that authorize the state's Correctional Privatization Commission to contract for private prison services and require the Commission to submit a report to the presiding officers of the Legislature annually. The law states that, "…Each report must also include a comparison of recidivism rates for inmates of private correctional facilities to the recidivism rates for inmates of comparable facilities managed by the department."[2]

[1] See Austin and Coventry, 2001 for an extensive review of the current state of private correctional services.
[2] Section 957.03(4)(c), Florida Statutes, 2003.

As a result of this annual statutory requirement, the Florida Correctional Privatization Commission approached the Florida Department of Corrections (FDOC) and the Florida State University School of Criminology and Criminal Justice to collaborate in this research.[3] This effort harnessed the unique expertise, resources, and perspectives of these three organizations to conduct the study. This collaboration specifically enhanced the study's data quality standards, methodological rigor, and objectivity in both analysis and interpretation.

This study improves on previous work in three primary ways. First, significant advancements are made over how previous research has quantified exposure to private prisons and identified control groups of public inmates. Second, the number of cases studied is substantially larger. Third, this study provides more methodological rigor through the breadth of control variables used and the methods of establishing comparability between the public and private release cohorts on factors known to influence recidivism rates.

Prior Studies of Private/Public Inmate Recidivism

The paucity of literature on whether the private sector is more successful than the public sector in rehabilitating prison inmates, as measured by reducing recidivism, is apparent (Austin and Coventry, 2001). To date, only three prior studies have compared the recidivism rates of private versus public prison inmates.[4] While their results have not been consistent, prior research has indicated that at least some inmates released from private prisons recidivated somewhat less than inmates released from public prisons. These studies were all conducted using data from the FDOC.

Lanza-Kaduce, Parker and Thomas (1999) compared the recidivism of men released from private prisons and those released from public prisons in the state of Florida. The sample consisted of 396 males released from prison between June 1, 1996 and September 30, 1996; half were from public prisons, the other half were from private facilities. All of the subjects were classified by the FDOC as minimum or medium custody level at the time of release (close custody inmates were excluded). Inmates were defined as public or private according to the type of facility from which they were released, which included two private prisons and seven public

[3] Special acknowledgement should be made of the leadership support for this work provided by the Correctional Privatization Commission and the FDOC Secretary.
[4] Farabee and Knight, 2002; Lanza-Kaduce *et al.*, 1999; Lanza-Kaduce and Maggard, 2001.

prisons. Four recidivism measures were used: subsequent arrest, felony conviction, imprisonment for technical violation, and imprisonment for new offense. Recidivism data were collected for the 12 months following release.

Lanza-Kaduce *et al.* (1999) matched pairs of private and public inmates from the sample based on offense, race, prior record, and age. They achieved 149 pairs exactly matched on this important, but limited set of criteria, and 198 pairs matched by relaxing the age criterion. Analyzing these matched pairs in the aggregate, they found that releases from private prisons recidivated significantly less, using a sign test, than those released from public institutions on three of the four recidivism measures. Specifically, within 12 months following release, 10% of the private inmates were arrested compared with 19% of the public inmates; 6% of private inmates were convicted compared with 10% of public inmates; and 10% of private inmates were imprisoned for new offenses compared with 14% of public inmates. The authors found no significant difference between private and public inmate re-imprisonment for technical violations. In addition, using an aggregated measure for any indicator of recidivism, they found 17% of private inmates recidivated compared with 24% of public inmates.

In a subsequent study, Lanza-Kaduce and Maggard (2001) re-analyzed the same inmate pairs and recidivism measures from the 1999 study, extending the follow-up period through 48 months after release. In that study, the authors reported only one recidivism measure, imprisonment for either a technical violation or a new offense. Consistent with their earlier finding, they found that inmates released from private prisons recidivated at a lower rate than those released from public prisons over the longer follow-up period. Contrary to their earlier finding, however, this difference was at, best, marginally statistically significant ($p<.10$) based again on a sign test for matched pairs and only for a smaller, best matched subset (149 cases).

Farabee and Knight (2002) studied inmates released from FDOC between January 1, 1997 and December 31, 2000. The included inmates were released directly from public or private prisons. Inmates could not have been released to a detainer, but could be released at minimum, medium or close custody levels (n=8,848). The authors defined inmates as public or private by whether they had spent the last six months prior to release in a public or privately operated facility. For example, an inmate who was transferred to a private facility from a public facility three months prior to release was excluded. The basis for this exclusion criterion is the theoretical viewpoint, grounded in much program evaluation literature, that exposure to

correctional programs for less than six months is unlikely to achieve a recidivism reduction benefit.

Farabee and Knight (2002) created a "matched" sub-sample using factors found to be significantly associated with recidivism in a FDOC (2001) study that analyzed the association between certain variables and recidivism. The authors matched public and private inmates on their commitment offense, custody level at release, race, age at release, education level, prior recidivism, the number of months served in prison, and the number of months since their release from prison. In presenting their results, they divided subjects into three groups; adult males, adult females, and youthful offender males.[5] Inmates from public prisons included 4,912 adult men, 612 adult women, and 1,945 youthful offender males, and were compared to 2,341 adult men, 983 adult females, and 314 youthful offender males from private prisons.

Recidivism was defined in two ways: conviction for a new offense and incarceration for a new offense. The follow-up period for their study was three years after release. To compare the recidivism rates of the private inmates (treatment group) and public inmates (control group), the authors used a proportional hazard regression model, controlling for the same factors used to match the two groups. The data revealed that adult males released from public prisons and private prisons displayed rates of re-offense and re-imprisonment that were not statistically significantly different. In contrast, adult females released from private prisons had significantly lower rates of re-offense and re-incarceration than adult females released from public prisons over the three-year period ($p<.05$) (Farabee and Knight, 2002). They found women released from private facilities were 25% less likely to re-offend and 34% less likely to be re-incarcerated than female inmates released from public facilities. For youthful offender males, no significant differences were found in recidivism rates for public versus private inmates.

The current research makes several methodological improvements over the Lanza-Kaduce, *et al*. (1999) and Farabee and Knight (2002) studies. First, the method of measuring the critical private versus public prison experience is advanced. The first study compared inmates released directly from a private prison with those released back into the community from a public facility with no consideration given to the length of time spent in each type of facility (Lanza-Kaduce, Parker, and Thomas, 1999). This measure of the private prison effect has

[5] Youthful offenders are inmates sentenced by the courts under Florida's Youthful Offender statute or those that the FDOC designates as Youthful Offenders based on various age, sentence length, prior prison commitments, and felony degree of their most serious committed offense.

methodological problems. First, it results in a smaller case size for the treatment group, which may limit the reliability of recidivism rate estimates and the significance of their differences from a control group. Second, it does not quantify the amount of time in either, or both, private and public prisons. An analysis of the cases used in the Lanza-Kaduce, *et al*. study conducted by the FDOC,[6] found that of the 198 inmates the researchers identified as private prison inmates, 69 (35%) had also been incarcerated in a public prison, other than a reception center. Of these 69 "private" inmate cases that had both private and public prison time, 52 (75%) served more time in a public facility than in a private facility. This clearly shows that this early study did not adequately measure exposure to private prisons, by failing to exclude inmates exposed to both private and public prisons.

The second study was more refined in its measurement of the experimental effect (Farabee and Knight, 2002). This study, first, analyzed only inmates who had spent at least six months in the facility from which they were released to the community. Despite a theoretical basis for this method, from evaluations of correctional programs in the literature, it is not clear that this particular time limit rather than a longer one (e.g., 12 months) would be more appropriate when analyzing exposure to private prisons. Second, inmates were defined as having the private prison effect only if they were released from a private prison facility and met the first criterion. However, inmates who spent a substantial portion or length of their total prison time in a private prison but were transferred to a public prison just prior to release for medical reasons, to transfer closer to their release destination, etc., were excluded from the study. Whether excluding these cases from the final analysis resulted in any biased findings is unknown. Further, inmates who served significantly more than six months in a public facility but were released directly from a private facility after serving six months there would be defined as private inmates when in fact their public prison experience was more extensive. Though Farabee and Knight (2002) certainly improved on the method of identifying public versus private inmates over Lanza-Kaduce *et al.* (1999), there is simply not sufficient extant research to rely on only a single definition and measurement of exposure to private prisons.

The current study addresses the concerns above and improves on the methodological issues of the two previous studies. For this study, three concepts relating to the experimental effect of the private prison experience were used to guide the development of six different

[6] FDOC, 1998.

experimental measures. First, whether inmates were released directly from a private versus a public prison facility, regardless of the differentials in time served in each facility type. Second, the level of purity in the experimental effect measured by the time served, as actual time or percent of total time, in private prisons. Third, experimental measures that required specified periods of duration and percentages of total prison time in a private prison.

The purpose of employing differing measurements of the experimental group of inmates serving time in private prisons is threefold. First, there is minimal theoretical basis for preferring one method of quantifying a private prison experimental group. Using multiple definitions of the treatment group prevents concluding that an effect does or does not exist based simply on the choice of treatment group definition. Second, the consistent presence or absence of an effect derived from more than one definition of the treatment group will lend weight to the research conclusions. Third, if only one of several treatment group definitions yields an effect, the nature of the experimental group definition may explain what aspect of exposure to private prisons accounts for the effect. Such information, from an empirically-driven analysis in the present study, may then better guide future research on the effectiveness of private prisons.

Data Source

Data for the current study was extracted from the FDOC's Offender Based Information System (OBIS). OBIS contains detailed offender characteristics, sentencing, and correctional experience data on all felony offenders sentenced to state prison or a state supervision term. Each offender is assigned an offender identification number that is used for all commitments to the FDOC. Data exists for all offenders who have been sentenced to prison or supervision since 1980. Therefore, detailed prior and subsequent conviction and sentencing information is available for cohorts of prison releases since that time.

