

# Determinants of Civil Rights Filings in Federal District Court by Jail and Prison Inmates

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This article uses panel data estimation techniques to examine the relation between the number of federal court civil filings by inmates and jail and state prison populations (and, hence, the relation between jail and prison inmate filing rates) both before and after the effective date, in 1996, of the Prison Litigation Reform Act (PLRA). The research issue matters for several reasons. First, the amount of litigation by inmates is a crucial component of the regulatory regime governing jails and prisons and thus what factors drive filings, and by how much, deserves close attention and assessment. In addition, the PLRA was a major congressional attempt to control and ration litigation; understanding its effects in finer gauge seems itself worthwhile. Finally, we hope to show, methodologically, how research about litigation rates can be carried out sensitively, even if the litigation results from case filings by two separate populations. We make three major findings. (1) As expected, inmate filings vary positively with prison population. However, the relationship with jail population is less secure. (2) As the prison proportion of inmates in a particular state increases, so too does the number of filings. (3) The PLRA's passage has significantly lessened but not eliminated this prison proportion effect.

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## I. INTRODUCTION

On any given day, there are over two million people incarcerated in jails and prisons in the United States.<sup>1</sup> In the course of a year, millions more spend at least a day behind bars. About 5 percent of the current American population will serve time in a prison during their lifetimes.<sup>2</sup> While these millions of inmates are incarcerated, they are subject to the comprehensive control and governance of the institutions that hold them—yet federal, state, and local correction and detention facilities are often opaque to public view and quite unregulated by public prescriptions. The only universal accountability mechanism is the inmate lawsuit seeking damages or some kind of remedial action for injury inflicted by official misconduct.

Inmate litigation serves a regulatory function, substituting damage and injunctive actions brought by inmates, as “private attorneys general,” for other more centralized kinds of regulation. Since the late 1960s, prison and jail inmates have brought a very large number of civil lawsuits against custodial officials in federal and state court. The state court cases, on which very little information is available, vary with state law; the federal civil cases are largely damage actions for a facility’s alleged noncompliance with federal constitutional requirements.<sup>3</sup> In 1995, at the federal litigation’s numerical peak, inmates brought nearly 40,000 new lawsuits categorized as “prisoner civil rights cases” in federal court—almost a fifth of the federal civil docket.<sup>4</sup> A federal statute passed in 1996, the Prison Litigation Reform

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<sup>1</sup>Paige M. Harrison & Jennifer C. Karberg, U.S. Dep’t of Justice, *Prison and Jail Inmates at Midyear 2002* (Apr. 2003, NCJ 198877).

<sup>2</sup>Thomas P. Bonczar & Allen J. Beck, U.S. Dep’t of Justice, *Lifetime Likelihood of Going to State or Federal Prison* (Mar. 1997, NCJ 160092), available at <http://www.ojp.usdoj.gov/bjs/pub/pdf/llgsfp.pdf>.

<sup>3</sup>See, e.g., Roger A. Hanson & Henry W.K. Daley, U.S. Dep’t of Justice, *Challenging the Conditions of Prisons and Jails: A Report on Section 1983 Litigation* (Dec. 1994, NCJ 151652). In addition, inmates bring thousands of habeas actions and the like—quasi-criminal actions seeking review of criminal convictions or sentences, which we are not concerned with here.

<sup>4</sup>These and all filing statistics are derived from Federal Judicial Center, *Federal Court Cases: Integrated Data Base, 1970–2000* (ICPSR Study No. 8429, last updated Apr. 25, 2002), and Federal Judicial Center, *Federal Court Cases: Integrated Data Base, 2001* (ICPSR Study No. 3415, last updated June 19, 2002) [hereinafter, collectively, *AO District Court Database*]. The code we used to assemble the database and derive the numbers in text are available as the Technical Appendix to Margo Schlanger, *Inmate Litigation*, 116 *Harv. L. Rev.* 1555 (2003)

Act,<sup>5</sup> had the immediate effect of sharply reducing filings, to just 26,000 in 1997. Notwithstanding the slow subsequent growth of prison and jail populations, federal civil filings by inmates have continued to decline slowly since that time, to a 14-year low of 22,000 in 2001.<sup>6</sup>

Both the litigation itself and the statutory regime change of the PLRA have commanded substantial policy and scholarly attention. Jail and prison administrators and officials have long been concerned with both their liability exposure and their need to respond to the high-volume litigation.<sup>7</sup> Judges and associated researchers have sought ways to reduce the docket's volume and to process the cases more efficiently.<sup>8</sup> Legal researchers have examined the doctrinal framework in which the cases are decided<sup>9</sup> and the filing trends and outcomes of the cases.<sup>10</sup> The PLRA has provoked a litera-

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[hereinafter Schlanger, Inmate Litigation], available at [http://www.law.harvard.edu/faculty/schlanger/publications/inmate\\_tech\\_appendix](http://www.law.harvard.edu/faculty/schlanger/publications/inmate_tech_appendix) [hereinafter Schlanger, Inmate Litigation Technical Appendix]. For present purposes, we exclude habeas cases from the civil docket.

<sup>5</sup>Pub. L. No. 104-134, §§ 801-810, 110 Stat. 1321, 1321-66 to 1321-77 (Apr. 26, 1996) (codified at 11 U.S.C. § 523; 18 U.S.C. §§ 3624, 3626; 28 U.S.C. §§ 1346, 1915, 1915A, 1932; 42 U.S.C. §§ 1997a-1997h). The PLRA was part of the Omnibus Consolidated Rescissions and Appropriations Act of 1996, Pub. L. No. 104-134, 110 Stat. 1321.

<sup>6</sup>See AO District Court Database, *supra* note 4; again, the code used to derive filings figures is part of Schlanger, Inmate Litigation Technical Appendix, *supra* note 4.

<sup>7</sup>For expressions of such concern over the past three decades, see, e.g., James V. Bennett, Who Wants to Be a Warden, 1 *New Eng. J. on Prison L.* 69 (1974); William C. Collins, *Am. Corr. Ass'n*, The Role of House Counsel in Corrections: A Job Task Analysis (1981); Lynn S. Branham, Limiting the Burdens of *Pro Se* Inmate Litigation: A Technical-Assistance Manual for Courts, Correctional Officials, and Attorneys General (ABA 1997).

<sup>8</sup>See, e.g., Federal Judicial Center, Report of the Study Group on the Caseload of the Supreme Court (1972), reprinted in 57 *F.R.D.* 573, 586-88 (1972) (Paul A. Freund, Chair); Warren E. Burger, Chief Justice Burger Issues Yearend Report, 62 *A.B.A. J.* 189, 190 (1976); Federal Judicial Center, Recommended Procedures for Handling Prisoner Civil Rights Cases in the Federal Courts (1980); Marie Cordisco, Pre-PLRA Survey Reflects Courts' Experiences with Assessing Partial Filing Fees in *In Forma Pauperis* Cases, *FJC Directions*, June 1996, at 25; Federal Judicial Center, Resource Guide for Managing Prisoner Civil Rights Litigation, with Special Emphasis on the Prison Litigation Reform Act (1996).

<sup>9</sup>See, e.g., Michael B. Mushlin, *Rights of Prisoners* (3d ed. 2003) (Vol. 3 includes a table of authorities with a 26-page listing of law review articles).

<sup>10</sup>See, e.g., Schlanger, Inmate Litigation, *supra* note 4, and sources cited therein at 1560-61 nn.14-15.

ture of commentary.<sup>11</sup> Only a quite limited amount of work has been done, however, actually analyzing the impact of the litigation system on either inmate or official behavior.<sup>12</sup>

This project is an attempt to get a better handle on some of the underlying facts that would allow such analysis. It uses panel data estimation techniques to examine the relation between the number of federal court civil

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<sup>11</sup>See, e.g., John Boston, *The Prison Litigation Reform Act: The New Face of Court Stripping*, 67 *Brook. L. Rev.* 429 (2001); Lynn S. Branham, *Of Mice and Prisoners: The Constitutionality of Extending Prisoners' Confinement for Filing Frivolous Lawsuits*, 75 *S. Cal. L. Rev.* 1021 (2002); B. Patrick Costello, Jr., "Imminent Danger" Within 28 U.S.C. § 1915(g) of the Prison Litigation Reform Act: Are Congress and Courts Being Realistic?, 29 *J. Legis.* 1 (2002); Amy Petré Hill, *Death Through Administrative Indifference: The Prison Litigation Reform Act Allows Women to Die in California's Substandard Prison Health Care System*, 13 *Hastings Women's L. J.* 223 (2002); Susan N. Herman, *Slashing and Burning Prisoners' Rights: Congress and the Supreme Court in Dialogue*, 77 *Or. L. Rev.* 1229 (1998); James E. Robertson, *The PLRA and the New Right-Remedy Gap in Institutional Reform Litigation*, 38 *Crim. L. Bull.* 427 (2002); James E. Robertson, *The Jurisprudence of the PLRA: Inmates as "Outsiders" and the Counter-majoritarian Difficulty*, 92 *J. Crim. L. & Criminology* 187 (Fall 2001); Roger Roots, *Of Prisoners and Plaintiffs' Lawyers: A Tale of Two Litigation Reform Efforts*, 38 *Willamette L. Rev.* 210 (2002); Schlanger, *Inmate Litigation*, supra note 4.

