

## **Are private prisons more cost-effective than public prisons? A meta-analysis of evaluation research studies**

*Crime and Delinquency*; New York; Jul 1999; [Travis C Pratt](#); [Jeff Maahs](#);

**Volume:** 45  
**Issue:** 3  
**Start Page:** 358-371  
**ISSN:** 00111287  
**Subject Terms:** [Privatization](#)  
[Prison administration](#)  
[Prisons](#)  
[Cost analysis](#)

### **Abstract:**

*The need to reduce the costs of incarceration to state and federal correctional agencies has allowed the movement to privatize correctional institutions to gain considerable momentum. The empirical evidence regarding whether private prisons are more cost-effective than public institutions, however, is inconclusive.*

### **Full Text:**

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### **[Headnote]**

The need to reduce the costs of incarceration to state and federal correctional agencies has allowed the movement to privatize correctional institutions to gain considerable momentum. The empirical evidence regarding whether private prisons are more cost-effective than public institutions, however, is inconclusive. To address this question, a meta-analysis was conducted of 33 cost-effectiveness evaluations of private and public prisons from 24 independent studies. The results revealed that private prisons were no more cost-effective than public prisons, and that other institutional characteristics such as the facility's economy of scale, age, and security level were the strongest predictors of a prison's daily per diem cost.

Since the 1970s, long-term incarceration has become increasingly common in the United States. Coupled with inmate crowding, the high cost of maintaining correctional facilities has resulted in a search for alternative practices designed to alleviate the financial burden placed on state and federal correctional systems (McConville 1987). One option, which has been the topic of ongoing discussion and research, is the privatization of correctional facilities.<sup>1</sup>

Privatization in corrections has become a growth industry (Thomas and Bolinger 1996).<sup>2</sup> Rooted primarily in the political and economic context of the 1980s, the movement to privatize public services has received increasing support in response to taxpayer demands that government provide more services with fewer resources. Advocates of correctional privatization often argue from a "public choice" theoretical perspective (see Bobrow and Dryzek 1987), holding that private entities can provide correctional services at a lower cost than governmental agencies. At best, however, the empirical evidence for this claim—the efficiency hypothesis—remains inconclusive. Whereas some studies claim that private prisons are more efficient than their public counterparts, others reach the opposite conclusion (Winn 1996).

Traditional narrative reviews of the correctional privatization literature (i.e., nonquantitative descriptive reviews) have highlighted some important issues related to the public choice theory efficiency hypothesis. For example, scholars have argued that variations in the economy of scale

of the prison (i.e., its ability to get bulk-rate services because of large numbers of inmates), the age of the facility, and security level variations may affect the cost of operating the facility regardless of its "owner" (Logan 1990; Shichor 1995). Unfortunately, the reviews have failed to settle the debate regarding the cost-effectiveness of private versus public prisons, at least in part because a systematic, quantitative review of the evaluation research literature has yet to be conducted. This article endeavors to throw light on the prison privatization debate by subjecting the pool of evaluation research studies dealing with the relative cost-effectiveness of private versus public prisons to a meta-analysis.

#### PRIVATIZATION IN CORRECTIONS

Rather than being an either-or venture, privatization of prisons has taken many forms. A continuum of private-sphere involvement in the provision of correctional services can be identified (Cox and Osterhoff 1993; Offe 1984), including private prison construction and/or financing through lease-purchasing agreements (Joel 1992, 1993; Kinkade and Leone 1992; Palumbo 1986), private treatment/rehabilitation services (Cullen 1986), private prison industries (Burger 1992; C Atkins 1993; Durham 1993; McKelvey 1977; Sexton, Farrow, and Auerbach 1985), and contracting with private agencies to deal with specific inmate needs, such as medical care and food services (C Atkins 1986).<sup>3</sup> Although privatization has taken a number of forms, cost-effectiveness evaluations have focused on fully owned and operated private facilities, or what has been termed private prison management.

##### The Emergence of Private Prison Management

Until recently, public officials were reluctant to privatize entire correctional institutions (Cox and Osterhoff 1993). Since the early 1980s, however, two major developments have forced policy makers to reconsider the option of private prison management: (1) the perception of the deteriorating conditions of public prisons and, more importantly, (2) prison crowding. First, because many American prisons are old and in need of significant structural renovations, privatization advocates have attempted to justify private prison management by noting the deteriorating conditions of public prisons (Reisig 1997). The extent to which the deterioration argument is supportable, however, is questionable. Specifically, Dilulio (1991) notes that not all public prisons are alike: whereas some are miserable, substandard places, others are clean, state-of-the-art facilities. Regarding prison crowding, from 1980 to 1994 the number of citizens in prison increased over 200 percent to nearly 1.7 million (Maguire and Pastore 1996). The reliance on incarceration has resulted in a demand for prison space that the public sector cannot match in supply (Colson 1989).