Additionally, the OBIS system contains detailed information on every movement, and the associated dates and times of movements, of offenders in and out of the correctional system, and between correctional facilities. This data is used by the system to manage and account for inmates at all times and is therefore complete and accurate. Comprehensive information relating to every sentencing event including the offense and sentencing dates, type of sentences, and the convicted offense(s) are also contained in OBIS. In addition, data on demographic variables,

disciplinary infractions, classification decisions, and scores on the Tests of Adult Basic Education (TABE) are captured in the database.

To measure recidivism and account for effects of factors known to influence recidivism rates, this study relied on a comprehensive data file developed previously by the FDOC's Bureau of Research and Data Analysis (FDOC, 2003). That data includes 88,678 releases for 81,737 inmates released from July 1995 through June 2001, for which no data was missing on important inmate characteristics relevant to recidivism.[7] The 74,467 males inmates account for 80,919 releases, and 7,270 females inmates account for 7,759 releases. Only first releases are counted for each prison commitment. Releases subsequent to a return to prison for technical violation of supervision conditions are not treated as additional releases, since this would artificially lower the recidivism rate.

For this research, new data were extracted from FDOC's data files to create multiple treatment and control groups from among inmates based on their levels of exposure to private prisons in order to analyze differences in recidivism rates. These experimental group definitions relied primarily on detailed data on inmate movements from FDOC reception centers through public and private prisons and other department facilities. Within and for each prison commitment, these data allow determination of the type of facility inmates were released from, the length and percentage of prison time spent in private prisons, and the proximity of exposure to private prisons and an inmate's release.

Recidivism Measures

Definitions of recidivism in past studies have varied. Generally, recidivism has been measured as arrest, conviction, or imprisonment during a specified period of time following release from correctional custody. Variations in the definition of recidivism affect the results. Re-arrests, for example, are more likely to occur than re-conviction or re-imprisonment since re-arrest may not lead to re-conviction and re-conviction may not lead to re-imprisonment. Also, re-arrest and re-imprisonment can be due to technical violations, which will increase their numbers in comparison with re-conviction for a new offense. Traditionally researchers use a limited

[7] Virtually all excluded cases were missing scores on the Tests of Adult Basic Education because they did not take the test. The Department's analysis indicates these missing cases had recidivism rates somewhat lower than the retained cases.

amount of post prison release follow-up time, ranging from a few months to a number of years. Consistent with most contemporary recidivism research, this study analyzes the length of time to recidivism and the patterns in that time to failure for the treatment and control groups.

Following the FDOC's recidivism measurements and rate analysis, this study employs two recidivism measures, re-offense and re-imprisonment. Re-offense is measured as the number of months from prison release to the first felony offense. Re-imprisonment is measured as the number of months from prison release to first re-admission to prison for an intervening offense. Both measures require a conviction for a new offense to have occurred and that the conviction result in either a prison or supervision sentence to the department.

The length of time to re-offense or re-imprisonment can be artificially long for those inmates who return to prison for a technical violation of post-release supervision. The FDOC accounts for this "not at risk time" by reducing the follow-up time by the number of months spent back in prison for a technical violation. Likewise, the recidivism measures used in this study are adjusted to exclude not at risk time. For the subset of inmates who had post release time in prison for technical violations, both the follow-up time and the time to failure represent the true number of months at risk for recidivating.

Control Variables

The variables used in this study to establish equivalency between public and private prison comparison groups through statistical controls are ones the FDOC identified, from an extensive list of over 100 initial variables, as having meaningful and unique influences on the likelihood of recidivism. The 17 control variables selected were captured directly from FDOC's OBIS or were created from these data.[8] By controlling for this larger set of statistically independent variables that influence recidivism, the present study improves substantially over Lanza-Kaduce *et al.* (1999) and moderately over Farabee and Knight (2002).[9]

Control variables used in this study met two criteria: 1) factors for which FDOC has reliable data, and 2) factors found to be significant recidivism predictors in prior studies. They

[8] FDOC, 2003.

[9] Farabee and Knight also relied on FDOC data for their analysis. However, since that research (FDOC, 2001), the department has expanded its recidivism predictors, including more complex measures of offense history and new measures of ethnicity and post-release supervision (FDOC, 2003).

include both individual and institutional characteristics and time factors. At the individual level, characteristics include race,[10] gender,[11] age,[12] and the inmate's level of education.[13] Other factors found to be associated with recidivism include offense history,[14] inmate custody level at the time of release,[15] disciplinary history,[16] prior recidivism,[17] and post-release supervision.[18] Time factors include the amount of time served in prison[19] and the amount of time since release. However, time since release is not used as a recidivism predictor in this analysis because it forms the recidivism measures used.

The control variables and how they were created are as follows:

Age at Release – the age of the inmate at prison release in years based on the offender's date of birth and release date.

Race – dichotomized as Black (1) or Non-Black (0).

Ethnicity – dichotomized as Hispanic (1) or Non-Hispanic (0).

Prior Recidivism – the number of times an inmate has been released from Florida's prisons in the past and subsequently committed a new offense leading to a state prison or supervision commitment, measured by comparing release dates and offense dates.

Custody Level – the level of custody assigned to the inmate at the time of their prison release (close, medium, minimum, and community). Custody level is based on several measures relating to the inmate's current and prior offenses, sentence length, and institutional conduct yet appears to have some effect on recidivism independent of offense history, length of prison stay, and disciplinary reports received. The FDOC's analysis groups custody levels for recidivism analysis: High – if they were close custody at release (0=No, 1=Yes); and Low – if they were community or minimum custody at release (0=No, 1=Yes).

Months in Prison – the number of months between prison admission and release dates.

---

[10] Anderson *et al.*, 1991; Beck and Shipley, 1989; FDOC, 2003; Harer, 1995a; Langan and Levin, 2002; Maguire *et al.*, 1988; WSDOC, 2002.
[11] Beck and Shipley, 1989; FDOC, 2003; Kim *et al.*, 1993; Langan and Levin, 2002; WSDOC, 2002.
[12] Batiuk *et al.*, 1997; Beck and Shipley, 1989; FDOC, 2003; Harer, 1995a; Kim *et al.*, 1993; Langan and Levin, 2002; Smith and Polsenburg, 1992; Uggen, 2000; WSDOC, 2002.
[13] Beck and Shipley, 1989; FDOC, 2003; Harer, 1995b; Maguire *et al.*, 1988; Ulmer, 2001.
[14] Beck and Shipley, 1989; Harer, 1995a; Langan and Levin, 2002; Maguire *et al.*, 1988.
[15] Farabee and Knight, 2002; FDOC, 2003.
[16] FDOC, 2003; Harer, 1995a; Maguire *et al.*, 1988.
[17] FDOC, 2003; Harer, 1995a; Schmidt and Witte, 1988; Smith and Polsenberg, 1992; Uggen, 2000.
[18] FDOC, 2003; Harer, 1995a; Jernigan and Krosnick, 1992.
[19] FDOC, 2003; Maguire *et al.*, 1988; WSDOC, 2002.

Total Disciplinary Reports – The number of disciplinary actions against inmates that occurred between their admission and release.

Last TABE Grade –The last total battery TABE score received prior to prison release was used in this study.

Supervision – This variable originates from the FDOC supervision movement data, where inmates were admitted to community supervision about the time they were released from prison. This was quantified as a dichotomous variable (0 = No post-prison supervision, 1 = Post-prison supervision).

Criminal History – Three control variables quantify certain offenses in an inmate's history. These count the total number of convicted offenses in the inmate's record within each category: drug, property, and weapons offenses. Five control variables classify an inmate's offense history: if the most serious prior convicted offense was for a homicide, sex/lewdness offense, robbery, burglary, or other violent offense (five dichotomous variables with 0 = not most serious type, 1 = most serious type).

Dataset Limitations

The analysis dataset includes three limitations, acknowledged by the FDOC,[20] but ones that should not impair their use in this study. First, some inmates released from prison in Florida who commit subsequent felonies are sentenced to local jails rather than returned to the department's jurisdiction. Felonies committed by these offenders do not appear in the recidivism analysis dataset. Based on analysis of data from another source that includes data on most felony sentences to jail, the FDOC reports: "At most, including jail data would raise the re-offense rate estimates by an average of 1.2 points with a maximum increase of 1.6 points in the 3-year range. This minimal effect reflects the low probability that former prison inmates are sentenced to jail instead of prison for subsequent felonies."

Second, inmates released out-of-state are removed from the analysis. This is necessary because the FDOC does not have access to corrections data from other states. The department notes that, "Using only Florida data to determine whether an inmate who was released out-of-state re-offended and returned to the department's custody would skew the recidivism rates

[20] FDOC, 2003.

lower." However, based on estimates of out-of-state arrests reported by the U.S. Bureau of Justice Statistics and the ratio of reconvictions to arrests, the FDOC reports that including releases outside Florida would "increase these re-offense rate estimates by an average of .85 points, with a maximum of 1.3 points at 60 months."

A third limitation is that inmates who die subsequent to release are not excluded from the analysis. However, post prison release deaths within 60 months occur in a small minority of cases, and are unlikely to affect rates substantially. Since this research focuses on comparing recidivism rates between inmates housed in public and private facilities, the only way these data limitations could bias the results is if the likelihood of jail sentences for new offenses, out-of-state releases and re-convictions, or post-prison death are different for public and private prison inmates. The authors are unaware of any theoretical reason why these factors would differ between the treatment and control groups analyzed for this study.