<sup>12</sup>Many scholars have written about the large-scale injunctive litigation and its complex relationship with organizational practice in jails and prisons. See, e.g., *Courts, Corrections, and the Constitution: The Impact of Judicial Intervention on Prisons and Jails* (John J. DiIulio, Jr. ed. 1990); Malcolm M. Feeley & Edward L. Rubin, *Judicial Policy Making and the Modern State: How the Courts Reformed America's Prisons* (1998); M. Kay Harris & Dudley P. Spiller, Jr., *After Decision: Implementation of Judicial Decrees in Correctional Settings* (1977); Wayne N. Welsh, *Counties in Court: Jail Overcrowding and Court-Ordered Reform* (1995). Closer to the precise topic flagged in the text—the impact on the behavior of jail and prison officials not of the aberrational, huge class action case but of the run-of-the-mill damage action—is Jim Jacobs's insightful work describing the impact on correctional practice of the "prisoners' rights movement," whose paradigm tactic was litigation. See, e.g., James B. Jacobs, *The Prisoners' Rights Movement and Its Impacts*, in *New Perspectives on Prisons and Imprisonment* 33 (1983); see also Kathleen Engel & Stanley Rothman, *The Paradox of Prison Reform: Rehabilitation, Prisoners' Rights, and Violence*, 7 *Harv. J.L. & Pub. Pol'y* 413 (1984). And there is, finally, a large literature theorizing somewhat generally about how constitutional tort actions, of which inmate damage lawsuits are one type, affect the organizational behavior of governmental defendants. See, e.g., Peter H. Schuck, *Suing Government: Citizen Remedies for Official Wrongs* (1983); Jerry L. Mashaw, *Civil Liability of Government Officers: Property Rights and Official Accountability*, 42 *Law & Contemp. Probs.* 8, 26–29 (1978); Larry Kramer & Alan O. Sykes, *Municipal Liability Under § 1983: A Legal and Economic Analysis*, 1987 *Sup. Ct. Rev.* 249 (1987); John C. Jeffries, Jr., *Disaggregating Constitutional Torts*, 110 *Yale L.J.* 259 (2000); Daryl J. Levinson, *Making Government Pay: Markets, Politics, and the Allocation of Constitutional Costs*, 67 *U. Chi. L. Rev.* 345 (2000). But there are few examples actually examining the ways inmates' damage actions function concretely to influence correctional organizational practice. They include Jim Thomas, *Prisoner Litigation: The Paradox of the Jailhouse Lawyer* (1988) [hereinafter Thomas, *Prisoner Litigation*], and Schlanger, *Inmate Litigation*, supra note 4.

filings by inmates and jail and state prison populations (and, hence, the relation between jail and prison inmate filing rates) both before and after the effective date of the Prison Litigation Reform Act. The research issue matters for several reasons. First, the amount of litigation is a crucial component of the regulatory regime. What factors drive filings, and by how much, deserves close attention and assessment. In addition, the PLRA was a major congressional attempt to control and ration litigation; understanding its effects in finer gauge seems itself worthwhile. Finally, we hope to show, methodologically, how research about litigation rates can be carried out sensitively, even if the litigation results from case filings by two separate populations.

We make three major findings. (1) As expected, inmate filings vary positively with prison population; but the relationship with jail population is less secure. (2) As the prison proportion of inmates in a particular state increases, so too does the number of filings. (3) The PLRA's passage has lessened but not eliminated this prison proportion effect.

## II. HYPOTHESES AND PRIOR WORK

We begin with three hypotheses. (1) Inmate filings vary positively with both prison and jail population.<sup>13</sup> (2) Prior to the PLRA, the positive effect on inmate filings of growth in prison populations was larger than the corresponding effect of growth in jail populations. (3) The dampening impact of the PLRA on new filings is stronger with respect to filings by prisoners than those by jail inmates.

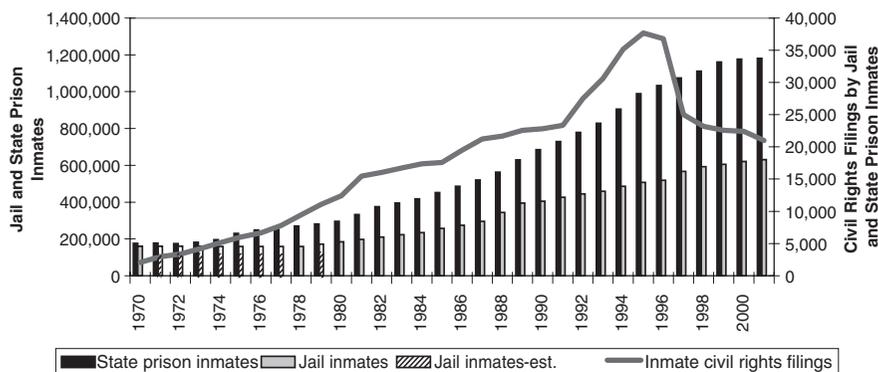
### *A. The Relationship Between Prison and Jail Population and Inmate Filings*

One would expect the amount of litigation brought by inmates to relate positively to the number of incarcerated persons, both because more people should mean more complaints and because crowding might actually worsen conditions. And, indeed, Figure 1's representation of number of cases and

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<sup>13</sup>To be completely clear about terms, a "jail" is paradigmatically a county or city facility that houses pretrial defendants who are unable to make bail, misdemeanor offenders, relatively short-term felony offenders (the term varies by state—most often, it's under a year, but it can be far more, see, e.g., text accompanying note 50, *infra*), and short- and long-term offenders awaiting transfer to a state prison. A prison, by contrast, is a state (or federal) facility that houses long-term felony offenders. One of us has argued at some length in a previous article that understanding how inmate litigation affects correctional institutions requires distinguishing between these two different types of correctional facilities. See Schlanger, *Inmate Litigation*, *supra* note 4.

Figure 1: State and local inmates and federal civil rights filings, fiscal years 1970–2001.



SOURCES: District court filings: Administrative Office of the U.S. Courts. Inmate population figures: Bureau of Justice Statistics. See *supra* note 14 for details.

number of inmates, over time, demonstrates that both incarcerated population and filings in federal district court by inmates have gone up over time, until the passage of the PLRA in 1996.<sup>14</sup>

<sup>14</sup>District court filings are derived from AO District Court Database, *supra* note 4; see Schlanger, *Inmate Litigation Technical Appendix*, *supra* note 4, for details. Federal prisoners are not included in the inmate population numbers and, correspondingly, the filing figures exclude filings in which the defendant is identifiably federal (those cases, roughly speaking, brought by federal inmates, see *infra* note 53).

State prison figures show all prisoners in custody on December 31 of the relevant year, including both adults and juveniles in adult facilities and regardless of sentence or sentenced status. (Custody counts differ slightly from counts of prisoners “under the jurisdiction” of incarcerating authorities; prisoners are counted based on where they are housed, not the identity of their incarcerating authority.) For states that run unified jail/prison systems, all inmates are classified as state prisoners. The sources are: 1970: U.S. Dep’t of Justice, *Prisoners in State and Federal Institutions for Adult Felons: 1968–1970*, Nat’l Prisoner Statistics Bull., Apr. 1972, at 22, tbl. 10c.; 1971–1973, U.S. Dep’t of Justice, *Prisoners in State and Federal Institutions on December 31, 1974*, Nat’l Prisoner Statistics Bull., June 1976, at 14, tbl. 1; 1974: *id.* at 36, app. 2, tbl. 1; 1975: 1975 U.S. Dep’t of Justice, *Prisoners in State and Federal Institutions on December 31, 1975*, Nat’l Prisoner Statistics Bull., Feb. 1977, at 36 app. 2, tbl. 1; 1976: U.S. Dep’t of Justice, *Prisoners in State and Federal Institutions on December 31, 1977*, Nat’l Prisoner Statistics Bull., Feb. 1979, at 32, app. 2, tbl. 1; 1977–1998: Bureau of Justice Statistics, *U.S. Dep’t of Justice, Prisoners in Custody of State or Federal Correctional Authorities (2000)*, available at <http://www.ojp.usdoj.gov/bjs/data/corpop05.wk1>; 1999–2001: unpublished data kindly provided by the Bureau of Justice Statistics.

The sources for nationwide jail statistics are: 1970: U.S. Dep’t of Justice, *National Jail Census 1970*, at 10, tbl. 2 (1971) [hereinafter 1970 Jail Census]; 1978: Bureau of Justice Statistics,

However, Figure 1, and the similar charts that have been included in a number of prior studies, are far from a complete analysis of the relationship between inmate population and filings, for two reasons. First, it is crucial to try to separate the effects of increasing inmate population from the effects of exogenous legal or other trends that might affect litigation rates (we call these effects “time effects” because they occur over time). The problem is methodologically complicated by the fact that population and time effects are not easily pried apart because, nationally, both incarcerated population and inmates’ federal filings increased every year before 1996. Second, what one wants to know about the relationship between inmate population and filings is not so much the fact of a significant relationship (this seems too obvious to be worth too much attention) as that relationship’s magnitude. Figure 1 and charts like it cannot address this issue.

Prior analyses that have included somewhat more formal treatment than simply setting out a picture (as Figure 1 does) have made only limited headway on these two issues. One paper that attempted to estimate the magnitude of the population effect was by a set of researchers associated with the National Center for State Courts, who concluded that “[d]ynamic regression . . . indicates that, in any given year between 1972 and 1998, every increase in the state prisoner population of 10,000 prisoners is associated with an increase of about 269 lawsuits filed.”<sup>15</sup> But although they do not discuss the issue, their model could not settle the issue of whether growth in filings has been driven by growth in prison population or by some independent time effect, because the model did not include any time controls. Thus the coefficient they announce is highly suspect, if understood as an attempt to isolate the effect of incarcerated population on federal filings by inmates.

Seeking some progress on the time versus population issue, one of us looked a little harder in an earlier article at filing and state prison population time trends, separating them out by state, and finding highly statistically significant correlations between prison population and inmate filing

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U.S. Dep’t of Justice, *The 1983 Jail Census*, at 2, tbl. 2 (Nov. 1984, NCJ 95536) [hereinafter 1983 Jail Census]; 1980–2000: Bureau of Justice Statistics, U.S. Dep’t of Justice, *Correctional Populations in the United States (2002)*, available at <http://www.ojp.usdoj.gov/bjs/glance/sheets/corr2.wk1>. No data are available for 1971–1977 and 1979; Figure 1 uses a linear interpolation to derive national estimates.

<sup>15</sup>Fred Cheesman II, Roger A. Hanson & Brian J. Ostrom, *A Tale of Two Laws: The U.S. Congress Confronts Habeas Corpus Petitions and Section 1983 Lawsuits*, 22 *Law & Pol’y* 89, 95 (2000).

numbers in every state but two.<sup>16</sup> This is a somewhat better method of distinguishing between time and population effects, because at the state level, neither changes in filings nor those in prison population have been entirely unidirectional over time. But this earlier paper did not attempt to derive a coefficient or model control variables.