Driven by these arguments, nearly every state in the United States currently relies on the private sector, in some capacity, for correctional services (Bowman, Hakim, and Seidenstat 1993). The debate surrounding private prison management has also progressed due to the expansion of this "corrections-commercial complex" (Lilly and Knepper 1993, p. 156; see also Lilly and Deflem 1996). Both advocates and critics of private prison management have begun to focus on the "efficiency of privatization" claim as the central empirical issue (Johnson and Ross 1990, p. 355; see also Durham 1989).

##### Public Choice Theory in Correctional Privatization

As noted above, supporters of private prison management have traditionally adopted arguments grounded in public choice theory.<sup>4</sup> This theory, which draws on microeconomics and political science (and, since the 1980s, public administration, law, and sociology), is simply an analytical frame of reference that emphasizes the role of market-driven competition in policy development (Arrow 1963; Bobrow and Dryzek 1987; Sen 1970). Advocates of this perspective posit that "big

government" (1) discourages economic rationality and efficiency in service provision and (2) is undemocratic in that citizens are forced to accept lower quality services at higher costs (Morgan and England 1988; Ostrom 1974). Generally, supporters of correctional privatization have focused on the first argument—the efficiency hypothesis (Reisig 1997).

Advocates of private prison management assume that the competitive marketplace motivates private entities to develop efficient prison construction practices, programming alternatives, and other related services (Hutto 1988; Logan 1987, 1990; Steelman and Harms 1986). Some scholars also argue that private agencies are less encumbered by bureaucratic constraints than are public organizations, and are therefore more flexible (and less fiscally wasteful) in responding to various correctional needs (Donohue 1985; Logan 1987; Mullen 1985). Furthermore, Hatry, Brownstein, and Levinson (1993) note that states are unlikely to contract for a correctional facility with a private contractor whose price to the state would exceed its existing unit-cost. Critics of privatization, however, predict that any cost savings attributable to privatization will be short-term only, and that long-term costs are likely to exceed current levels of spending due to the need to keep a stable or growing inmate population to ensure profits (Anderson, Davoli, and Moriarty 1985; Henig 1985; Shichor 1995). Critics also argue that independent of who operates the facility, a number of institutional characteristics of prisons are responsible for explaining the variation in operational costs.

For example, the economy of scale achieved by an institution is important; the larger the inmate population, the lower the per diem cost to the funding agency (Bowman et al. 1993; Sechrest and Shichor 1996). In addition, once indirect or "hidden" costs are entered into the per diem calculation, private prison management's claim of cost effectiveness may become illusory at best. Educator salaries paid by school districts, utility bills paid by a public works department, medical staff salaries paid by local health service agencies, and the cost of contract preparation and the monitoring of private facilities all represent public subsidies to private prisons that should be factored into their operational costs (McDonald 1989). The security level of the institution also affects its inmate cost per day. Because higher levels of custody require greater administrative attention (due, in part, to the larger proportion of serious offenders) and a lower economy of scale, a higher per diem rate will result (Johnson and Ross 1990). Thus, assessing the cost-effectiveness of private and public prisons within the same security level is necessary. Finally, any reduction in operating costs, contend critics, is likely to occur because private prisons tend to be newer than public prisons, and are therefore more architecturally sound and require less staff to manage (Hatry et al. 1993).

#### Empirical Assessments of the Public Choice-Efficiency Hypothesis

Some studies have indicated that private correctional facilities do operate more efficiently than their public counterparts (Brakel 1988; Hatry et al. 1993; Logan and McGriff 1989; Sellers 1989). However, others have noted that private prison management fails to consistently provide prison space and/or manage institutions more efficiently than public agencies (Bowditch and Everett 1987; DiIulio 1988, 1990; Henderson 1988).<sup>5</sup> Thus, to date, the evaluation research findings remain mixed. The lack of definitive empirical evidence is due, in part, to two factors. First, most evaluation studies have focused on a small number of facilities (typically one private and one public institution), which limits the generalizability of the results to a wider range of institutions (Shichor 1995). Second, some researchers have appeared more interested in supporting their ideological position and consequently have conducted "simple cost comparisons" that lack analytical and methodological rigor (Logan 1990, p. 96). The most

common problem has been the inadequate control, either methodological or statistical, for other institutional characteristics that could affect a facility's inmate cost per day (Winn 1996).