Experimental and Control Group Selection

As mentioned above, previous studies have limited the method of identifying public versus private inmates to only those released directly from one of the two types of facilities, regardless of the length of time spent in either or both types (Lanza-Kaduce, *et al*., 1999) and to those released directly from each facility type after spending at least six months at that facility (Farabee and Knight, 2002).

The current research essentially replicates the experimental measures used in these studies and builds four additional measures to quantify the level of exposure to public and private prisons. Comparisons in recidivism rates between public and private inmates, as defined in the six measures, were conducted for this research. This resulted in defining and quantifying six different measures and, therefore, six different groups of pubic and private inmates as detailed in Table 1. Similar results across the six experimental measures should increase confidence in results from this analysis. Different results across the six measures will depend solely on the treatment group definitions, which may shed light on why public or private prisons result in lower recidivism rates.

Table 1
Experimental and Control Group Definitions

Analysis Group	Treatment Group Definition	Control Group Definition	Excluded Cases
A1	Released directly from a private C.I. (Lanza-Kaduce, *et al*., 1999)	Released directly from a public C.I.	Excludes inmates released from Work Release Centers, Road Prisons, Contract Drug Facilities, Boot Camps, and Work/ForestryCamps.
A2	Released directly from a private C.I. and served at least 6 months in private C.I. (Farabee-Knight, 2002 study for CPC)	Released directly from a public C.I. and served at least 6 months in public C.I.	Excludes inmates released from WRCs, Road Prisons, Contract Drug Facilities, Boot Camps, Work/Forestry Camps, those with very short periods of incarceration, and those that spent their time in facilities other than C.I.s.
B1	Served only in reception center, private C.I., and/or work release center. No time spent in public facilities, except reception and possibly work release center.	Served only in reception center, public C.I./Work/Forestry Camp/Road Prison, and/or work release center. No time spent in private C.I.	Excludes inmates that spent time in both public and private facilities.
B2	Served only in reception center, private C.I., and/or work release center, **or** served at least 75% of time in private C.I.	Served only in reception center, public C.I./Work/Forestry Camp/Road Prison, and/or work release center, **or** served at least 75% of time in public C.I./Work/Forestry Camp/Road Prison.	Excludes inmates that spent some time in both private and public facilities, but less than 75% of their time in either specific type of facility.
B3	Served only in reception center, private C.I., and/or work release center, **or** at least 12 months at private C.I. and less than 12 months at public C.I.	Served only in reception center, public C.I., and/or work release center, **or** at least 12 months at public C.I. and less than 12 months at private C.I.	Excludes inmates with time in both private and public C.I. if time spent in either is less than 12 months (i.e., excludes mixed cases with short periods of incarceration).
C1	At least 12 months in private C.I. **or** at least 75% of time in private C.I.	Less than 12 months and less than 75% of time in private C.I.	No inmates excluded.

Three Prison Release Cohorts

There are three types of private prisons in Florida that serve unique populations: adult male, adult female and youthful offender male facilities. Following the approach of Farabee and Knight, the analysis conducted for this study examines the question of whether differences in recidivism rates exist across privately and publicly operated prison within each of these three offender types. Table 2 depicts the private prisons operated for each the three offender types and the total and average annual releases from private prisons during the study period. All releases beginning with the month the private inmate was released within each of the three offender types were selected. The adult male cohort includes all men released beginning in August 1995, when Moore Haven Correctional Facility released the first male inmate.[21] The adult female cohort includes all women released beginning in May 1995, when Gadsden Correctional Facility released the first adult female inmate. The youthful offender male cohort includes releases from May 1997 when the first offender was released from the Lake City Correctional Facility, the only private facility designated as a male youthful offender institution.

Table 2
Private Prisons Operating in Florida*

Population Served	Facility Name	Year Opened	Security Level	Population on June 30, 2003	Total Releases through June 30, 2003 **	Average Annual Releases***
Adult Male	Bay C.F.	1995	Medium	746	2,803	350
Adult Male	Moore Haven C.F.	1995	Medium	751	3,106	388
Adult Male	South Bay C.F.	1997	Close	1,316	1,243	207
Sub Total				2,813	7,152	945
Adult Female	Gadsden C.F.	1995	Medium	983	3,619	452
Youthful Offender Male	Lake City C.F.	1997	Close	349	841	140
Total				4,145	11,612	1,537

* Release data count only the subset that are first permanent releases and, therefore, appropriate for recidivism analysis.
** Permanent releases directly from facility.
*** Based on direct releases from facility per full year of operation.

[21] The higher percentage of private prison releases among females reflects the higher percentage of total female beds in private prison. For example, on June 30, 2001, 21.0% of all female beds were private, while only 4.4% of all male beds were private.

Table 3 displays the number of inmate releases included in each of the three offender types for each of the six treatment definitions. Note that the treatment groups may be larger than the direct releases reported in Table 2 due to the way each analysis group is defined.

Table 3
Number of Releases in Cohorts by Offender Type and Treatment Definition

Analysis Group	Adult Males		Adult Females		Youthful Offender Males	
	Treatment	Control	Treatment	Control	Treatment	Control
A1	3,553	48,744	1,866	3,631	450	3,633
A2	2,793	38,583	1,332	2,702	376	3,023
B1	2,993	58,342	640	4,714	396	3,896
B2	3,176	65,483	1,447	5,066	631	4,203
B3	3,306	66,199	1,133	5,395	474	4,507
C1	3,562	71,276	1,712	6,047	439	4,189

This research does not comparatively evaluate recidivism rates from individual private prisons for three reasons. First, the focus of this research is not on the relative performance of individual prisons' recidivism rates. Addressing that question properly would require data collection on facility characteristics and operational methods that are out of the scope of this study. Second, significant numbers of releases from the South Bay and Lake City facilities did not occur until FY1997-98, therefore, the number of cases for these facilities are too few to provide sufficiently reliable estimates for such comparisons. Third, these facilities are operated by more than one corporation and the Gadsden vendor has changed since it opened. Comparable data for facilities have not been collected on services provided, such as education, training, and treatment programs, which reduce recidivism rates according to some literature.[22]

Statistical Analysis

A post-hoc quasi-experimental design was used in this study to compare recidivism rates of inmates exposed to private prisons with comparable inmates without such exposure. This

[22] For a review, see Gendreau *et al.* 1996. For an example, see Harer, 1995b.

design is "post-hoc" in the sense that data is captured after prison release rather than tracking inmates as they enter the prison system and identifying whether they were ultimately private or public inmates and then tracking their post prison recidivism outcomes. This approach is particularly well-suited for research testing for effects using multiple measures of exposure to a treatment, especially without *a priori* knowledge of what kind or level of exposure to private prisons might generate a recidivism reduction effect. This method is "quasi-experimental" in that it does not involve the random assignment of inmates to a control (public) and experimental (private) group followed by identifying their post-prison release outcomes. However, substantial statistical controls for factors known to influence inmate recidivism rates were employed in the analysis.

Two statistical procedures were used to estimate treatment and control group recidivism rates over a 5-year follow-up period and evaluate whether experimental groups' exposures to private prisons affected the likelihood of recidivism. Because the dependent variables are defined as time to failure (i.e., recidivism), techniques appropriate for survival models were selected. First, for each treatment and control group, a SAS© lifetest procedure[23] was employed to compare the two estimated recidivism rate curves over the follow-up periods and assess whether they differed to a statistically significant degree. Second, a proportional hazard regression procedure was used to estimate recidivism rate differences between each treatment and control group, while controlling for several major factors measurable prior to prison release.

Three specific analyses were conducted in this study to describe the populations studied, examine differences in recidivism rates before controlling for relevant factors, and assess whether public and private inmates have different rates of recidivism when equivalency of the groups is established. All comparisons were made using both re-offense and re-incarceration rates.

Descriptive Statistics – The distribution of cases within each of the three offender types (adult males, adult females, and youthful offender males) on each of the control variables (age at release, race, prior recidivism events, etc.) are presented. The purpose of this analysis is, first, to

[23] The procedure generates nonparametric estimates of the survival distribution functions (recidivism rates over follow-up time) for the treatment and control groups using the Kaplan-Meier method and accounts for censored cases (those having less follow-up time). The procedure computes three statistics, including the Wilcoxon test, for determining whether the two recidivism rate functions are statistically different.

provide an overall perspective of the characteristics of the three offender groups. Second, comparisons will be made on control variables that have been found to predict inmate recidivism. This demonstrates whether and the extent to which public and private prison groups differ on characteristics known to result in lower or higher rates of recidivism and indicates where controlling for these variables is important.

Base Recidivism Rate Comparison – Without controlling for relevant factors such as age at release, prior recidivism events, etc., estimates of the recidivism rates for each treatment and control group were generated using a SAS© lifetest procedure. Both Wilcoxon and log-rank tests were used to test for significant differences in the estimated rate curves over the entire follow-up period. For convenience, only the point estimates at selected intervals are displayed with the Wilcoxon test statistic results for the entire rate curve comparisons.

Mutivariate Survival Analysis – This analysis will address the question of whether there are meaningful and statistically significant differences in the recidivism rates between the public and private inmates when holding constant factors known to affect the likelihood of recidivism. The presence or absence of a difference in the base recidivism rates of public and private prison inmates may depend on differences between these groups in recidivism-predictive characteristics, rather than the exposure to private prisons.

To account for measurable differences in the treatment and control groups, proportional hazard regression models using these factors as covariates were analyzed. These models establish the effects of covariates on time to recidivism as multiplicative—each covariate is interpreted as increasing the recidivism rate (hazard rate) by an amount or percentage, given equivalence on all other covariates in the model. The inability to achieve a significant effect for a covariate justifies excluding that variable as a needed control; and conversely, a covariate's significant effect requires its inclusion as a control factor for further recidivism analysis. Including in these models a dichotomous variable that distinguishes the treatment and control groups allows a significant difference between the groups, attributable to exposure to private prisons, to arise if present and will measure the size of that effect.