Moreover, both these and all other prior inquiries have had an additional major flaw: they have omitted jail population figures altogether, modeling litigation per prisoner using only state prison population,<sup>17</sup> notwithstanding the evidence that much of inmate litigation is brought by jail inmates.<sup>18</sup> (Some suggestive evidence of an important role for the jail population is found in the appendix of the National Center for State Courts study, although the authors do not comment on it. District court filings are correlated almost as strongly with prison population the year following their filing as with contemporaneous prison population. Perhaps prison population one year is a proxy for jail population the year before.<sup>19</sup>)

In short, it would be very odd if inmate filings did not vary positively with both jail and prison population, and prior work is consistent with this assumption. But prior attempts to either test the existence of relationships or assess their magnitude have been inadequate. (In more casual discussions of aggregate data, other scholars have, perhaps, made somewhat arbitrary decisions of which of these factors to highlight.)

### *B. The Distinction Between Jails and Prisons*

Although we hypothesize that both jail and prison population vary positively with filing numbers, it is one of the important motivations of our current inquiry to examine whether they vary differently. Many of the general dif-

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<sup>16</sup>See Schlanger, *Inmate Litigation*, *supra* note 4, at 1587 n.87.

<sup>17</sup>See, e.g., Cheesman et al., *supra* note 15; John Scalia, U.S. Dep't of Justice, *Prisoner Petitions Filed in U.S. District Courts, 2000, with Trends 1980–2000*, at 4, tbl. 3 (Jan. 2002, NCJ 189430), available at <http://www.ojp.usdoj.gov/bjs/pub/pdf/ppfusd00.pdf>; Theodore Eisenberg & Stewart Schwab, *The Reality of Constitutional Tort Litigation*, 72 *Cornell L. Rev.* 641, 667, tbl. IV (1987); Marc Galanter, *The Day After the Litigation Explosion*, 46 *Md. L. Rev.* 3, 16, tbl. 2, 18 & nn.53, 54 (1986); Judith Resnik, *Tiers*, 57 *S. Cal. L. Rev.* 837, 943–44 (1984) [hereinafter Resnik, *Tiers*].

<sup>18</sup>See *infra* note 20 and accompanying text.

<sup>19</sup>See Cheesman et al., *supra* note 15, at 110, tbl. A (reporting statistically significant correlations between filings and contemporaneous prison population of 0.516, and between filings and prison population one year later of 0.456).

ferences between jails and prisons seem likely to affect the rate of federal district court filings (as measured against inmate population). Among these are facility size and levels of order and amenity, and inmate admission rate, typical length of stay, and criminal status. As will be evident, however, the differences appear to cut in opposite directions. Conclusions about net effects require data—and, unfortunately, not much is reported in prior literature. But what little information exists suggests that jails have faced fewer lawsuits per inmate than do prisons. Reanalysis of data from two prior studies produces an estimate that jail inmates file federal civil litigation at a rate per inmate between 12 and 54 percent of the comparable rate for prison inmates.<sup>20</sup> Results from a national survey administered and analyzed by one of us are consistent: among the prison survey responders, the average annual litigation rate (weighted by prison population) was 15 per 1,000 inmates, while for large jails the corresponding figure was 7 per 1,000 inmates—about half the prison rate.<sup>21</sup>

We next summarize our thoughts on why jails and prisons might experience different inmate litigation rates. Four factors are presented in order, beginning with one difference (level of order and amenity) that we speculate tends to augment inmate filings in jails compared to prisons, moving on to three differences (facility size, criminal status, and population flow) that probably tend to depress jail filings.

*Level of Order and Amenity.* Jails tend to be more chaotic and less orderly than prisons, with more violence and more idleness.<sup>22</sup> All other things being equal, more grievances presumably mean more lawsuits.

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<sup>20</sup>The estimates in text are discussed in detail in Schlanger, *Inmate Litigation*, supra note 4, at 1579–81. The comparison of the jail filing rate to the prison filing rate is equal to the ratio of (jail filing proportion/jail population proportion) to (prison filing proportion/prison population proportion). In Hanson & Daley, supra note 3, 37 percent of inmate cases involved jails, in districts that (taken together) Schlanger established had an incarcerated population 52 percent composed of jail inmates. Thus, jail inmates filed at 54 percent the rate of prison inmates. In Thomas, supra note 12, jail inmates brought 15 percent of all inmate litigation, in a district in which, by Schlanger's calculation, jail inmates made up 60 percent of the incarcerated population. Thus in that sample, the jail litigation rate was about 12 percent of the prison litigation rate.

<sup>21</sup>The survey is described in Margo Schlanger, *Inmate Litigation: Results of a National Survey, Large Jail Network Exchange 2003*, at 1, 2 (National Institute of Corrections 2003), available at <http://www.nicic.org/Pubs/2003/period233.pdf> [hereinafter Schlanger, Survey]. The numbers reported in text are recomputed from survey data.

<sup>22</sup>Detailed discussion of the assertion in text, along with supporting sources, is available in Schlanger, *Inmate Litigation*, supra note 4, at 1686–87 & nn.434–38.

*Facility Size.* Jail inmates are more often than prison inmates held in quite small facilities. For example, 40 percent of jail inmates in 1999 were housed in jail systems that typically held fewer than 600 inmates, compared to only 16 percent of prison inmates in 2000 housed in like-sized prisons. Small facilities are less likely to house a community of jailhouse lawyers, who tend to file or facilitate a large portion of inmate litigation.<sup>23</sup> Moreover, small facilities may be better able than large ones to resolve disputes informally, and therefore produce less litigation. We do not mean to overstate this difference, however; the largest jails, holding one-third of jail inmates, are actually the same size or bigger than the prisons holding the corresponding portion of prison inmates.<sup>24</sup>

*Criminal Status.* State prisoners are nearly all felony convicts, but even among the jail inmates who stay in jail for more than a day or two, a large portion are pretrial<sup>25</sup> and preoccupied with their pending criminal cases. Accordingly, jail inmates dedicate less attention to noncriminal matters, including civil litigation.<sup>26</sup>

*Population Flow.* Annually, jails admit many more people than they incarcerate on an average day; prisons, by contrast, typically admit, in the course of a year, only

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<sup>23</sup>For discussions of jailhouse lawyer communities in prisons and jails, respectively, see Thomas, *Prisoner Litigation*, supra note 12, and Dragan Milovanovic, *Jailhouse Lawyers and Jailhouse Lawyering*, 16 *Int'l J. Soc. L.* 455 (1988).

<sup>24</sup>The figures in text are derived from the 1999 Jail Census and the 2000 Prison Census. See Bureau of Justice Statistics, U.S. Dep't of Justice, *National Jail Census, 1999* (ICPSR Study No. 3318, last updated Aug. 16, 2002) [hereinafter *Bureau of Justice Statistics, 1999 Jail Census*]; Bureau of Justice Statistics, U.S. Dep't of Justice, *Census of State and Federal Adult Correctional Facilities, 2000* (forthcoming ICPSR study; data kindly provided by the Bureau of Justice Statistics). For the code by which the comparison is made, see this article's online Appendix, at <http://www.law.harvard.edu/faculty/schlanger/publications> [hereinafter *Appendix*].

<sup>25</sup>Bureau of Justice Statistics, U.S. Dep't of Justice, *Special Report: Profile of Jail Inmates 1996*, at 2, 7 (Apr. 1998, NCJ 164620) (in 1996, 35 percent of jail inmates were pretrial, 43 percent had received jail sentences, 12 percent had received prison sentences, and 10 percent were not yet sentenced; the median sentence of those with jail sentences was under nine months).

<sup>26</sup>Milovanovic explains, for example, that jailhouse lawyers in jails focus nearly entirely on criminal rather than civil matters. See Milovanovic, supra note 23.

one-half as many people as their average daily population.<sup>27</sup> If more people come in contact with a facility, that ought to increase the amount of litigation measured as a rate of average population. Yet if the simple fact of contact with more people increases litigation amount, the flip side of this difference between jails and prisons is probably even more important. Because the large majority of jail inmates are incarcerated for just a few days,<sup>28</sup> there is far less time for grievances to happen, mature, and fester. It seems to us that this must be a very major factor decreasing jail litigation compared to prison litigation.

Obviously, these factors point in different directions. Moreover, their applicability has varied a good deal over time. For example, inmate admission rates in jails have come down substantially in recent decades.<sup>29</sup> And state-specific trends in other areas are certainly very important. In some states, for example, overcrowded prison systems have on occasion slowed down the transfer of inmates from county jails into state prisons, lengthening the average length of stay for those jails and eliminating the criminal status difference between those jail inmates and state prison inmates.<sup>30</sup> We

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<sup>27</sup>On average, jails that participated in the most recent BJS Jail Census reported annual admissions of over 40 times their average daily populations; the median ratio of admissions to population was 23. See Bureau of Justice Statistics, 1999 Jail Census, *supra* note 24; the code for derivation of figures is in the Appendix, *supra* note 24. The BJS does not ask a similar question in its prison censuses, but the former head of the NIC's Jails Division reported that for prisons, the typical ratio was about one-half. See, e.g., Michael O'Toole, *Jails and Prisons: The Numbers Say They Are More Different than Generally Assumed*, *Am. Jails Mag.* (1996) [hereinafter O'Toole, *Jails and Prisons*], available at <http://www.corrections.com/aja/mags/articles/toole.html>.

<sup>28</sup>O'Toole, *Jails and Prisons*, *supra* note 27 (reporting that in many jails up to 85 percent of the inmates admitted are released within four or five days).

<sup>29</sup>According to the BJS censuses, the median ratio of admissions to population was 46 in 1983, 38 in 1988, 33 in 1993, and 23 in 1999. The census data are available as: Bureau of Justice Statistics, 1999 Jail Census, *supra* note 24; Bureau of Justice Statistics, U.S. Dep't of Justice, National Jail Census, 1993 (ICPSR Study No. 6648, last updated July 13, 1996); Bureau of Justice Statistics, U.S. Dep't of Justice, National Jail Census, 1988 (ICPSR Study No. 9256, last updated June 24, 1997); Bureau of Justice Statistics, U.S. Dep't of Justice, National Jail Census, 1983 (ICPSR Study No. 8203, last updated Feb. 13, 1997). See the Appendix, *supra* note 24, for derivation of ratios.