#### The Present Study

This study addresses the limitations of prior research by subjecting the literature on the cost-effectiveness of public versus private prison management to a meta-analysis. As an alternative approach to the traditional narrative literature review, meta-analysis is "the application of statistical procedures to collections of empirical findings from individual studies for the purpose of integrating, synthesizing, and making sense of them" (Niemi 1986, p. 5). The unit of analysis in meta-analyses is the independent study.

Meta-analytic methodology is particularly useful for combining the results of independent studies addressing a common research question especially when the results of the studies are inconsistent (Wolf 1986). For example, meta-analyses have been conducted to summarize the research literature in areas such as racial disparities in sentencing (Pratt 1998), the effectiveness of correctional treatment interventions (Andrews, Zinger, Hoge, Bonta, Gendreau, and Cullen 1990), the significant predictors of early/adolescent delinquency (Lipsey 1992; Loeber and Stouthamer-Loeber 1986), and attitudes toward victims of sexual assault (Whatley 1996). In essence, this technique looks for common statistical patterns in the research literature, such that inferences can be drawn about the effect size (or predictive capacity) of variables (Cohen 1977; Hunter, Schmidt, and Jackson 1982).

There are two possible advantages to a meta-analysis as opposed to a single independent study in this context. First, meta-analytic methodology will yield a larger sample of cost-effectiveness evaluations than any of the independent evaluation research studies to date (i.e., more facilities may be examined). Second, the impact of differences in institutional characteristics across independent studies (e.g., the prison economy of scale, security level, and the age of the facility) can be determined through controls being achieved through coding procedures.

#### METHODS

Meta-analyses are not free of criticism. Wolf (1986) notes that critics of the method tend to focus on two potential problems. First, journal editors tend to be biased in favor of statistically significant findings, which may limit the use of meta-analyses because they are generally conducted on evaluation studies that have been published as opposed to those that are unpublished. This is not a problem in the present analysis, because studies indicating a cost-effectiveness advantage to either public or private prisons are both given substantive significance (i.e., equal attention) in the published literature.

The second potential problem, which tends to be the more serious of the two, is that well-done studies may be included with poor studies. This may bias the overall effect size estimates of the analysis (Cohen 1977). Minimizing this problem requires (1) establishing theoretically relevant criteria for inclusion in the sample and (2) the coding of methodological variations that could influence the independent study's effect size estimate, in this case, institutional characteristics (Glass, McGaw, and Smith 1981).

#### Sample

The sample of studies generated by a literature search through electronic databases (National Criminal Justice Reference Service [NCJRS], Articlefirst, and Worldcat) included all evaluation research studies assessing the cost-effectiveness of public versus private adult prisons published in academic journals to date, as well as evaluation reports to federal, state, and local political agencies. The literature search also uncovered one unpublished master's thesis that was included in the sample. The final sample was composed of 33 evaluations of private and public facilities

from 24 independent studies. Because this was a study of adult male prisons, evaluations of juvenile facilities, female facilities, halfway houses, and county jails were not included in the sample.

The criteria for inclusion in the sample were that each study must have ( 1 ) reported a measure of inmate cost per day (or have offered enough information that such a measure could be calculated), and (2) included information on the institutional characteristics of the facility which could be used as statistical controls. Studies conducting simple cost comparisons (e.g., a univariate cost comparison of aggregated averages for private and public prisons in a particular jurisdiction) were excluded because of their failure to provide information on the characteristics of the facilities.

#### Effect Size Estimate

The effect size estimate (the meta-analytic equivalent of the dependent variable) used in this study was a standardized measure of the daily per diem cost of operating a correctional facility. The dollar amounts for the daily per diem costs for each facility were converted to z-scores ( $x = 0$ ,  $SD = 1$ ) to obtain effect size estimates with a sampling distribution that approaches normality (Blalock 1972). Normally distributed effect size estimates are necessary for ( 1 ) the accurate determination of central tendency for fixed values of the independent variables, and (2) unbiased tests of statistical significance (Hanushek and Jackson 1977; Rosenthal 1984).