These models were run with stepwise selection methods, allowing covariates including the treatment measure to enter the model where appropriate to account for recidivism variation.

Each model was run twice, once with a normal probability (.05) of entering the model and again with a more lenient selection criterion (.15). For variables entering each model, coefficients and their associated probability values are reported.

Results

The sections below review separately the analyses for each of the inmate population sub-groups: adult males, adult females, and youthful offender males. Each section follows the same pattern, beginning with base recidivism rate estimates for each treatment-control group comparison. It is instructive to compare the recidivism rates for public and private adult male inmates within the six methods of identifying the two groups without control variables.

Then differences between the treatment and control groups on recidivism-related factors are reported. Although six different methods of identifying public versus private inmates were examined, the differences in the adult male private and public group on these descriptive statistics are, with some exceptions, reasonably consistent across the six measures. For brevity only one of the treatment-control group measures is reported for the descriptive analysis of factor differences. The purpose of examining basic differences in the public and private inmates on variables known to influence recidivism rates, regardless of the types of facilities they were housed in, is to provide a general sense of the characteristics of the inmates in both groups and to demonstrate that controlling for these factors is important. To best achieve this, factor differences for the purest measure (definition B1) of treatment and control groups are reported.

The proportional hazard regressions controlled for all continuous variables (e.g., age, number of disciplinary reports, months in prison, etc.) as such. The descriptive statistics tables display these factors in categories only to facilitate reporting. The proportional hazard model results displayed are those from the treatment and control comparison groups when all factor effects, including a dichotomous variable for the treatment-control group effect, were entered. These models for the adult male and adult female sub-groups yielded effect sizes and significance levels for the factors similar to those reported for by the FDOC. The department reports no data on these effects for

youthful offenders, so a comparison of these effects on this sub-group is not possible. These models were also run using a stepwise selection method (entry p<.05) to verify that the treatment effect variable does not enter the models.

Results: Adult Males

Table 4 presents the base recidivism rates using the re-offense measure generated from the SAS© lifetest procedure described earlier with follow-up periods of six months to sixty months. These data show that, in the short term through an eighteen months follow-up period, the re-offense rates of public and private adult male inmates are virtually identical within all six of the outcome measures. In the longer follow-up periods of thirty-six months and sixty months, private adult male inmates have higher re-offense rates within four of the six groups (A1, B1, B2, and B3) and are the same as the public adult male inmates in the A2 and C1 groups. However, none of these re-offense rate differences are statistically significant at the p<.05 level.

Table 4
Adult Males: Re-Offense Recidivism Rates with No Controls for Explanatory Variables

	Treatment Effect Measurement Group											
	A1 Group		A2 Group		B1 Group		B2 Group		B3 Group		C1 Group	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Number of Cases	48,744	3,553	38,583	2,793	58,342	2,993	65,483	3,176	66,199	3,306	71,276	3,562
Follow-Up Period												
6 Months	13.3%	12.7%	13.3%	12.6%	12.3%	11.9%	12.3%	12.0%	12.3%	12.0%	12.5%	12.2%
12 Months	22.6%	22.3%	22.5%	22.1%	21.0%	21.5%	21.0%	21.6%	21.1%	21.4%	21.4%	21.3%
18 Months	29.4%	29.3%	29.2%	28.8%	27.5%	28.7%	27.6%	28.6%	27.7%	28.4%	28.1%	27.7%
24 Months	34.4%	34.9%	34.1%	34.5%	32.3%	34.6%	32.5%	34.4%	32.5%	34.2%	33.0%	33.1%
36 Months	41.9%	45.1%	41.7%	41.6%	39.4%	42.3%	39.7%	42.1%	39.7%	42.1%	40.3%	40.4%
48 Months	46.8%	48.2%	46.4%	47.9%	44.1%	47.9%	44.4%	47.8%	44.4%	47.7%	45.2%	46.5%
60 Months	49.9%	51.3%	49.5%	51.1%*	47.3%	50.9%	47.7%	50.7%	47.7%	50.7%	48.4%	49.8%

None of the recidivism rate differences were statistically significant at the p<.05 level (Wilcoxon Test).
* 59 months.

Re-imprisonment rates are displayed in Table 5, prior to controlling for relevant factors, for the public and private adult male releases within each of the six methods of identifying the two types of inmates. Overall, public adult male inmates have slightly higher re-imprisonment

rates; however, only four of the possible thirty-six differences are higher than 2.0% (Groups A2 and C1 for thirty-six months, Group A2 for 48 months, and Group A1 for 56 months) and none are over 3.0%. Additionally, none of these re-imprisonment rate differences between public and private adult male inmates are statistically significant at the p<.05 level.

Table 5
Adult Males: Re-Imprisonment Recidivism Rates with No Controls for Explanatory Variables

	Treatment Effect Measurement Group											
	A1 Group		A2 Group		B1 Group		B2 Group		B3 Group		C1 Group	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Number of Cases	48,744	3,553	38,583	2,793	58,342	2,993	65,483	3,176	66,199	3,306	71,276	3,562
Follow-Up Period												
6 Months	10.1%	9.8%	10.9%	9.7%	9.1%	8.6%	9.1%	8.6%	9.2%	8.6%	9.3%	8.9%
12 Months	16.9%	16.2%	17.2%	15.9%	15.5%	14.8%	15.6%	14.8%	15.6%	14.9%	15.7%	14.8%
18 Months	21.6%	20.9%	22.1%	20.6%	200.0%	19.4%	20.2%	19.3%	20.2%	19.2%	20.4%	18.8%
24 Months	25.0%	24.2%	25.2%	23.5%	23.1%	23.0%	23.4%	22.8%	23.4%	22.7%	23.7%	21.9%
36 Months	29.8%	28.2%	30.4%	27.5%	27.7%	27.3%	28.0%	26.9%	27.9%	26.9%	28.3%	25.8%
48 Months	32.4%	30.2%	32.9%	29.8%	30.1%	29.0%	30.4%	28.7%	30.3%	28.6%	30.7%	27.7%
56 Months*	33.2%*	30.8%*	na	na	30.8%*	29.7%*	31.2%*	29.3%*	31.1%*	29.3%*	na	na

None of the recidivism rate differences were statistically significant at the p<.05 level (Wilcoxon Test).
* No comparison group had estimates for longer than 56 months.

Table 6 displays the distributions of the private and public adult male inmates on the eighteen variables used in the final survival models to answer the question whether recidivism rates differ between the two groups. The demographic characteristics of age at release, race, and ethnicity, across the public and private adult male inmates are virtually the same. In contrast, public adult male inmates are somewhat more likely to have more prior recidivism events than private inmates (average: public = 1.2; private = 1.1) and are considerably more likely to be released as close custody inmates (public = 17.0%; private = 1.1%). Public adult male inmates are also much more likely to spend longer lengths of time in prison (average months: public = 31.3; private = 16.8) and have more disciplinary problems while in prison (average disciplinary reports: public = 2.9; private = 0.8). The median TABE score for public adult male inmates is slightly lower than for private adult male inmates (7.1 versus 7.6) and they are considerably more likely to be released to some form of post-prison supervision (36.9% versus 23.4%). In terms of their most serious crime type, public adult male inmates are more likely to have committed a homicide, sex/lewd offense, or a robbery than private inmates. However, the two

groups are very similar in terms of their total number of convictions for property, drug, and weapons offenses.

Table 6
Adult Males
Descriptive Statistics of Public and Private Inmates
Treatment and Control Group Definition B1

	Public		**Private**		**Total**
Total Cases	58,342		2,993		61,335
Age at Release					
Under 18	10	0.0%	0	0.0%	10
18 to 24	7,934	13.6%	387	12.9%	8,321
25 to 34	24,697	42.3%	1,270	42.4%	25,967
35 to 49	22,940	39.3%	1,173	39.2%	24,113
50 to 59	2,211	3.8%	138	4.6%	2,349
60+	550	0.9%	25	0.8%	575
Average	34.0		34.2		
Race – Black	33,891	58.1%	1,753	58.6%	35,644
Hispanic	2,995	5.1%	161	5.4%	3,156
Prior Recidivism Events **					
0	25,404	43.5%	1,425	47.6%	26,829
1	14,554	24.9%	688	23.0%	15,242
2	8,702	14.9%	424	14.2%	9,126
3	5,224	9.0%	240	8.0%	5,464
4	2,676	4.6%	125	4.2%	2,801
5 +	1,782	3.1%	91	3.0%	1,873
Average	1.2		1.1		
Custody Low **	28,206	48.3%	1,744	58.3%	29,950
Custody High **	9,944	17.0%	33	1.1%	9,977
Months in Prison **					
1-12	15,193	26.0%	1,455	48.6%	16,648
13-24	16,737	28.7%	1,004	33.5%	17,741
25-36	9,452	16.2%	323	10.8%	9,775
37-48	5,781	9.9%	116	3.9%	5,897
49-60	3,556	6.1%	55	1.8%	3,611
61+	7,623	13.1%	40	1.3%	7,663
Average	31.3		16.8		

Table 6 (Continued)
Adult Males
Descriptive Statistics of Public and Private Inmates

	Public		Private		Total
Total Disciplinary Reports **					
0	28,491	48.8%	2,139	71.5%	30,630
1	9,896	17.0%	458	15.3%	10,354
2	5,129	8.8%	169	5.6%	5,298
3 to 6	7,703	13.2%	158	5.3%	7,861
7 or More	7,123	12.2%	69	2.3%	7,192
Average	2.9		0.8		
Last TABE Score **					
1-3.9	11,110	19.0%	489	16.3%	11,599
4-8.9	30,535	52.3%	1,484	49.6%	32,019
9-11.9	9,215	15.8%	603	20.1%	9,818
12-12.9	7,482	12.8%	417	13.9%	7,899
Median	7.1		7.6		
Supervision – Yes **	21,541	36.9%	699	23.4%	22,240
Most Serious – Homicide **	3,016	5.2%	50	1.7%	3,066
Most Serious - Sex/Lewd **	5,247	9.0%	179	6.0%	5,426
Most Serious – Robbery **	12,122	20.8%	456	15.2%	12,578
Most Serious - Other Violent	14,857	25.5%	806	26.9%	15,663
Most Serious – Burglary *	11,723	20.1%	653	21.8%	12,376
Total Property Crimes (Average)	1.1		1.1		
Total Drug Crimes (Average) **	1.1		1.4		
Total Weapons Crimes (Average)	0.2		0.2		

Significance levels based on T-Tests when averages are displayed and Chi-Square when they are not.
* Significant at $p<.05$, ** Significant at $p<.01$.