<sup>30</sup>This happened recently in Alabama and some years ago in Louisiana. See *Ex parte Glover*, 801 So. 2d 1 (Ala. 2001) (chronicling litigation between Alabama's county sheriffs and Department of Corrections, *Barbour County v. Thigpen*, CV-92-388, CV-92-399 (Ala. Cir. Ct.

expect, then, to find a real difference between jail and prison inmate litigation rates, but we do not by any means expect that such a difference will be unvarying or even overwhelming.

In sum, there is empirical reason to believe that jail inmates have, at least in many places, sued their jailers at a substantially lower rate than prison inmates, but, as with population effects, this has not been entirely pinned down by prior studies. Our expectation is that differences will exist, but they may vary over time or by state.

Our analysis of this issue is greatly complicated by two facts: jail population data are extremely scant, and jail and prison populations tend to covary. We treat these two obstacles to our analysis in turn.

*The Scarce Jail Population Data.* Precise population data for jails are collected only for the Bureau of Justice Statistics National Jail Censuses, which are done just once every five or six years.<sup>31</sup> In inter-Census years, the Bureau of Justice Statistics (BJS) administers what are known as National Jail Surveys,

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Montgomery), over Alabama state inmates left in county jails by the Department of Corrections); *City of Shreveport v. Caddo Parish*, 658 So. 2d 786, 789 (La. Ct. App. 1995) (“During the mid to late 1980’s, . . . the DOC was unable to accommodate the large number of convicted felons committed to its custody, causing these DOC prisoners to back up in the parish jails.”). See generally *Hamilton Plaintiffs v. Williams Plaintiffs*, 147 F.3d 367 (5th Cir. 1998). And more importantly for our purposes, because it is such a large state and has so much influence on national results, something similar happened in Texas. See *Tarrant County, Comm’rs Court v. Markham*, 779 S.W.2d 872, 874 (Tex. App. 1989) (“In order to meet its obligations under the *Ruiz* settlement [see *Ruiz v. Estelle*, 503 F. Supp. 1265 (S.D. Tex. 1980), aff’d in part and rev’d in part, 679 F.2d 1115, amended on reh’g, 688 F.2d 266 (5th Cir. 1982)], the state has adopted a policy of refusing to accept inmates from county jails, committed to T.D.C., as is the state’s obligation under law. . . . [I]nmates who have been committed to T.D.C. by state courts, are forced to languish in jails of the various counties throughout the state, because of the state’s failure to accept the inmates committed to T.D.C.”).

<sup>31</sup>Population data from the Jail Censuses are published as: 1970 Jail Census, *supra* note 14; Bureau of Justice Statistics, U.S. Dep’t of Justice, *Census of Jails and Survey of Jail Inmates, 1978*, preliminary report (1979, NCJ 55172); 1983 Jail Census, *supra* note 14; Bureau of Justice Statistics, *Census of Local Jails, 1988* (Feb. 1990, NCJ 121101); Craig A. Perkins, James J. Stephan & Allen J. Beck, U.S. Dep’t of Justice, *Jails and Jail Inmates 1993* (Apr. 1995, NCJ 151651), available at <http://www.ojp.usdoj.gov/bjs/pub/pdf/jaji93.pdf>; James J. Stephan, U.S. Dep’t of Justice, *Census of Jails, 1999* (Aug. 2001, NCJ 186633), available at <http://www.ojp.usdoj.gov/bjs/pub/pdf/cj99.pdf>. An additional jail census done in 1972, Law Enforcement Assistance Admin., U.S. Dep’t of Justice, *The Nation’s Jails: A Report on the Census of Jails from the 1972 Survey of Inmates of Local Jails (1975)*, is widely considered unreliable.

gathering data from select jails only.<sup>32</sup> BJS uses the survey results to estimate annual national jail population.<sup>33</sup> But the Jail Surveys are not designed to derive reliable state-by-state estimates, which is what we need for our analysis. The easiest estimation technique is an interpolation from the Census data, by state, for each inter-Census year. We chose a quadratic interpolation method, fitting the actual jail population series to a second-order polynomial equation in time for each state and using the predicted values. This approach captures nonlinearity in movements in jail populations.

We also tried a second, much more labor-intensive technique—extrapolating from the Jail Survey data for inter-Census years to estimate the within-state change in the jail population. This technique was available for only a subset of states and a subset of years, and when we ran our models for those states and years, it produced substantially similar results to the interpolation method. So, reassured by these tests on the relevant subsets, we report fuller results with interpolated jail data below.<sup>34</sup> Yet while we are confident that our estimated jail population figures are the best that can be derived from the limited data that exist, the need to use estimates rather than real figures necessarily smoothes out the values, flattening out some of the intra-state variation over time that might help our analysis along.

*The Correlation Between Jail and Prison Population.* In each state, both jail and prison population ultimately (largely) derive from the same criminal justice policy. So it only makes sense that the two figures tend to covary. Indeed, the degree of correlation is quite high. It goes almost without saying that large states tend to have both large jail and large prison populations, and small states, small jail and small prison populations. But, less obvious and more important, it turns out to be true, as well, that intra-state changes in jail and prison population over time are also highly correlated. Comparing each state's rate of change in jail population from 1983 to 1999 (the first

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<sup>32</sup>In each inter-Census period, the survey list has included *every* jail over some set size in the survey list, as well as a basically random sample of smaller jails. Each jail selected, whether because of its size or at random, is surveyed each year of the inter-Census period.

<sup>33</sup>These are currently published in an annual series, Prison and Jail Inmates at Midyear. See, e.g., Harrison & Karberg, *supra* note 1; series available at <http://www.ojp.usdoj.gov/bjs/pubal/p2.htm#pjmidyear>. Prior to 1995, the survey results were published in a predecessor series, Jail Inmates, see, e.g., Bureau of Justice Statistics, U.S. Dep't of Justice, Jail Inmates 1982 (Feb. 1983, NCJ 87161), and in Perkins et al., *supra* note 31.

<sup>34</sup>Further details of these calculations are available in the Appendix. See *supra* note 24.

and last year of actual rather than interpolated data) to the rate of change in state prison population demonstrates that the two figures are significantly correlated (the coefficient of the correlation is 0.32). This poses a serious challenge for efforts to pull jail and prison population apart for separate estimation.

### *C. The Varying Impact of the PLRA*

One of the very notable features of Figure 1 is the 1996 cliff in filings, which clearly resulted from the Prison Litigation Reform Act's sharp procedural and remedial constriction. Most particularly, the Act, which went into effect in April 1996, ended free access to federal district court for all inmates, and effectively ended access altogether for many indigent repeat litigants.<sup>35</sup> The amount of new inmate litigation in the six months following passage of the statute was down 24 percent from the six months preceding,<sup>36</sup> even before the courts had a chance to put the new rules fully into effect. Our third and final hypothesis is that the PLRA is likely having a larger dampening effect on prison rather than jail filings, because the new statutory restrictions on access to federal court have mostly been held to apply only to those litigants incarcerated at the time they bring suit—not to former inmates, even where the claim arose during a past incarceration.<sup>37</sup> Again, survey results seems to confirm this point: two-thirds of survey responders from large jails compared to just one-third of responders from prison agencies reported that the

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<sup>35</sup>The filing fee is currently \$150 for each lawsuit, 28 U.S.C. § 1914(a) (2000), and there is no exemption available for inmates, although they may be authorized to pay the fee over an extended period of time. 28 U.S.C. § 1915(b)(1)–(2) (2000). Inmates who have had three prior actions or appeals dismissed as frivolous or malicious, or for failure to state a claim upon which relief may be granted, may file new litigation only after paying the full fee in advance, unless they face “imminent danger of serious physical injury.” 28 U.S.C. § 1915(g) (2000). For a thorough discussion of the impact of the PLRA on filings incentives and numbers, see Schlanger, *Inmate Litigation*, supra note 4.

<sup>36</sup>Figures derived from AO District Court Database, supra note 4; see Appendix, supra note 24.

<sup>37</sup>See 42 U.S.C. § 1997e(a), (d)(1), (e); 28 U.S.C. § 1915(h) (2000) (each referring to “prisoner[s]” as the regulated group); e.g., *Ahmed v. Dragovich*, 297 F.3d 201, 210 n.10 (3d Cir. 2002) (citing cases construing these provisions to exclude former prisoners from PLRA coverage). This point is developed at greater length in Schlanger, *Inmate Litigation*, supra note 4, at 1641–42. One theory in support of this reading of statutory reach might be that, compared to former inmates, currently incarcerated inmates have easier and more meaningful access to internal grievance procedures, as well as more time on their hands and therefore fewer disincentives to file frivolous cases.

PLRA had had “no impact” on the number of inmate lawsuits.<sup>38</sup>

So to summarize our hypotheses, we expect to find that incarcerated population levels vary positively with inmate filings, and we expect that the relationship will be somewhat different for jail and state prison population; if prior reports are accurate, the relationship between jail population and filings should be somewhat less steep than the relationship between prison population and filings. The PLRA should be dampening the relationship between prison population and filings; its effect on the jail population-filings relationship is less clear.

### III. CONTROLS AND OTHER MODELING DETAILS

Our modeling is informed by our expectations with respect to two other issues. First, we expect time effects to be very substantial. Thus, we need careful attention to separate from the population effects, given the relentless growth of prison and jail population that began in the 1970s and has only just leveled off. Second, we expect state effects to be very important as well.

#### A. *Time Effects*

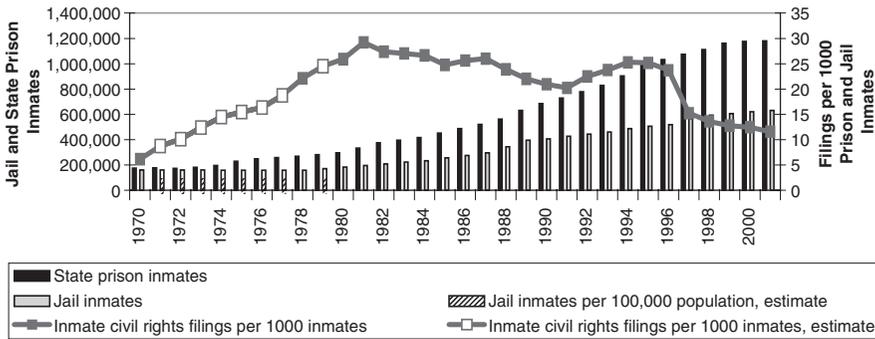
A simple graph of national inmate filings per incarcerated person powerfully suggests that incarcerated population is by no means the only factor influencing inmates’ federal filings. Figure 2 sets out these data, showing filings per 1,000 jail and state prison inmates graphed over jail and state prison incarceration levels from 1970 to 2001.<sup>39</sup> (Note that Figure 2’s illustrated litigation rate calculates litigation rate using a denominator of the sum of jail and state prison inmates. This is not conceptually adequate, given the differences between jails and prisons described above, but it is better than the alternative of entirely omitting jail inmates.)