#### Independent Variables

The independent variable of interest was the ownership of the facility (coded as public = 0, private = 1). Four other independent variables were included for comparative analysis. First, the number of inmates in the facility was coded as a proxy for the economy of scale for the facility. Second, the age of the facility (measured in years) was coded to address the argument that newer facilities-independent of ownership-are likely to be more costeffective because they are architecturally more sound and require less staff to manage. The third independent variable, the security level of the facility, was coded as 1 = minimum security, 2 = mixed (minimum/medium) security, 3 = medium security, and 4 = maximum security. The final independent variable, used for statistical diagnostic purposes, was the year of data collection, which was coded to control for economic fluctuations in dollar amounts over time (e.g., due to inflation).

#### Statistical Analysis

The data were analyzed through correlation analysis and ordinary least squares (OLS) regression analysis. (For a comprehensive discussion of the applicability of both correlation and regression models in meta-analyses, see Hedges and Olkin 1983). The standardized effect size estimates were regressed on the independent variables to determine whether the public or private "ownership" of a prison could significantly predict the per diem cost of the facility in comparison to the other measured characteristics of the institution.

### RESULTS AND DISCUSSION

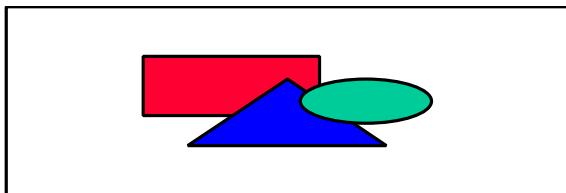
Table I displays the descriptive statistics for the effect size estimates and each of the independent variables. The mean unstandardized effect size estimates show an inmate cost per day advantage of \$2.45 for private prisons (the standardized estimates being 0.047 and -0.056 for public and private prisons, respectively). Moving beyond a simple cost comparison, however, the results from the correlation analysis reported in Table 2 are much less favorable to the public choice-efficiency hypothesis. Specifically, the analyses indicate that the ownership of a correctional facility is an insignificant predictor of the standardized measure of inmate cost per day ( $r = -.038$ ,  $p > .05$ ).

Conversely, each of the independent variables representing institutional characteristics is statistically significant. The number of inmates in the facility, as a proxy for the economy of scale achieved by the institution, is a strong predictor of a prison's daily per diem cost as indicated by the magnitude of the inverse relationship ( $r = -.345$ ). Thus, the larger the inmate population, the lower the costs of housing any one inmate. Additionally, consistent with the arguments posited by critics of private prison management that older facilities are likely to be more expensive, the age of the facility is a strong predictor of an institution's daily per diem cost ( $r = .511$ ). Finally, the security level of the facility is a strong and significant predictor of the standardized effect size estimate ( $r = .347$ ), where higher custody facilities are more expensive to operate.

Additional analyses were conducted to ensure that the results from the correlation analysis were not artifacts of the methodology. First, the insignificant correlation (see Table 2) between the year of data collection and the effect size estimate ( $r = -.225$ ,  $p > .05$ ) indicates that inflation did not differentially affect the estimates for either public or private prisons. Second, despite the absence of a significant bivariate relationship between the ownership variable and the effect size estimate, a test for an indirect relationship was conducted to determine whether the ownership variable would influence the effect size estimate in conjunction with another independent variable. Specifically, separate regression analyses were conducted between the ownership variable and the standardized effect size estimate, controlling for each of the institutional characteristics individually, to determine whether the variation left unexplained would "release" the effect of the ownership variable (Hanushek and Jackson 1977; Sharpe and Roberts 1997). Such an effect was not produced in any of the equations; in each one, the ownership variable was still an insignificant predictor of a facility's inmate cost per day (see Table 3).

Finally, an analysis was conducted to compare the cost estimates between public and private prisons within each security level to assess whether private prisons yield a lower cost for certain types of facilities. Table 4 shows that for both mixed level and maximum security prisons, the private institutions had a lower daily per diem cost. In minimum and medium security institutions, however, the public facilities fared slightly better. However, none of the differences in costs was statistically significant.