The differences described on many of the control variables for the public and private adult male inmates clearly indicates the need to hold these factors constant when evaluating whether differences in recidivism probabilities exist between the two groups. Public adult male inmates have higher rates of prior recidivism rates, close custody, and disciplinary infractions, as well as lower TABE scores. These characteristics are all associated with a higher likelihood of recidivism. In contrast, private adult male inmates have shorter lengths of stay in prison and are less likely to have post-prison supervision, which are predictive of higher recidivism rates.

To determine whether the private prison experience for adult males affects their likelihood of recidivism in terms of re-offense or re-imprisonment rates, we employed multivariate survival models which control, or hold constant, the effects of other variables known to influence recidivism rates. Table 7 displays these results and clearly shows there are no

statistically significant differences in re-offense or re-imprisonment rates between public and private adult male inmates using any of six methods for quantifying private prison experience. Using the re-offense recidivism measure, all the relationships between the type of prison and re-offense indicate that private inmates are slightly more likely to recidivate than public adult male inmates (MLE's = .01 to .04) but these differences are not statistically significant. Using the re-imprisonment recidivism measure, all the relationships between the type of prison and this recidivism measure are very slight (-.01 to +.01) and, again, not statistically significant.

Table 7
Adult Males: Recidivism Predictor Variables Using Survival Analysis

	Maximum Likelihood Estimates (MLE's)											
	Re-Offense						**Re-Imprisonment**					
Effect Measure	**A1**	**A2**	**B1**	**B2**	**B3**	**C1**	**A1**	**A2**	**B1**	**B2**	**B3**	**C1**
Total Cases	52,297	41,376	61,335	68,659	69,505	74,838	52,297	41,376	61,335	68,659	69,505	74,838
Treatment (Private) Cases	3,553	2,793	2,993	3,176	3,306	3,562	3,553	2,793	2,993	3,176	3,306	3,562
Control (Public) Cases	48,744	38,583	58,342	65,483	66,199	71,276	48,744	38,583	58,342	65,483	66,199	71,276
Treatment (Private) Group	**.03**	**.01**	**.04**	**.03**	**.04**	**.01**	**.01**	**.00**	**-.01**	**-.01**	**-.01**	**.01**
Age at Release	-.03**	-.03**	-.03**	-.03**	-.03**	-.03**	-.03**	-.03**	-.03**	-.03**	-.03**	-.03**
Black	.21**	.22**	.20**	.20**	.22**	.22**	.24**	.23**	.23**	.23**	.24**	.25**
Hispanic	-.02	-.01	-.05	-.04	-.05	-.06	-.03	-.04	-.05	-.02	-.04	-.05
Prior Recidivism	.22**	.22**	.22**	.22**	.22**	.22**	.28**	.27**	.29**	.29**	.29**	.29**
Custody - Low	-.11**	-.10**	-.13**	-.14**	-.15**	-.15**	-.15**	-.16**	-.16**	-.17**	-.18**	-.18**
Custody - High	.04*	.05*	.02	.02	.03	.03	.06*	.06*	.04	.04	.05*	.06*
Months in Prison	-.01**	-.01**	-.01**	-.01**	-.01**	-.01**	-.00**	-.00**	-.00**	-.00**	-.00**	-.00**
Total Disciplinary Reports	.02**	.02**	.02**	.02**	.02**	.02**	.01**	.01**	.02**	.02**	.02**	.02**
Last TABE grade	-.02**	-.02**	-.02**	-.02**	-.02**	-.02**	-.03**	-.03**	-.03**	-.03**	-.03**	-.03**
Supervision	-.15**	-.16**	-.15**	-.14**	-.15**	-.15**	.04	.03	.05**	.06**	.06**	.07**
Most Serious - Homicide	-.29**	-.28**	-.26**	-.28**	-.28**	-.28**	-.19**	-.21**	-.14**	-.18**	-.19**	-.22**
Most Serious - Sex/Lewd	-.37**	-.36**	-.31**	-.32**	-.32**	-.35**	-.24**	-.27**	-.14**	-.17**	-.16**	-.20**
Most Serious - Robbery	.01	.02	.07**	.06**	.05*	.01	.14**	.13**	.23**	.21**	.20**	.16**
Most Serious - Other Violent	-.01	.00	.02	.01	.01	-.02	.05	.05	-.12**	-.09**	-.09**	.05
Most Serious - Burglary	.11**	.13**	.16**	.16**	.15**	.12**	.23**	.23**	.30**	.31**	.29**	.27**
Total Property Crimes	.03**	.03**	.03**	.03**	.03**	.03**	.03**	.02**	.03**	.02**	.02**	.03**
Total Drug Crimes	.03**	.03**	.03**	.03**	.03**	.03**	.02**	.02**	.02**	.02**	.02**	.02**
Total Weapons Crimes	-.02	-.02	-.01	-.02	-.02*	-.02*	-.03*	-.02	-.03	-.04**	-.04**	-.04**

* Significant at p<.05
** Significant at p<.01.

Results: Adult Females

Table 8 presents the base recidivism rates for adult female inmates using the recidivism re-offense measure generated from the SAS© life-test procedure with follow-up periods of six months to sixty months. These data show that, in the short term through an eighteen month follow-up period, the re-offense rates of public and private female inmates are virtually identical within five of the six outcome measures. Only the B1 group shows public female inmates exhibiting re-offense rate differences greater than 2% with public females recidivating slightly more than private female inmates (21.7% versus 19.4%). In the longer follow-up periods of thirty and thirty-six months, again only the B1 group indicates any difference greater than 2% with public female inmates having higher re-offense rates (34.0%) than private female releases (31.7%). However, none of these re-offense rate differences between the public and private adult female inmates are statistically significant at the $p<.05$ level.

Table 8
Adult Females: Re-Offense Recidivism Rates with No Controls for Explanatory Variables

	Treatment Effect Measurement Group											
	A1 Group		A2 Group		B1 Group		B2 Group		B3 Group		C1 Group	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Number of Cases	3,631	1,866	2,702	1,332	4,714	640	5,066	1,447	5,395	1,333	6,047	1,712
Follow-Up Period												
6 Months	10.2%	7.9%	9.9%	8.1%	9.1%	6.8%	8.8%	7.1%	8.7%	6.6%	8.8%	7.0%
12 Months	17.2%	15.2%	16.4%	16.1%	16.0%	14.3%	15.7%	14.9%	15.4%	13.4%	15.5%	14.3%
18 Months	23.4%	22.0%	22.6%	23.0%	21.7%	19.4%	21.2%	21.8%	21.0%	19.8%	21.0%	21.3%
24 Months	27.8%	27.6%	27.2%	28.5%	26.4%	24.7%	25.8%	27.4%	25.5%	24.8%	25.6%	26.4%
36 Months	35.3%	35.4%	34.4%	36.1%	34.0%	31.7%	33.4%	34.7%	33.1%	32.0%	33.3%	33.4%
48 Months	41.3%	40.7%	40.4%	42.5%	40.1%	36.8%	39.4%	40.4%	39.1%	36.1%	39.0%	39.2%
60 Months	45.3%	44.7%	44.5%	46.2%	na	na	42.7%*	43.7%*	na	na	42.5%*	42.7%*

None of the recidivism rate differences were statistically significant at the $p<.05$ level (Wilcoxon Test).
* 58 months.

Re-imprisonment rates for adult female releases are displayed in Table 9, prior to controlling for known relevant predictors, for the public and private releases within each of the six definitional groups. For the short term re-imprisonment rates up to eighteen months after prison release, none of the differences in the public and private female releases are meaningful

with all groups revealing a less than a 2% difference. For the longer term rates up to thirty-six months, only within the B1 group was there a difference of more than 2%. Within this group, public female inmates were re-imprisoned at a 2.8% higher rate than private females. However, none of these re-imprisonment rate differences between public and private inmates are statistically significant at the p<.05 level.