Figure 2 evinces substantial variation over time in the litigation rate per inmate, which amounts to variation in the impact of population on filings. Working visually, one can divide the 32 years into four time periods; 1970 to 1980 appears extraordinarily expansive; 1981 to 1991 shows significant (although partial) retrenchment; 1992 to 1995 looks like another round

<sup>38</sup>The survey is described in Schlanger, *Survey*, supra note 21. Figures are computed from survey data.

<sup>39</sup>The figure has the same sources and limitations as does Figure 1, see supra note 14.

Figure 2: State and local inmates and federal civil rights filing rates, fiscal years 1970–2001.



SOURCES: District court filings: Administrative Office of the U.S. Courts. Inmate population figures: Bureau of Justice Statistics. See *supra* note 14 for source details.

of expansion, and a large drop in 1996 is followed by modest decline since. Several of these cusps are easy enough to explain substantively. The expansion of the 1970s likely reflects three co-occurring factors: (1) the expanding scope of constitutional rights and remedies for inmates;<sup>40</sup> (2) the increasing familiarity to lawyers and court clerks of the administrative category “prisoner civil rights” as a coding for civil litigation;<sup>41</sup> and (3) the

<sup>40</sup>It was not until *Cooper v. Pate*, 378 U.S. 546, 546 (1964), that the Supreme Court, in its first modern inmate civil rights decision, definitively closed off the earlier “hands-off era” by allowing a federal civil lawsuit to proceed notwithstanding its plaintiff’s status as a prisoner. Cf. Note, *Beyond the Ken of the Courts: A Critique of Judicial Refusal to Review the Complaints of Convicts*, 72 *Yale L.J.* 506 (1963) (popularizing the phrase “hands off,” and listing and quoting exemplar cases). Federal courts proceeded to create the category of correctional constitutional law. See, e.g., *Wright v. McMann*, 387 F.2d 519 (2d Cir. 1967) (proscribing certain types of unsanitary and solitary confinement as violating the cruel and unusual punishments clause); *Lee v. Washington*, 390 U.S. 333 (1968) (upholding district court order requiring racial desegregation of Alabama’s prison system); *Jackson v. Bishop*, 404 F.2d 571 (8th Cir. 1968) (forbidding whipping in prison); *Woodhous v. Virginia*, 487 F.2d 889 (4th Cir. 1973) (imprisoning authorities may violate the Constitution by failing to protect inmates from assault by other inmates); *Pugh v. Locke*, 406 F. Supp. 318, 329 (M.D. Ala. 1976) (“The living conditions in Alabama prisons constitute cruel and unusual punishment”; “[a]s a whole they create an atmosphere in which inmates are compelled to live in constant fear of violence, in imminent danger to their physical well-being, and without opportunity to seek a more promising future.”).

<sup>41</sup>The Administrative Office’s published reports did not include a separate case category for inmate civil rights litigation until 1973, although the case code apparently became available to clerks in 1968. See *Annual Report of the Director of the Administrative Office of the United States Courts 1973* (1974), at 158, tbl. 35; 11 *Admin. Office of the United States Courts, Guide*

broadening of inmate access to court via procedural reforms of various kinds, including the new requirement of prison provision of law library resources.<sup>42</sup> The end of that expansion, and perhaps even some of the evident subsequent downturn, seems likely to stem from the natural limit of the latter two factors, combined with Supreme Court authority cabining (although not reversing) the first, substantive expansion. The Court handed down a set of cases in the later 1970s and early 1980s<sup>43</sup> best typified by the conceptually paired precedents *Bell v. Wolfish*<sup>44</sup> and *Rhodes v. Chapman*,<sup>45</sup> which respectively held double celling in a pretrial detention facility and a prison constitutional, and suggested more generally that “[m]aintaining institutional security and preserving internal order and discipline are essential goals that may require limitation or retraction of the retained constitutional rights of both convicted prisoners and pretrial detainees,”<sup>46</sup> and that “the Constitution does not mandate comfortable prisons.”<sup>47</sup>

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to Judiciary Policies and Procedures, at II-88 (1985) (setting out case category codes “used since December 1968”) (on file with authors); see also Resnik, Tiers, *supra* note 17. Nonetheless, the boundary between habeas and nonhabeas civil actions was extremely unclear until *Preiser v. Rodriguez*, 411 U.S. 475, 500 (1973) (“when a state prisoner is challenging the very fact or duration of his physical imprisonment, and the relief he seeks is a determination that he is entitled to immediate release or a speedier release from that imprisonment, his sole federal remedy is a writ of habeas corpus”).

<sup>42</sup>See, e.g., *Johnson v. Avery*, 393 U.S. 483 (1969) (invalidating ban on jailhouse lawyering); *Haines v. Kerner*, 404 U.S. 519 (1972) (pro se complaints, “however inartfully pleaded,” must be held by federal courts to “less stringent standards than formal pleadings drafted by lawyers”); *Bounds v. Smith*, 430 U.S. 817, 824–25, 828 (1977) (finding it “indisputable that indigent inmates must be provided at state expense with paper and pen to draft legal documents, with notarial services to authenticate them, and with stamps to mail them,” and holding that “the fundamental constitutional right of access to the courts requires prison authorities to . . . provid[e] prisoners with adequate law libraries”).

<sup>43</sup>See *Estelle v. Gamble*, 429 U.S. 97, 104 (1976) (officials’ “deliberate indifference to serious medical needs of prisoners” violates the Eighth Amendment, but mere malpractice does not); *Meachum v. Fano*, 427 U.S. 215 (1976) (no constitutional right to hearing prior to nondisciplinary interprison transfer); *Jones v. North Carolina Prisoners’ Labor Union*, 433 U.S. 119 (1977) (no constitutional right to form inmate labor unions); *Olim v. Wakinekona*, 461 U.S. 238 (1983) (no constitutional right to hearing prior to nondisciplinary interstate transfer); *Hewitt v. Helms*, 459 U.S. 460 (1983) (only limited constitutional right to hearing prior to transfer to nondisciplinary administrative segregation).

<sup>44</sup>441 U.S. 520 (1979).

<sup>45</sup>452 U.S. 337 (1981).

<sup>46</sup>*Bell*, 441 U.S. at 546.

<sup>47</sup>*Rhodes*, 452 U.S. at 349.

Until the 1996 Prison Litigation Reform Act, cases like these set the ground rules governing inmate litigation, although there obviously were elaborations of various kinds, so it is very difficult to think of a source of a sudden uptick in inmate litigation rates in the early 1990s.<sup>48</sup> The final cusp, in 1996, is, however, easily explained by the passage of the PLRA, although it presents something of a puzzle to understand why, notwithstanding recent continued (albeit slow) growth in incarcerated populations, Figure 2 demonstrates a continuing decline in litigation rate each year since 1997.

In any event, it is not our purpose here to further explore causes of the evident time trends. Rather, we wish to abstract from these time trends in order to assess the changing impact of inmate population. We define five distinct time periods: 1970 to 1980, 1981 to 1991, 1992 to 1995, 1996, and 1997 to 2001. We cannot pursue the period 1970 to 1980 because the jail data are too scarce. (Neither state nor even national jail data exist from 1971 to 1977, or for 1979. Moreover, the reported national jail population in 1970 and 1978 were nearly the same—160,863 in 1970 and 158,394 in 1978—notwithstanding a simultaneous jump in prison population of over 50 percent. This tends to make us skeptical of even the available jail figures from that period, and also leaves us unable to estimate interim trends.) However, our time hypotheses inform the remainder of our model estimation; we structure our analysis below to follow the periods just identified, with the small additional wrinkle that because the PLRA was passed in April 1996, we expect 1996 itself to be something of a muddle and therefore model it on its own.

### *B. State Effects*

States vary an extraordinary amount in their correctional policies, and have self-evidently had widely varying inmate litigation experience. Although many states' attorneys general worked together in the mid-1990s to restrict inmates' access to federal and state courts,<sup>49</sup> it is clear that officials in some

<sup>48</sup>The phenomenon does not, for example, appear to be a result of cases migrating from the habeas docket into the civil rights docket; habeas filing rates per state prisoner (very few jail inmates file habeas actions, so they may safely be omitted from habeas litigation rates) decreased nearly every year from 1970 to 1994. Derived from AO District Court Database, *supra* note 4; see Appendix, *supra* note 24.

<sup>49</sup>See, e.g., Press Release, Citizens Against Lawsuit Abuse, CALA Praises Attorneys General Efforts; Officials Working to Stop Frivolous Lawsuits by Prisoners (Aug. 2, 1995) (on file with authors) (praising the "move by the National Association of Attorneys General" and describing the coordinated release of "'Top 10' list[s] of the most frivolous suits filed by inmates" by 24 attorneys general).

states perceived inmate litigation as a larger problem than did officials in others. This makes sense for several reasons that leap to mind. Inmate recourse to a federal rather than a state forum likely depends in part on both the absolute and relative hospitability of each. The community of lawyers varies a good deal by state. The level of order and amenity available in prison and/or jail may vary by state. Moreover, many of the factors we identify above as causing differences between jails and prisons themselves differ among states. Most obviously, different states incarcerate different populations in different types of facilities. In Kentucky, for example, inmates may serve sentences of more than five years in county jails.<sup>50</sup> In our home state of Massachusetts, many prisons are county run—and then classified by the Bureau of Justice Statistics as jails.<sup>51</sup> In sum, we expect there to be significant state variation in inmate litigation rates.