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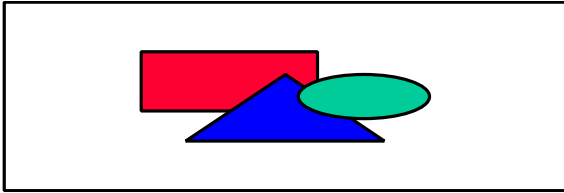
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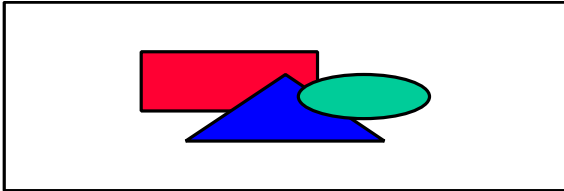
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These additional diagnostic analyses indicate that the results of the original correlation analysis (see Table 2) accurately reflect the state of the empirical literature on the cost effectiveness of private versus public prison management. These findings, however, should be viewed with caution for at least two reasons. First, because the sample was limited to adult male prisons, the results may not be applicable to community corrections institutions (e.g., halfway houses, boot camps), jails, or institutions for juveniles and/or females; nor may they be generalizable to partially privatized prisons (e.g., leases or private contracts for specific services). Second, the available data precluded the inclusion of measures of the quality of service provision. It is possible (yet still an empirical uncertainty) that private prisons offer more amenities and a better quality of inmate life at a similar cost to public institutions.

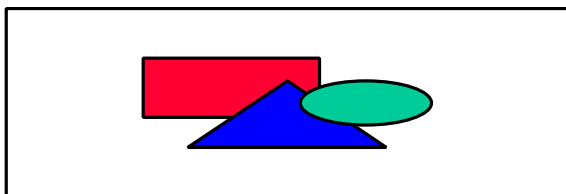
In spite of these limitations, the fact that the institutional characteristics (other than ownership) were the significant predictors of a prison's daily per diem cost offers empirical support to the arguments of critics of private prison management that challenge the public choice-efficiency hypothesis. Overall, the results indicate that regardless of the owner of the facility, it is the economy of scale achieved by the prison, its age, and its security level that largely determine its daily per diem cost.

**CONCLUSIONS**

These conclusions have important implications for both correctional policy makers and researchers. First, this analysis provides policy makers with a more realistic and cautious assessment of the relative efficiency (or lack thereof) of private prisons. Although specific privatization policy alternatives may result in modest cost savings (e.g., private prison construction and private contracts for specific services such as rehabilitation and medical programs), relinquishing the responsibility of managing prisons to the private sphere is unlikely to alleviate much of the financial burden on state correctional budgets.

Second, this study may encourage researchers to evaluate more rigorously the cost-effectiveness of other forms of correctional privatization. For example, efforts to privatize female facilities, juvenile institutions, jails, and halfway houses have yet to be evaluated in a systematic manner (i.e., beyond the case study method). The correctional literature also suffers from a scarcity of large-scale studies of the quality of service provision in public versus private prisons, such as the quality and availability of treatment services and overall amenities. To the extent that privatization is viewed as a cure for the problems facing corrections policy makers, the scientific examination of these alternatives should further clarify the cost-effectiveness portion of the correctional privatization debate. Only by doing so may we avoid what Miller (1996) labels getting "caught with our panacea down around our ankles" (p. 77).

TABLE 4:



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**[Footnote]**

NOTES

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1. In broad terms, "privatization" refers to the process whereby public services, which have traditionally been carried out by federal, state, and/or local governments, are administered by private agencies (Chandler and Plano 1988, p. 100).
2. Since the opening of the first modern privately owned and operated prison in 1984, 91 new facilities had opened for operation as of 1995 (Thomas and Bolinger 1996, p. 30).
3. Lease-purchasing agreements, where privately owned property is leased to the government for a specified period (on which the government takes control of the facility), represent one of the more controversial forms of privatization because they do not require voter approval. Although appealing to governmental agencies, such agreements have been criticized for undermining the democratic process and the notion of public accountability.
4. This is not to say that all advocates of correctional privatization explicitly make an appeal to public choice theory. Rather, public choice theory is used here to provide a theoretical context for the privatization argument; and, to the extent that supporters of privatization emphasize the issue of efficiency, they are (at least) implicitly adopting a public choice perspective.
5. Dilulio (1991, pp. 180-211), an often visible champion of the "virtues" of the private sphere, remains skeptical of the notion that market competitiveness can provide adequate prison services. He argues that tasks such as trash collection, where private agencies may be useful in a service-provision capacity, is a qualitatively different task than inmate management. Consequently, Dilulio concludes that the management of incarcerated persons warrants exclusive public management.

**[Footnote]**

6. Unfortunately, with few exceptions, data regarding the quality of treatment were unavailable. Although a theoretically separate issue from efficiency, a treatment-oriented variable would have been useful in this study. This may be an instance where a particularly well-done independent study (see Logan and McGriff 1989) would be more informative.

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The authors would like to thank Don Gibbons for his comments and editorial assistance on early versions of this article.

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