Table 9
Adult Females: Re-Imprisonment Recidivism Rates with No Controls for Explanatory Variables

	Treatment Effect Measurement Group											
	A1 Group		A2 Group		B1 Group		B2 Group		B3 Group		C1 Group	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Number of Cases	3,631	1,866	2,702	1,332	4,714	640	5,066	1,447	5,395	1,333	6,047	1,712
Follow-Up Period												
6 Months	5.9%	4.9%	5.9%	5.3%	5.1%	3.6%	5.0%	4.2%	4.9%	3.5%	4.9%	4.2%
12 Months	9.4%	9.3%	9.4%	9.9%	8.7%	7.2%	8.6%	8.5%	8.5%	7.0%	8.4%	8.2%
18 Months	12.6%	12.3%	12.6%	12.7%	11.4%	9.5%	11.2%	11.2%	11.2%	9.8%	11.2%	10.9%
24 Months	14.8%	15.8%	14.7%	16.2%	13.9%	12.9%	13.6%	14.4%	13.5%	13.3%	13.6%	13.9%
36 Months	18.7%	20.0%	18.7%	20.1%	17.5%	14.7%	17.3%	18.3%	17.0%	16.1%	17.4%	17.5%
48 Months	20.9%	21.7%	21.2%	22.1%	19.8%	17.1%	19.5%	20.5%	19.3%	17.7%	19.5%	19.8%
56 Months	22.0%*	22.2%*	na	na	na	na	na	na	na	na	na	na

None of the recidivism rate differences were statistically significant at the p<.05 level (Wilcoxon Test).
* No comparison groups had estimates for longer than 56 months.

Table 10 presents the distributions of the private and public adult female inmates on the variables used in the final survival models to answer the question whether recidivism rates differ across the two groups. In terms of the demographic characteristics, adult females from public prisons were somewhat younger at release than those from private prison; however, the difference was not statistically significant (mean age: public = 33.4; private = 35.6). The racial and ethnicity distributions across the public and private groups were virtually the same. In contrast, private female inmates were somewhat more likely to have more prior recidivism events than public female inmates and these differences were statistically significant (average: private = 0.9; public = 0.7, p<.01) but are very similar in terms of the percentage that were close custody inmates (private = 29.5%; public = 28.9%). Public female inmates were much more likely to spend longer lengths of time in prison (average months: public = 20.4; private = 16.4) and have more disciplinary problems while in prison (average disciplinary reports: public = 2.8;

private = 0.7). The median TABE score for public was slightly lower than for private female inmates (6.6 versus 7.3) and more likely to be released to some form of post-prison supervision (26.5% versus 22.0%). In terms of their most serious crime type, public female inmates are more likely to have committed a homicide, sex/lewd offense, or a robbery than private female inmates. However, the two groups are very similar in terms of their total number of convictions for property, drug, and weapons offenses.

The differences described on many of the control variables for the public and private adult female inmates indicate the need to control for these factors when evaluating whether the recidivism rates differ between the two groups. Public female inmates are younger at release, and have more disciplinary infractions as well as lower TABE scores. These characteristics are all associated with a higher likelihood of recidivism. In contrast, private inmates have more prior recidivism rates and shorter prison stays, and are less likely to have post-prison supervision, which are also predictive of higher recidivism rates.

Table 10
Adult Females: Descriptive Statistics of Public and Private Inmates
Treatment and Control Group Definition B1

	Public		Private		Total
Total Cases	4,714		640		5,354
Age at Release					
Under 18	21	0.4%	0	0.0%	21
18 to 24	659	14.0%	27	4.2%	686
25 to 34	1,950	41.4%	270	42.2%	2,220
35 to 49	1,962	41.6%	316	49.4%	2,278
50 to 59	102	2.2%	24	3.8%	126
60+	20	0.4%	3	0.5%	23
Average	33.4		35.6		
Race – Black	2,696	57.2%	363	56.7%	3,059
Hispanic	139	2.9%	16	2.5%	155
Prior Recidivism Events **					
0	2,862	60.7%	335	52.3%	3,197
1	943	20.0%	160	25.0%	1,103
2	500	10.6%	70	10.9%	570
3	270	5.7%	35	5.5%	305
4	94	2.0%	28	4.4%	122
5 +	45	1.0%	12	1.9%	57
Average	0.7		0.9		
Custody Low	3,352	71.1%	451	70.5%	3,803
Custody High **	256	5.4%	0	0.0%	256

Table 10 (Continued)
Adult Females: Descriptive Statistics of Public and Private Inmates
Treatment and Control Group Definition B1

	Public		Private		Total
Months in Prison **					
1-12	1,912	40.6%	332	51.9%	2,244
13-24	1,616	34.3%	189	29.5%	1,805
25-36	618	13.1%	67	10.5%	685
37-48	264	5.6%	34	5.3%	298
49-60	127	2.7%	12	1.9%	139
61+	177	3.8%	6	0.9%	183
Average	20.4		16.4		
Total Disciplinary Reports **					
0	2,430	51.5%	466	72.8%	2,896
1	809	17.2%	96	15.0%	905
2	388	8.2%	35	5.5%	423
3 to 6	563	11.9%	27	4.2%	590
7 or More	524	11.1%	16	2.5%	540
Average	2.8		0.7		
Last TABE Score **					
1-3.9	894	19.0%	109	17.0%	1,003
4-8.9	2,745	58.2%	354	55.3%	3,099
9-11.9	626	13.3%	104	16.3%	730
12-12.9	449	9.5%	73	11.4%	522
Median	6.6		7.3		
Supervision – Yes *	1,249	26.5%	141	22.0%	1,390
Most Serious – Homicide **	231	4.9%	10	1.6%	241
Most Serious - Sex/Lewd	58	1.2%	3	0.5%	61
Most Serious – Robbery **	572	12.1%	54	8.4%	626
Most Serious - Other Violent	1,317	27.9%	171	26.7%	1,488
Most Serious – Burglary	489	10.4%	61	9.5%	550
Total Property Crimes (Average) **	1.1		1.4		
Total Drug Crimes (Average) **	1.4		1.5		
Total Weapons Crimes (Average)	0.1		0.1		

Significance levels based on T-Tests when averages are displayed and Chi-Square when they are not.
* Significant at p<.05, ** Significant at p<.01.

Even though the base recidivism rate comparison between the public and private prison experience for adult females revealed no statistically significant differences, the differences in these populations indicates the need to use multivariate survival models to control for the effects of these variables on recidivism rates. Table 11 displays these results and shows that, for the re-offense recidivism measure, only the B1 group reveals a statistically significant difference with the private female group experiencing lower recidivism rates than the public female group. However, the private prison effect in the

B1 group is marginally significant (p = .043), and when performing a stepwise survival model which requires an entry p value of .05 or lower, the treatment effect does not enter the model. These contradictory results may be due to the proximity of the p-value to the stepwise significance level threshold and some slight interaction between the treatment indicator variable and the other control variables. None of the re-imprisonment rate differences between public and private adult female inmates within each of the six methods of quantifying the type of prison experience were statistically significant.

Table 11
Adult Females: Recidivism Predictor Variables Using Survival Analysis

	Maximum Likelihood Estimates											
	Re-Offense						**Re-Imprisonment**					
Effect Measure	**A1**	**A2**	**B1**	**B2**	**B3**	**C1**	**A1**	**A2**	**B1**	**B2**	**B3**	**C1**
Total Cases	5,497	3,404	5,354	6,513	6,528	7,759	5,497	3,404	5,354	6,513	6,528	7,759
Treatment (Private) Cases	1,866	1,332	640	1,447	1,133	1,712	1,866	1,332	640	1,447	1,133	1,712
Control (Public) Cases	3,631	2,072	4,714	5,066	5,395	6,047	3,631	2,072	4,714	5,066	5,395	6,047
Treatment (Private) Group	**-.06**	**-.02**	**-.18***	**-.06**	**-.11**	**.01**	**-.02**	**-.01**	**-.08**	**.01**	**.04**	**.10**
Age at Release	-.02**	-.03**	-.03**	-.03**	-.03**	-.03**	-.03**	-.03**	-.03**	-.03**	-.03**	-.03**
Black	-.15*	-.09	-.18**	-.16**	-.16**	.14**	.26**	.24*	.28*	.29**	-.25**	-.25**
Hispanic	-.45**	-.49*	-.25	-.30	-.35*	-.31*	-.44	-.39	-.18	-.36	-.27	-.35
Prior Recidivism	.24**	.24**	.24**	.25**	.26**	.27**	.33**	.33**	.32**	.33**	.33**	.34**
Custody – Low	-.07	-.09	-.02	-.07	-.04	.10	-.05	-.01	-.04	-.08	-.02	-.10
Custody – High	-.26	-.27	-.25	-.25	-.26	-.27	-.10	-.07	.03	-.05	-.04	-.11
Months in Prison	-.01**	-.01**	-.01**	-.02**	-.02**	-.02**	-.01	-.00	-.01	-.01**	-.01**	-.01**
Total Disciplinary Reports	.02**	.02**	.02**	.02**	.02**	.02**	.01	.01	.01	.01**	.01**	.01**
Last TABE grade	-.02*	-.02	-.04**	-.03**	-.03**	-.03**	-.03*	-.04*	-.06**	-.05**	-.05**	-.04**
Supervision	-.19**	-.15*	-.20**	-.20**	-.19**	-.19**	.06	.10	-.04	-.03	.01	.02
Most Serious – Homicide	-.66**	-.76**	-.65**	-.60**	-.62**	-.55**	-.66*	-.70*	-.58	-.53	-.60*	-.46
Most Serious - Sex/Lewd	-.87*	-1.14**	-1.08*	-.96*	-.96*	-.76*	-1.04	-.98	-1.75	-1.83	-1.78	-.84
Most Serious - Robbery	.09	.18	.02	.02	.03	.02	.16	.14	.33*	.34**	.37**	.29**
Most Serious - Other Violent	-.09	-.16*	-.03	-.03	-.04	-.05	.03	.01	.21*	.17	.20*	.15
Most Serious - Burglary	.21**	.17	.18*	.28**	.25**	.24**	.38**	.36**	.49**	.51**	.50**	.46**
Total Property Crimes	.01	.01	.02**	.02**	.02**	.01**	.01	.01	.02**	.02*	.02**	.02*
Total Drug Crimes	.05**	.04**	.05**	.05**	.05**	.05**	.06**	.05**	.06**	.06**	.06**	.06**
Total Weapons Crimes	-.03	-.03	-.00	-.01	.01	-.01	.07	.07	.02	.05	.06	.06

* Significant at p<.05, ** Significant at p<.01.