We implement this expectation using state fixed effects in our model (that is, one variable per state picks up nontime varying differences across states). We recognize that fuller specification of state effects might be justified on theoretical grounds. It might make sense, for example, to investigate both a state prison effect and a state jail effect. To complicate things even further, it is possible that whatever state effects exist have shifted over time. At various times (recently in Alabama, and in years past in Texas and Louisiana, for example), inmates sentenced to serve time in prison have had their transfer from jail to prison delayed for substantial amounts of time.<sup>52</sup> This shift in the status of many jail inmates (increasing the proportion of sentenced offenders, and probably increasing their frustration about their incarcerated situation) seems highly likely to alter their propensity to litigate. Nonetheless, the limited number of observations do not allow testing of these further refinements.

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<sup>50</sup>See Ky. Rev. Stat. Ann. § 532.100(4) (Banks-Baldwin 1995). There are currently 5,100 felony convicts housed in Kentucky's county jails, telephone interview by Margo Schlanger of Jack Damron, Deputy Gen'l Counsel, Kentucky Dep't of Corrections (Aug. 6, 2003), a very substantial portion of that state's jail population, which numbered 10,373 in 1999. See Bureau of Justice Statistics, 1999 Jail Census, *supra* note 24.

<sup>51</sup>See, e.g., Bureau of Justice Statistics, 1999 Jail Census, *supra* note 24 (including data for the Massachusetts county houses of correction), Mass. Gen. Laws Ann., ch. 279, §§ 19, 23 (1992) (convicts with sentences of up to two-and-one-half years may serve their time in a house of correction).

<sup>52</sup>See sources cited *supra* note 30.

## IV. DATA

We constructed our data set as follows. First, using data collected by the Administrative Office of the U.S. Courts, we created a panel of inmate civil rights filings in federal court against nonfederal defendants, by year by state. These are cases brought in federal court by nonfederal jail and prison inmates.<sup>53</sup> For the reasons explained above, we limited our panel to 1981 on. Our filings data are in regularized fiscal years, October through September.<sup>54</sup> Our population data are nearly all midyear inmate counts. Next, we used Bureau of Justice Statistics sources for prison population, by state by year from 1981 to present.<sup>55</sup> We dropped from our panel states in which jails and prisons are consolidated—Connecticut, Delaware, Hawaii, Rhode Island, and Vermont, as well as Alaska, which has a mostly consolidated system. Because no information on the jail/prison population breakdown is available for these states, they are not usable for our purposes. We also omitted the District of Columbia, which is dissimilar to the states in terms of many prosecution and incarceration policies. Between them, these omitted jurisdictions incarcerate about 2 percent of the nation's incarcerated population. As already discussed, filling in the jail population by state by year was substantially harder, but after a good deal of testing of alternative techniques, we settled on an interpolation approach for filling in inter-Census years.

Although the resulting panel is too large to reprint here,<sup>56</sup> Table 1 gives some sense of the basic data underlying our analyses. It first reports, by state, inmate civil rights filings in federal court in 1983 and 1999 (years picked for

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<sup>53</sup>Nonfederal inmates do occasionally sue federal defendants, especially in the kinds of frivolous lawsuits that get dismissed almost simultaneously with filings (cases bought against the FBI, or the President, or all the members of the Senate, alleging conspiracy theories of various kinds). Because they are brought against federal defendants, these cases are not included in the tallies used for this project. Conversely, federal inmates may occasionally sue nonfederal defendants—the local law enforcement officers who arrested them, for example. These cases *are* included in the various counts. But as a general rule, federal defendants mean federal inmates and nonfederal defendants nonfederal inmates. Prior studies of inmate litigation have relied on this fact.

<sup>54</sup>For details about the construction of this database and the resulting panel data described in the text, see Schlanger, *Inmate Litigation*, *supra* note 4, and Schlanger, *Inmate Litigation Technical Appendix*, *supra* note 4.

<sup>55</sup>For sources, see *supra* note 14.

<sup>56</sup>It is available as part of the Appendix, *supra* note 24.

reasons relating to our jail data, as explained next), as well as in 1995, the peak year for inmate civil rights filings since they began to be tabulated. Table 1 next sets out state prison and jail population in 1983 and 1999 and the percent change between them. We choose these years because Jail Census data are available for them, obviating the need for any fancy estimates, and because they more or less outline our period. Finally, Table 1 reports the percentage of each state's total incarcerated population in jails, a rate that we use in the discussion below.

## V. RESULTS

To assess our hypotheses, we use three econometric models. In each model we use a panel of inmate filings in federal court, by state and year, so that coefficients are identified by changes in the explanatory variables within state rather than the (large) cross-sectional differences across states. In addition to the controls for state and time, the models also include inmate populations and interactions between inmate populations and legal regime. The differences among the models involve how the dependent variable and the error term are specified.

The first model is ordinary least squares regression of the number of federal civil rights filings by inmates (in a given state and year) on prison population and estimated jail population and the above controls, as in the following equation:

$$\begin{aligned}
 \text{Filings} = & \alpha + \beta_1(\text{jail}) + \beta_2(\text{prison}) + \delta_1(\text{jail}, 1996) + \delta_2(\text{prison}, 1996) \\
 & + \gamma_1(\text{jail}, \text{postPLRA}) + \gamma_2(\text{prison}, \text{postPLRA}) + \lambda(\text{state indicators}) \\
 & + \theta_1(1981 - 1991) + \theta_2(1992 - 1995) + \theta_3(1996) + \theta_4(1997 - 2001) \\
 & + \varepsilon
 \end{aligned} \tag{1}$$

The state indicators isolate individual state differences, and the time variables control for exogenous time trends (e.g., changes in the law or its application). Standard errors are corrected for arbitrary forms of heteroskedasticity using the Huber-White correction.

The primary coefficients of interest are  $\beta_1$ ,  $\beta_2$ ,  $\gamma_1$ , and  $\gamma_2$ . A finding that  $\beta_1$  does not equal  $\beta_2$  supports the hypothesis that filings respond differently to changes in jail and prison populations. A finding that  $\gamma_1$  does not equal  $\gamma_2$  supports the hypothesis that the PLRA differentially affected filings from jail and prison inmates. (Recall that we isolate 1996 because the law change took effect midyear and it is not clearly in either the "pre-PLRA" or "post-

Table 1: Inmates and Civil Rights Filings by Circuit and State, Select Years

| Cir. | State                       | Filings |        |        | State Prison Population |           |            | Jail Population |         |            | % Incarcerated Population in Jail |
|------|-----------------------------|---------|--------|--------|-------------------------|-----------|------------|-----------------|---------|------------|-----------------------------------|
|      |                             | 1983    | 1995   | 1999   | 1983                    | 1999      | Change (%) | 1983            | 1999    | Change (%) |                                   |
|      |                             | 15,990  | 36,565 | 21,833 | 378,756                 | 1,112,910 | 194%       | 220,671         | 604,222 | 174%       |                                   |
|      | Total Filings/1,000 inmates | 26.7    |        | 12.7   |                         |           |            |                 |         |            | 35                                |
| 1st  | Maine                       | 9       | 85     | 18     | 947                     | 1,669     | 76         | 560             | 1,113   | 99         | 40                                |
|      | Massachusetts               | 103     | 142    | 53     | 4,532                   | 10,632    | 135        | 3,304           | 10,774  | 226        | 50                                |
|      | New Hampshire               | 19      | 46     | 61     | 459                     | 2,247     | 390        | 475             | 1,592   | 235        | 41                                |
| 2d   | New York                    | 1,309   | 1,788  | 1,387  | 30,924                  | 71,809    | 132        | 16,154          | 33,411  | 107        | 32                                |
| 3d   | New Jersey                  | 263     | 614    | 424    | 9,142                   | 27,165    | 197        | 5,971           | 16,830  | 182        | 38                                |
|      | Pennsylvania                | 1,035   | 1976   | 1,000  | 11,798                  | 36,457    | 209        | 10,170          | 26,996  | 165        | 43                                |
| 4th  | Maryland                    | 443     | 702    | 498    | 12,485                  | 22,729    | 82         | 4,608           | 10,945  | 138        | 33                                |
|      | North Carolina              | 566     | 736    | 337    | 15,485                  | 31,346    | 102        | 3,496           | 13,279  | 280        | 30                                |
|      | South Carolina              | 74      | 632    | 732    | 8,716                   | 21,016    | 141        | 2,690           | 8,780   | 226        | 29                                |
|      | Virginia                    | 914     | 2,143  | 929    | 9,222                   | 30,396    | 230        | 5,719           | 18,235  | 219        | 37                                |
|      | West Virginia               | 125     | 160    | 145    | 1,667                   | 2,880     | 73         | 1,015           | 2,493   | 146        | 46                                |
| 5th  | Louisiana                   | 948     | 1,521  | 759    | 10,516                  | 19,174    | 82         | 8,507           | 25,631  | 201        | 57                                |
|      | Mississippi                 | 202     | 1,032  | 495    | 4,580                   | 13,278    | 190        | 2,498           | 8,886   | 256        | 40                                |
|      | Texas                       | 1,126   | 3,528  | 2,591  | 35,259                  | 148,535   | 321        | 15,224          | 57,930  | 281        | 28                                |
| 6th  | Kentucky                    | 209     | 767    | 387    | 4,641                   | 11,095    | 139        | 3,711           | 10,373  | 180        | 48                                |
|      | Michigan                    | 557     | 1,193  | 434    | 14,510                  | 46,617    | 221        | 7,637           | 15,629  | 105        | 25                                |
|      | Ohio                        | 414     | 732    | 294    | 17,766                  | 46,619    | 162        | 7,116           | 16,638  | 134        | 26                                |
|      | Tennessee                   | 357     | 1,065  | 680    | 7,876                   | 16,812    | 113        | 6,005           | 19,629  | 227        | 54                                |

|      |              |       |       |       |        |         |     |        |        |     |    |
|------|--------------|-------|-------|-------|--------|---------|-----|--------|--------|-----|----|
| 7th  | Illinois     | 682   | 1,210 | 817   | 15,437 | 44,660  | 189 | 8,849  | 16,880 | 91  | 27 |
|      | Indiana      | 197   | 950   | 368   | 9,360  | 18,085  | 93  | 3,599  | 12,787 | 255 | 41 |
| 8th  | Wisconsin    | 221   | 543   | 217   | 4,226  | 18,659  | 342 | 3,030  | 12,559 | 314 | 40 |
|      | Arkansas     | 212   | 965   | 466   | 4,128  | 10,388  | 152 | 1,602  | 4,832  | 202 | 32 |
|      | Iowa         | 209   | 806   | 236   | 2,814  | 7,232   | 157 | 839    | 2,998  | 257 | 29 |
|      | Minnesota    | 42    | 105   | 44    | 2,235  | 5,761   | 158 | 1,954  | 5,002  | 156 | 46 |
|      | Missouri     | 522   | 1,474 | 509   | 8,026  | 26,358  | 228 | 3,783  | 6,940  | 83  | 21 |
|      | Nebraska     | 71    | 291   | 73    | 1,690  | 3,620   | 114 | 844    | 2,189  | 159 | 38 |
| 9th  | North Dakota | 3     | 8     | 1     | 422    | 914     | 117 | 243    | 588    | 142 | 39 |
|      | South Dakota | 19    | 55    | 66    | 830    | 2,492   | 200 | 316    | 1,064  | 237 | 30 |
|      | Arizona      | 521   | 1,224 | 501   | 6,889  | 25,986  | 277 | 2,940  | 10,320 | 251 | 28 |
|      | California   | 587   | 2,480 | 2,297 | 39,373 | 160,687 | 308 | 41,720 | 77,142 | 85  | 32 |
|      | Idaho        | 27    | 73    | 53    | 1,127  | 4,234   | 276 | 604    | 2,809  | 365 | 40 |
|      | Montana      | 102   | 76    | 41    | 783    | 2,367   | 202 | 405    | 1,521  | 276 | 39 |
|      | Nevada       | 101   | 465   | 378   | 3,192  | 9,206   | 188 | 940    | 4,898  | 421 | 35 |
|      | Oregon       | 159   | 220   | 152   | 3,318  | 9,427   | 184 | 2,304  | 6,283  | 173 | 40 |
|      | Washington   | 364   | 470   | 303   | 6,198  | 14,614  | 136 | 3,610  | 10,542 | 192 | 42 |
|      | Colorado     | 146   | 555   | 222   | 3242   | 12,995  | 301 | 2,747  | 9,004  | 228 | 41 |
| 10th | Kansas       | 127   | 259   | 174   | 3,623  | 8,569   | 137 | 1,328  | 4,378  | 230 | 34 |
|      | New Mexico   | 93    | 120   | 96    | 1,936  | 5,124   | 165 | 1,346  | 5,217  | 288 | 50 |
|      | Oklahoma     | 237   | 419   | 358   | 7,025  | 21,098  | 200 | 2,215  | 6,743  | 204 | 24 |
|      | Utah         | 69    | 165   | 37    | 1,234  | 5,505   | 346 | 906    | 4,024  | 344 | 42 |
|      | Wyoming      | 47    | 57    | 22    | 681    | 1,539   | 126 | 341    | 1,005  | 195 | 40 |
| 11th | Alabama      | 804   | 1394  | 705   | 8,855  | 21,227  | 140 | 4,464  | 11,418 | 156 | 35 |
|      | Florida      | 1,167 | 1,861 | 1,328 | 26,229 | 69,596  | 165 | 14,668 | 51,080 | 248 | 42 |
|      | Georgia      | 588   | 1,458 | 1,145 | 15,358 | 42,091  | 174 | 10,214 | 32,835 | 221 | 44 |

SOURCES: District court filings: Administrative Office of the U.S. Courts. Inmate population figures: Bureau of Justice Statistics. See supra note 14 for details.

PLRA regime.) Although the  $\lambda$ s (which capture cross-state differences) and the  $\theta$ s (which capture time differences) are best thought of as controls, they may also be of interest in their own right.

The second approach models a similar equation, but this time as a negative binomial, treating the dependent variable, filings, as an integer count (as it is) that is constrained to vary systematically with the inmate population. In this formulation, we capture the distinction between prison and jail populations by including the “percent of inmates in prison,” overall and after the PLRA’s enactment, as an explanatory variable. These modifications yield Equation (2):

$$\begin{aligned}
 \text{Filings} = & \alpha + (\text{inmate population}) + \omega(\text{percent prison}) \\
 & + \delta(\text{percent prison, 1996}) \\
 & + \gamma(\text{percent prison, postPLRA}) + \lambda(\text{state indicators}) \\
 & + \theta_1(1981 - 1991) + \theta_2(1992 - 1995) + \theta_3(1996) + \theta_4(1997 - 2001) \\
 & + E
 \end{aligned} \tag{2}$$

Because Equation (2) assumes that the number of filings increases with the number of inmates, it cannot be used to derive a filings coefficient for either jail or prison population. It is, on the other hand, sensitive to shifts in the jail or prison composition of each state’s inmate population. (Although the same symbols for the coefficients are used in both models for the variables they have in common, the estimates will differ because of the other differences in the models.)

The third model estimates an ordinary least squares regression of the filing rate per incarcerated person. It also uses the natural logarithm of the filing rate to account for the skew in the distribution. This model has the benefit of being somewhat easy to interpret, as coefficients approximately represent percentage changes in the dependent variable. It also easily accommodates weights to allow us to treat larger states as more important than smaller ones in the calculation of the coefficients. Because more than 75 percent of the observations are greater than 100, we are not worried about the approximation using rates rather than counts of filings.

$$\begin{aligned}
 \ln(\text{Filings per 1000 inmates}) = & \alpha + \omega(\text{percent prison}) \\
 & + \delta(\text{percent prison, 1996}) \\
 & + \gamma(\text{percent prison, postPLRA}) + \lambda(\text{state indicators}) \\
 & + \theta_1(1981 - 1991) + \theta_2(1992 - 1995) + \theta_3(1996) + \theta_4(1997 - 2001) \\
 & + e
 \end{aligned} \tag{3}$$

Results of the basic, unweighted specifications of these three models appear in Table 2. In Column 1, the prison population is positively related to the number of filings within state at a rate of 0.02, or 20 filings per 1,000 inmates, but the jail population seems unrelated to filings (the coefficient is not even close to statistically significant). The relationship of the prison population to filings is lower following the PLRA; the (statistically significant) coefficient of  $-0.005$  means that the relationship falls by 5 per 1,000, 25 percent of the pre-PLRA relationship of 20 per 1,000, to end up at a level of 15 per 1,000. Those time effects in Column 1 that are statistically significant are consistent with our prior expectations: as Figure 2 suggests, the period from 1992 to 1995 shows strong positive time effects, and post 1996 strong negative ones.

The second column of Table 2 sets out the results of the negative binomial model, reported as incidence rate ratios. These are a bit harder to read. An incidence rate ratio of one would mean that the explanatory variable has no relationship with the dependent variable—here, that a shift in the percent prison variable from zero to one (that is, a shift in the proportion

Table 2: Determinants of Inmate Civil Rights Filings in Federal District Court, 1981–2001

|           |                     | 1               | 2                 | 3                                      |
|-----------|---------------------|-----------------|-------------------|--|
|           |                     | OLS             | Negative Binomial | OLS $\ln(\text{filings}/\text{pop'n})$ |
| Overall   | Jail inmates (est.) | -0.001 (0.24)   | —                 | —                                      |
|           | Prison inmates      | 0.020** (10.52) | —                 | —                                      |
|           | Percent prison      | —               | 3.411** (3.76)    | 1.001* (2.89)                          |
| Post-PLRA | Jail inmates (est.) | 0.004 (0.10)    | —                 | —                                      |
|           | Prison inmates      | -0.005* (1.98)  | —                 | —                                      |
|           | Percent prison      | —               | 0.471** (7.86)    | -0.740* (7.20)                         |
| Time      | 1981–1991           | 1.877 (0.88)    | 0.992 (1.91)      | -0.006 (1.23)                          |
|           | 1992–1995           | 56.48* (6.59)   | 0.996 (0.29)      | 0.013 (1.03)                           |
|           | 1996                | 79.54 (1.70)    | 1.055 (0.20)      | 0.018 (0.06)                           |
|           | 1997–2001           | -25.65** (3.76) | 0.921** (5.13)    | -0.086* (5.08)                         |

NOTES:  $N = 924$ . Equations include, in addition to the above variables, interactions between inmate populations and a 1996 dummy; state fixed effects; and a constant. Year coefficients are constrained to be linear within the specified periods. Absolute values of  $T$ -statistics in parentheses based on heteroskedasticity-consistent standard errors (Huber-White correction). An asterisk indicates the coefficient is statistically significantly different from zero at the 0.05 level; \*\* indicates statistical significance at the 0.01 level. Cell entries for the negative binomial are reported as incidence rate ratios, as described in the text.

SOURCES: District court filings: Administrative Office of the U.S. Courts. Inmate population figures: Bureau of Justice Statistics. See supra note 14 for details. Jail populations are estimated using a quadratic interpolation from Jail Censuses.

of a state's inmates from none in prison to all in prison) causes no change in the number of filings. A number greater than one indicates that increases in the explanatory variable predict increases in the filing rate by the ratio amount. So the Model 2 coefficient in the "Overall: Percent prison" row, 3.411, means that a shift from no prison inmates to 100 percent prison inmates corresponds to an increase of 241 percent ( $3.411 - 1$ ) in the number of filings. Accordingly, a five-percentage point increase in the percent of inmates housed in prisons (roughly the amount that would be needed to move a state from the 25th percentile to the median in 2001) is associated, on average through the entire distribution, with a 12 percent increase in filings, because 241 percent times 0.05 is 12 percent. In the post-PLRA period, the relationship between the percent in prison and the filing rate is 20 percent lower—ending up at 9.35 percent.<sup>57</sup> Thus the pattern in this column is broadly consistent with the previous column; this specification, too, indicates that prisoners are more important than jail inmates in predicting filings, and that the relationship became weaker following the PLRA. This model gives us some new information as well: even after the PLRA, a higher proportion of prison inmates continues to yield more filings, though not as many more as prior to the PLRA.