Results: Youthful Offender Males

Table 12 presents the base recidivism rates for youthful offender males using the re-offense measure generated from the SAS© life-test procedure with follow-up periods of six months to thirty-six months. These data show that, in the six month follow-up, the private youthful offender males have lower recidivism re-offense rates than their public counterparts. In the intermediate periods of twelve to eighteen months follow-up, the re-offense rates of public and private youthful offender adult male inmates exhibit no meaningful differences in that none of the differences exceed 2%. In contrast, for the longer follow-up period of thirty-six months, public youthful offender male inmates have higher re-offense rates within all of six groups, ranging from 4.6% higher in the B1 group to 8.7% for the A2 group. However, none of these base re-offense rate differences are statistically significant at the $p<.05$ level.

Table 12
Youthful Offender Males:
Re-Offense Recidivism Rates with No Controls for Explanatory Variables

	Treatment Effect Measurement Group											
	A1 Group		A2 Group		B1 Group		B2 Group		B3 Group		C1 Group	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Number of Cases	3,633	450	3,023	376	3,896	396	4,203	631	4,507	474	4,189	439
Follow-Up Period												
6 Months	15.1%	10.7%	15.1%	10.6%	13.5%	10.7%	13.7%	9.8%	13.7%	9.6%	13.0%	9.3%
12 Months	24.9%	22.7%	24.7%	23.3%	22.9%	22.3%	23.2%	21.6%	23.1%	21.2%	22.1%	20.7%
18 Months	31.9%	31.8%	31.6%	31.1%	29.7%	30.4%	29.9%	29.7%	29.7%	29.6%	28.4%	29.3%
24 Months	37.0%	36.1%	36.9%	34.0%	34.5%	34.8%	34.6%	33.5%	34.7%	33.4%	33.2%	32.4%
36 Months	43.4%	40.4%	43.3%	37.8%	n/a	n/a	40.8%	38.7%	n/a	n/a	n/a	n/a

None of the recidivism rate differences were statistically significant at the $p<.05$ level (Wilcoxon Test).

Table 13 presents the base recidivism rates for youthful offender males using the re-imprisonment recidivism measure. These data show that, in the short term through an eighteen months follow-up period, the re-imprisonment rates of private youthful offender male inmates have slightly lower rates than the public youthful offender males, ranging from 0.4% in the A2 group to 2.5% in the C1 group. The greatest difference in the pubic and private prison re-imprisonment rates for the longer term twenty-four month follow-up period was 6.0% in the C1 group with private prisons having lower recidivism rates (14.6% versus 20.6%). However, none

of the differences in re-imprisonment rates between the public and private prisons were statistically significant at the p<.05 level.

Table 13
Youthful Offender Males:
Re-Imprisonment Recidivism Rates with No Controls for Explanatory Variables

	Treatment Effect Measurement Group											
	A1 Group		A2 Group		B1 Group		B2 Group		B3 Group		C1 Group	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Number of Cases	3,633	450	3,023	376	3,896	396	4,203	631	4,507	474	4,189	439
Follow-Up Period												
6 Months	9.3%	8.2%	9.3%	7.9%	8.3%	7.3%	8.4%	7.0%	8.5%	6.8%	8.5%	6.5%
12 Months	15.0%	14.4%	15.2%	14.8%	14.0%	12.9%	14.2%	12.9%	14.3%	12.6%	14.2%	11.7%
18 Months	18.9%	18.3	19.3%	17.7%	17.8%	16.6%	17.9%	16.6%	17.8%	16.0%	17.7%	14.6%
24 Months	21.7%	20.1%	n/a	n/a	n/a	n/a	20.5%	18.5%	20.5%	17.0%	20.6%	14.6%

None of the recidivism rate differences were statistically significant at the p<.05 level (Wilcoxon Test).

Table 14 displays descriptive statistics of the private and public youthful offender male inmates on the variables used in the final survival models to address the issue of whether recidivism rates differ across the two groups. In terms of the demographic characteristics of age at release, race, and ethnicity, as well as the number of prior recidivism events, the public and private youthful offender male inmates are virtually the same. However, youthful offender males from private prisons are less to be low custody at release (52.3% versus 59.3%, p<.01), spend less time in prison (average = 16.6 versus 18.6 months, p<.01), have slightly lower TABE scores (median = 7.0 versus 7.8), and are less likely to have post-prison supervision (27.8% versus 39.1%). These characteristics are associated with higher recidivism rates. In contrast, public youthful offender males have much more disciplinary problems in prison their private counterparts (average = 2.9 versus 1.8, p<.01), which is also predictive of higher rates.

Table 14
Youthful Offender Males
Descriptive Statistics of Public and Private Inmates

	Public		Private		Total
Total Cases	3,896		396		4,292
Age at Release **					
Under 18	155	4.0%	0	0.0%	155
18 to 24	3,699	95.0%	395	99.8%	4,094
25 to 34	41	1.0%	1	0.2%	42
35 to 49	1	0.0%	0	0.0%	1
50 to 59	0	0.0%	0	0.0%	0
60+	0	0.0%	0	0.0%	0
Average	20.3		20.9		
Race – Black	2,197	56.4%	222	56.1%	2,419
Hispanic	335	8.6%	29	7.3%	364
Prior Recidivism Events					
0	3,896	100.0%	396	100.0%	4,292
1	0	0.0%	0	0.0%	0
2	0	0.0%	0	0.0%	0
3	0	0.0%	0	0.0%	0
4	0	0.0%	0	0.0%	0
5 +	0	0.0%	0	0.0%	0
Average	0.0		0.0		
Custody Low **	2,312	59.3%	207	52.3%	2,519
Custody High	323	8.3%	36	9.1%	359
Months in Prison **					
1-12	1,337	34.3%	171	43.2%	1,508
13-24	1,566	40.2%	154	38.9%	1,720
25-36	652	16.7%	53	13.4%	705
37-48	246	6.3%	12	3.0%	258
49-60	73	1.9%	6	1.5%	79
61+	22	0.6%	0	0.0%	22
Average	18.6		16.6		
Total Disciplinary Reports **					
0	1,066	27.4%	170	42.9%	1,236
1	710	18.2%	79	20.0%	789
2	489	12.6%	50	12.6%	539
3 to 6	1,080	27.7%	69	17.4%	1,149
7 or More	551	14.1%	28	7.1%	579
Average	2.9		1.8		
Last TABE Score *					
1-3.9	508	13.0%	56	14.1%	564
4-8.9	1,981	50.8%	217	54.8%	2,198
9-11.9	884	22.7%	67	16.9%	951
12-12.9	523	13.4%	56	14.1%	579
Median	7.8		7.0		

Table 14 (Continued)
Youthful Offender Males
Descriptive Statistics of Public and Private Inmates

	Public		Private		Total
Supervision - Yes **	1,524	39.1%	110	27.8%	1,634
Most Serious – Homicide	115	3.0%	5	1.3%	120
Most Serious - Sex/Lewd	169	4.3%	20	5.1%	189
Most Serious - Robbery **	851	21.9%	41	10.4%	892
Most Serious - Other Violent *	809	20.8%	104	26.3%	913
Most Serious – Burglary	1,090	28.0%	119	30.0%	1,209
Total Property Crimes (Average)	0.7		0.7		
Total Drug Crimes (Average) *	0.5		0.7		
Total Weapons Crimes (Average)	0.1		0.1		

Significance levels based on T-Tests when averages are displayed and Chi-Square when they are not.
* Significant at p<.05, ** Significant at p<.01.

Table 15 displays the results of the multivariate survival models for the youthful offender males which control several variables known to influence recidivism rates. None of the re-offense or re-imprisonment rate differences between public and private youthful offender male inmates within each of the six methods of quantifying the type of prison experience were statistically significant at the p<.05 level.

Table 15
Youthful Offender Males: Recidivism Predictor Variables Using Survival Analysis