The final column of Table 2 reports Model 3's ordinary least squares regression on the natural log of the filing rate. In this model, the coefficients indicate—in natural log units—the effect on each independent variable of a one-unit change in the dependent variable. In this model, a five-percentage point increase in the "percent prison" variable is associated with a 5 percent increase in the filing rate.<sup>58</sup> Thus, although the fact of this effect is consistent with Model 2, its magnitude is quite a bit smaller than the 12 percent observed in Column 2. And as in Model 2, the effect decreases but does not disappear post-1996. The impact of an increase in "percent prison"

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<sup>57</sup>Movement in the "percent prison" variable from 0 to 100 percent corresponds to a 52.9 percent decline in filings compared to the pre-PLRA period ( $1 - 0.471$ , the Model 2 coefficient in the "Post-1996: Percent prison" row). Five percent of a decline of 52.9 percent is a decline of 2.65 percent. Thus, after the PLRA's passage, a five-percentage point increase in the percent of a state's inmates in prison as opposed to jail is associated with an increase in filings of 9.35 percent ( $12 - 2.65$ ). This is a 21.7 percent decline in the size of the estimated relationship compared to prior to the PLRA.

<sup>58</sup>The calculation is:  $e^{(0.05 * 1.001)} - 1 = 0.0513$ .

declines 74 percent, to 1.3 percent, in the post-PLRA period. Again, the significant time effect is, consistent with predictions from Figure 2, sharply negative post-1996.

In short, despite the different approaches, overall the models are broadly consistent with each other and all at least partially support our three hypotheses. We suggested, first, that inmate filings vary positively with both prison and jail population. Model 1 confirms this as to prison population. (Models 2 and 3 cannot either confirm or rebut this hypothesis because they are constrained to treat filings as a rate per incarcerated person.) Our second hypothesis was that prison population was, prior to the PLRA's passage, more strongly connected to filings than jail population; all three models support this view. And our final hypothesis was that the PLRA dampened the connection between prison population and filings, but had a lesser impact on jail filings. Again, all three models confirm this view.

However, the estimates in Table 2 treat each state equally, that is, each state contributes the same amount to the overall coefficients. Table 3, our final table, weights the observations by the size of each state's inmate pop-

Table 3: Determinants of Inmate Civil Rights Filings in Federal District Court, 1981–2001: Robustness

|           |                | 1                                  | 2  | 3                                      |
|-----------|----------------|------------------------------------|--|--|
|           |                | OLS                                | OLS  | OLS $\ln(\text{filings}/\text{pop}'n)$ |
|           |                | $\ln(\text{filings}/\text{pop}'n)$ | $\ln(\text{filings}/\text{pop}'n)$<br>Weighted | Weighted, w/o AL,<br>LA, TX            |
| Overall   | Percent prison | 1.001* (2.89)                      | 2.225** (4.98)                                 | 2.682** (4.17)                         |
| Post-PLRA | Percent prison | -0.740* (7.20)                     | -0.700** (6.11)                                | -0.786** (6.48)                        |
| Time      | 1981–1991      | -0.006 (1.23)                      | -0.014* (2.03)                                 | -0.017* (2.51)                         |
|           | 1992–1995      | 0.013 (1.03)                       | -0.015 (0.88)                                  | -0.023 (1.33)                          |
|           | 1996           | 0.018 (0.06)                       | 0.234 (0.10)                                   | 0.265 (0.90)                           |
|           | 1997–2001      | -0.086* (5.08)                     | -0.064** (2.86)                                | -0.052* (2.19)                         |
| <i>N</i>  |                | 924                                | 924  | 861                                    |

NOTES: Equations include, in addition to the above variables, interactions between inmate populations and a 1996 dummy; state fixed effects; and a constant. Year coefficients are constrained to be linear within specified periods. Absolute values of *T*-statistics in parentheses based on heteroskedasticity-consistent standard errors calculated using the Huber-White correction. Weights are the total inmate population in 1983. An asterisk indicates the coefficient is statistically significantly different from zero at the 0.05 level; \*\*indicates statistical significance at the 0.01 level.

SOURCES: District court filings: Administrative Office of the U.S. Courts. Inmate population figures: Bureau of Justice Statistics. See *supra* note 14 for details. Jail populations are estimated using a quadratic interpolation from Jail Censuses.

ulation,<sup>59</sup> which is appropriate because the states with the larger inmate populations contribute more to the phenomenon under study. We carry forward only Model 3, which we prefer due to its correspondence with Model 2's negative binomial and the ease with which it can accommodate weights. The weighting procedure provides the states with large inmate populations, such as California and Texas, much more influence in the determination of the coefficients.

Column 1 of Table 3 simply repeats the third column of Table 2, for ease of comparison. Column 2 implements the weighting, which turns out to make a big difference to the magnitudes of the coefficients on the two key variables, but not to the rest of the estimates, including the time effects. The results in Column 2 of Table 3 indicate that a five-percentage point increase in the "percent prison" variable is associated with a 12 percent increase in the filing rate.<sup>60</sup> After the PLRA, this relationship falls by about 33 percent, to 8 percent. Again, then, after the PLRA, a shift from jail to prison custody continues to increase the number of filings, but less than prior to the PLRA. The differences between the weighted and nonweighted estimates indicate that states with larger inmate populations experience greater differences in the filing rates between prisoners and jail inmates. In Column 2, two time effects are significant, and both are consistent with Figure 2's picture of rates; the period 1981–1991 is slightly negative, and the period post-1996 much more so.

We conduct one final robustness check. In Column 3, we reestimate the model after dropping three states in which substantial changes in policy affected whether convicted offenders were housed in jails or in prisons, namely, Alabama, Louisiana, and Texas.<sup>61</sup> (Although other states had policies greatly affecting either prisons or jails, the shift of inmates in these three states from state prisons to jails and then back again was very noticeable and threatens to overwhelm other phenomena. It is possible that analogous shifts took place in other states as well, but we have not been able to discern them in the data, and are not aware of them otherwise.) But dropping these states does not make a big difference to any of the results, as can be seen in Column 3.

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<sup>59</sup>The results are not sensitive to the choice of year for the weights. We use 1983 because it is a Census year early in the time period studied.

<sup>60</sup>The calculation is:  $e^{(0.05 \times 2.225)} - 1 = 0.1177$ .

<sup>61</sup>See *supra* note 30.

In sum, all three modeling approaches concur that prison populations are more important than jail populations in explaining the number of filings and that the relationship of prison population to filings weakened following the PLRA. Models 2 and 3 consistently indicate that even after the PLRA's dampening of (at least) prison filings, prison population remains more strongly correlated with filings than does jail population.

## VI. CONCLUSIONS

We began with three hypotheses, which we are now in a position to evaluate. Although data limitations constrain the range of hypotheses that are testable, we have learned a great deal about inmate civil rights filings in federal court and have isolated several issues for further analysis.

### *A. Hypothesis 1: Inmate Filings Vary Positively with Both Prison and Jail Population*

Population must matter to the number of filings; the more people, the more opportunity for grievances. But the aggregate trends demonstrate that population is not the sole determinant. Otherwise, the litigation rate, illustrated in Figure 2, would be flat, which it decidedly is not. The rate changes in Figure 2 suggest, rather, that the legal regime and/or other exogenous factors matter as well. Although we have some concerns about the reliability of the estimates from Table 2's Model 1,<sup>62</sup> the only one of our models that allows us to check the existence of population effects, it is worth comparing these results to similar ones reported in the literature. Once time effects are controlled for, Model 1 estimates the relationship of filings to population as between 20 (prior to the PLRA) and 15 (since the PLRA) per 1,000 inmates, noticeably lower than the 27 per 1,000 estimate in the literature,<sup>63</sup> which essentially simply states the filing rate averaged over a given time period. We do not, however, place too much emphasis on these magnitude estimates, because they are from an unweighted model.

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<sup>62</sup>The model has the advantage of being easily interpretable. Its general consistency with the other models we report and with a model using a logarithmic transformation of the dependent variable alleviate our concerns somewhat and justify cautious interpretation of the estimated magnitudes.

<sup>63</sup>See text accompanying note 15.

*B. Hypothesis 2: Prior to the PLRA, the Positive Effect on Inmate Filings of Growth in Prison Populations was Larger than the Corresponding Effect of Growth in Jail Populations*

Of course, it would be preferable to test our hypothesis about a significant jail/prison differential using actual counts for each state and year for both the key dependent and independent variables. In the absence of such data, we have documented that a quadratic interpolation of the jail population serves as well as a measure extrapolated more laboriously from annual Jail Survey data. The use of estimated jail data notwithstanding, the results of several alternative modeling approaches consistently reveal that compared to jail populations, prison populations are more highly and more consistently related to filings by inmates in federal court. This is consistent with case studies and survey data reported previously. Unfortunately, it is difficult to compare magnitudes across these various research designs. But our results, from the whole universe of filings, indicate that a five-percentage point increase in the percent of inmates that are housed in prison is associated with an approximately 10 percent increase in the filing rate in a state. This provides additional evidence that prisoners differ from jail inmates in their filing propensities, reinforcing our original concern that analysts ignoring jail inmates make a consequential omission.

*C. Hypothesis 3: The PLRA is Having More Impact on Filings from Prisoners than from Jail Inmates*

Our results are similarly consistent and convincing with regard to the third hypothesis, that the PLRA had a larger dampening effect for prison inmates than for jail inmates. The reductions in the extra-litigiousness of prisoners (relative to jail inmates) are on the order of 25 percent. That is, even since the PLRA's enactment, prisoners tend to file more cases than jail inmates—though the extra increment of litigation is smaller than it was prior to 1996. This result deepens the just emerging understanding of the consequences of this major legislative change.

*D. Methodological Notes*

We close with a few final thoughts related to our method and data. First, marked state effects are present and significant in each one of our models, though we do not present them in our tables. The certainty of these state effects strongly supports our decision to perform the analysis using within-

state variation rather than aggregated to the national level. But because there is not enough power in our research design to distinguish among all of the factors we hypothesize might drive different states to experience different levels of litigation, we leave for future research deeper analysis of the states and their impact on inmate filings.

Second, all these results suggest that research on corrections in general and on inmate litigation in particular should take much more notice of the distinctions between jails and prisons. However, the Bureau of Justice Statistics' current failure to estimate jail population by state and by year makes this extremely difficult.

And last, we point out that the two issues that motivated our research—the difficulty of distinguishing population effects from exogenous factors, and the difficulty and usefulness of pulling apart prison and jail litigation rates—have analogues in many areas. We therefore hope the above analysis offers a model for future research not only into inmate litigation but other subjects as well.