	Maximum Likelihood Estimates											
	Re-Offense						Re-Imprisonment					
Effect Measure	**A1**	**A2**	**B1**	**B2**	**B3**	**C1**	**A1**	**A2**	**B1**	**B2**	**B3**	**C1**
Total Cases	4,083	3,399	4,292	4,834	4,981	4,628	4,083	3,399	4,292	4,834	4,981	4,628
Treatment (Private) Cases	450	376	396	631	474	439	450	376	396	63`	474	439
Control (Public) Cases	3,633	3,023	3,896	4,203	4,507	4,189	3,633	3,023	3,896	4,203	4,507	4,189
Treatment (Private) Group	**-.04**	**-.06**	**-.07**	**-.10**	**-.08**	**-.16**	**-.05**	**-.03**	**-. 02**	**-.00**	**-.03**	**-.18**
Age at Release	-. 12**	-. 13**	-. 11**	-. 12**	-. 13**	-. 11**	-. 16**	-. 18**	-. 15**	-. 17**	-. 15**	-.13**
Black	. 52**	. 44**	. 53**	. 53**	. 49**	. 44**	. 62**	. 57**	. 68**	. 64**	. 61**	. 56**
Hispanic	.09	.08	.16	.12	.04	-.03	-.04	-.13	.03	-.00	-.10	-.15
Prior Recidivism	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Custody – Low	-.04	-.05	-.07	-.11	-.08	-.12	-.06	-.05	-. 14	-.15	-.12	-.12
Custody – High	.14	.15	.16	.04	.11	.06	.23	.19	.29*	.10	.21	.13
Months in Prison	-.00**	-.00	-. 01	-. 00	-.00	-.00	.00	.01	.00	.00	.00	.00
Total Disciplinary Reports	.05**	.04**	.06**	.04**	.04**	.03**	.03*	.03*	.05**	.04**	.04**	.02**
Last TABE grade	-.03**	-.03**	-.04**	-.04**	-.04**	-.05**	-.04*	-.04*	-.06**	-.06**	-.06**	-.06**
Supervision	-.24**	-.27**	-.33**	-.31**	-.30**	-.28**	.25**	.20*	.13	.14	. 14	.14
Most Serious - Homicide	-.83**	-.93**	-.75**	-.73**	-.65**	-.53**	-.96*	-1.11**	-.74*	-.61*	-.58*	-.73
Most Serious - Sex/Lewd	-.54**	-.62**	-.34	-.44*	-.46**	-.50**	-.37	-46	-.16	-.27	-.20	-.27
Most Serious - Robbery	-.42**	-.56**	-.36**	-.41**	-.37**	-.30**	-.32*	-.51**	-.30*	-.31*	-.23	-.25
Most Serious - Other Violent	-.11*	-.25*	-.06	-.10	-.08	-.02	-.18	-.34*	-.09	-.11	-.03	-.07
Most Serious - Burglary	.09	.00	.05	.03	.02	.03	.26*	.09	.23	.22	.20	.10
Total Property Crimes	.06**	.05**	.06**	.06**	.06**	.05**	.08**	.07**	.09**	.08**	.08**	.08**
Total Drug Crimes	.07**	.06*	.08**	.08**	.07**	.09**	.07*	.06	.08**	.08**	.09**	.11**
Total Weapons Crimes	.04	.06	.05	.06	.09	.08	.02	.01	-02	-.01	.05	.07

* Significant at p<.05, ** Significant at p<.01, *** All cases had a value of 0 on Prior Recidivism.

Summary and Conclusions

This study was a successful collaboration between the Florida Correctional Privatization Commission, the Florida Department of Corrections and the Florida State University School of Criminology and Criminal Justice to examine whether public and private prisons produce different recidivism outcomes. Major advancements were made to the research methodologies used in previous studies of this important issue, including how exposure to public versus private prisons was measured, larger numbers of cases studied, and the increased breadth of control variables used in the analysis.

This study examined the effectiveness of private prisons, relative to public prisons, in terms of affecting recidivism rates as measured by a new offense or re-imprisonment after prison release. Six different levels and types of exposure to public and private prisons were quantified; three specific offender types were examined based on the different types of inmates private prisons house: adult males, adult females, and youthful offender males; and two measures of recidivism were examined (re-offense and re-imprisonment). Therefore, in total, there were thirty-six separate comparisons of recidivism rates between public and private prisons, each controlling for factors known to affect these rates after prison release (age at release, gender, prior recidivisms, etc.).

For adult males, there were no differences in recidivism rates found between public and private prisons, a result consistent with the previous study conducted of Florida inmates by Farabee and Knight (2002). Also consistent with Farabee and Knight, among youthful offender male inmates, no differences in recidivism rates were found between the public and private prisons.

For adult females, in only one of twelve measures of public and private prison exposure (the purest group – B1) and recidivism (re-offense) were private prisons found to significantly reduce the likelihood of recidivism relative to public prisons. In this analysis, the private prison exposure definition (A2) closest to that used by Farabee and Knight did not demonstrate an effect for re-offending or re-imprisonment. This could be because Farabee and Knight analyzed the latest of multiple prison releases from the same commitment rather than the first of multiple releases, which this analysis employed. Or it could result from Farabee and Knight not controlling for disciplinary reports, which are known to influence recidivism rates.

This study's purer definition (B1) of private prison exposure did yield an effect, the result found by Farabee and Knight that females released from private prisons re-offend at lower rates is partially confirmed. In fact, they found that females released from public prisons were 25% more likely to re-offend than private prison females. The size of this effect is quite similar to this study's finding that private prison females are 18% less likely to re-offend than public prison females. However, this study does not confirm Farabee and Knight's finding of lower re-imprisonment rates for private prison females. This difference is probably caused by their use of latest release instead of first release on a prison commitment, because counting recidivism beginning with the most recent of multiple prison releases ignores earlier returns to prison.

This study's finding of a lower re-offense probability from private prison exposure should be taken as provisional for two reasons. First, the measurement's statistical significance depends on forcing the exposure measure into a regression model; the treatment effect did not enter the statistical model based on its independent correlation with re-offense rates. Second, although the re-offense effect for females does appear when using the purest measure of exposure to private prisons, the number of females examined is also the smallest number of cases for a private prison group (640 cases) and substantially smaller than the other female private prison exposure groups (ranging from 1,133 to 1,866 cases). A future analysis with more cases that fit the purest exposure definition would be needed to determine whether this effect is an artifact of the relatively small number of cases.

In summary, in only one of thirty-six comparisons was there evidence that private prisons were more effective than public prisons in terms of reducing recidivism. This indicates that, at this time, public and private prisons are essentially the same in terms of their relative effectiveness in preventing inmates from being re-imprisoned for adult males, adult females, and youthful offender males after release from Florida's prisons. Likewise, no effect appears on re-offense rates for adult males and youthful offender males attributable to private prison exposure. For adult females, only one of six measures of private prison exposure is associated with a lower re-offense probability for private prison inmates and this finding should be considered provisional until a larger number of cases are available to analyze.

References

Austin, James and Coventry, Garry. (2001). Emerging Issues on Privatized Prisons. U.S. Department of Justice, Bureau of Justice Assistance. Washington, DC.

Anderson, D. B., Schumacker, R. E., and Anderson, S. L. (1991). Release characteristics and Parole Success. *Journal of Offender Rehabilitation, 17*, 133-145.

Batiuk, M. E., Moke, P., and Rountree, P. W. (1997). Crime and rehabilitation: Correctional education as an agent of change—A research note. *Justice Quarterly, 14*, 167-180.

Beck, Allen J. (August, 2000). Prisoners in 1999. U.S. Department of Justice, Bureau of Justice Statistics. Washington, DC.

Beck, Allen J., and Bernard E. Shipley (1989). Recidivism of Prisoners Released in 1983. U.S. Department of Justice, Bureau of Justice Statistics. Washington, DC.

Farabee, D., and Knight, Kevin. (2002). A comparison of public and private prisons in Florida: During- and post-prison performance indicators. Los Angeles, CA: Query Research.

Florida Department of Corrections. (January 29, 1998). Preliminary Assessment of Study Entitled: A Comparative Recidivism Analysis of Releasees From Private and Public Prisons in Florida.

Florida Department of Corrections. (2001). Recidivism report: Inmates released from Florida prisons. Available: http://www.dc.state.fl.us/pub/recidivism/full.pdf

Florida Department of Corrections. (2003). Recidivism report: Inmates released from Florida prisons July 1995 to June 2001. Available: http://www.dc.state.fl.us

Gendreau, Paul, Tracy Little, and Claire Goggin (1996). "A Meta-Analysis of the Predictors of Adult Offender Recidivism: What Works!" Criminology, Vol. 34, No. 4.

Harer, M. D. (1995a). Recidivism among federal prisoners released in 1987. *Journal of Correctional Education, 46*, 98-128.

Harer, M. D. (1995b). Prison education program participation and recidivism: A test of the normalization hypothesis. Available: http://www.bop.gov/orepg/orepredprg.pdf

Harrison, Paige M. and Beck, Allen J. (July, 2003). Prisoners in 2002. U.S. Department of Justice, Bureau of Justice Statistics. Washington, DC.

Jernigan, D. E., and Krosnick, R. F. (1992). Intensive parole: The more you watch, the more you catch. *Journal of Offender Rehabilitation, 17*, 65-76.

Kim, I., Benson, B. L., Rasmussen, D. W., and Zuehlke, T. W. (1993). An economic analysis of recidivism among drug offenders. Southern Economic Journal, 60, 169-183.

Langan, Patrick A., and Levin, Daniel J. (June, 2002). Recidivism of Prisoners Released in 1994. U.S. Department of Justice, Bureau of Justice Statistics. Washington, DC.

Lanza-Kaduce, L., Parker, K. F., and Thomas, C. W. (1999). A comparative recidivism analysis of releasees from private and public prisons. *Crime and Delinquency, 45*(1), 28-47.

Lanza-Kaduce, L., and Maggard, S. (2001). The long-term recidivism of public and private prisoners. A paper presented that the National Conference of the Bureau of Justice Statistics and Justice Research and Statistics Association in New Orleans.

Maguire, K. E., Flanagan, T. J., and Thornberry, T. P. (1988). Prison labor and recidivism. *Journal of Quantitative Criminology, 4,* 3-18.

Schmidt, Peter and Anne D. Witte (1988). *Predicting Recidivism Using Survival Models.* New York: Springer-Verlag.

Smith, D. A., and Polsenberg, C. (1992). Specifying the relationship between arrestee drug use results and recidivism. *The Journal of Criminal Law and Criminology, 83,* 364-377.

Uggen, C. (2000). Work as a turning point in the life course of criminals: A duration model of age, employment, and recidivism. *American Sociological Review, 67,* 529-546.

Ulmer, J. T. (2001). Intermediate sanctions: A comparative analysis of the probability and severity of recidivism. Sociological Inquiry, 71, 164-193.

Washington State Department of Corrections (WSDOC). (2002). Recidivism Briefing Paper 20: Historical Review of Returns to Prison. Available: http://www.doc.wa.gov/planningresearch/studies.htm