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Benjamin Steiner

Emily M. Wright

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Journal of Criminal Law and Criminology

Volume 96
Issue 4 Summer
Article 5

Summer 2006

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Recommended Citation

Benjamin Steiner, Emily Wright, Assessing the Relative Effects of State Direct File Waiver Laws on Violent Juvenile Crime: Deterrence or Irrelevance, 96 J. Crim. L. & Criminology 1451 (2005-2006)

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ASSESSING THE RELATIVE EFFECTS OF STATE DIRECT FILE WAIVER LAWS ON VIOLENT JUVENILE CRIME: DETERRENCE OR IRRELEVANCE?

BENJAMIN STEINER & EMILY WRIGHT*

Juvenile waiver, or transfer, laws allow certain young offenders to be removed from juvenile court jurisdiction and prosecuted in criminal court, where the range of sanctions is presumably greater. In the past several decades, many states have modified their existing transfer statutes in order to streamline the waiver process and make it easier to prosecute juveniles in criminal court. In doing so, states have excluded certain offenses from juvenile court jurisdiction or added concurrent jurisdiction provisions to their existing waiver statutes. Concurrent jurisdiction, or direct file, statutes afford prosecutors the unreviewable discretion to charge certain juveniles in either juvenile or criminal court. Although the increased legislation has generated a considerable amount of evaluations of the various effects of juvenile transfer laws, few studies have examined the deterrent effects of such laws on aggregate juvenile crime. In this study, we assess the general deterrent effects of direct file transfer laws in fourteen states which have such provisions. Findings reveal that direct file laws have little effect on violent juvenile crime.

^{*} The data sets examined for this paper were made available by the International Consortium for Political and Social Research. The data for "Uniform Crime Reports: Monthly Weapon Specific Crime and Arrest Time Series 1975-1993" (ICPSR 6792) were collected by Susan Carlson. The data for the "Uniform Crime Reporting Series" (ICSPR 2004-02-24, 2000-06-21, 2001-06-29, 2002-06-27, 2003-06-05, and 2004-06-04) were collected by the Federal Bureau of Investigation. Neither the collectors of the original data nor the Consortium bear any responsibility for the analyses presented here. Please address all correspondence to Benjamin Steiner, Division of Criminal Justice, University of Cincinnati, P.O. Box 210389, 600 Dyer Hall, Cincinnati, OH 45221-0389. Email: Benjamin.Steiner@uc.edu.

I. INTRODUCTION

A separate and distinct juvenile justice system was founded on the Progressive Era belief that juvenile offenders were merely delinquent and in need of individualized treatment wherein the ultimate goal was their rehabilitation. During the 1970s and throughout the 1980s, however, the rehabilitative ideal that had guided both the adult and juvenile justice systems came under attack. Conservatives argued that rehabilitation programs had failed and suggested that the crime rate was rising because offenders had no reason to fear incapacitation; in short, conservatives felt that the current system did not deter future crime. Their position was not unfounded. Juvenile violence began to rise in the 1970s and escalated substantially in the 1980s. The juvenile arrest rate for violent crime rose 62% between 1988 and 1994 and the juvenile homicide rate doubled between 1987 and 1993. At the same time conservatives were claiming the system was soft on crime, liberals questioned the philosophy of rehabilitation, judges' potential biases and broad discretionary powers, and

¹ DAVID J. ROTHMAN, CONSCIENCE AND CONVENIENCE: THE ASYLUM AND ITS ALTERNATIVES IN PROGRESSIVE AMERICA 206-09 (2002); Barry C. Feld, The Juvenile Court Meets the Principle of the Offense: Legislative Changes in Juvenile Waiver Statutes, 78 J. CRIM. L. & CRIMINOLOGY 471, 474-75 (1987) [hereinafter Feld, The Juvenile Court]; Barry C. Feld, The Politics of Race and Juvenile Justice: The "Due Process Revolution" and the Conservative Reaction, 20 Just. Q. 765, 772 (2003) [hereinafter Feld, The Politics of Race]; Simon I. Singer & David McDowall, Criminalizing Delinquency: The Deterrent Effects of the New York Juvenile Offender Law, 22 Law & Soc'y Rev. 521, 522 (1988).

² Francis T. Cullen & Karen E. Gilbert, Reaffirming Rehabilitation 14-15 (1982); Donna M. Bishop & Charles E. Frazier, *Transfer of Juveniles to Criminal Court: A Case Study and Analysis of Prosecutorial Waiver*, 5 Notre Dame J.L. Ethics & Pub. Pol'y 281, 282-83 (1991); Donna M. Bishop, Charles E. Frazier & John C. Henretta, *Prosecutorial Waiver: Case Study of a Questionable Reform*, 35 Crime & Delinq. 179, 179 (1989); Feld, *The Politics of Race, supra* note 1, at 772; Eric L. Jensen & Linda K. Metsger, *A Test of the Deterrent Effect of Legislative Waiver on Violent Juvenile Crime*, 40 Crime & Delinq. 96, 96 (1994); Singer & McDowall, *supra* note 1, at 522; Charles W. Thomas & Shay Bilchik, *Prosecuting Juveniles in Criminal Courts: A Legal and Empirical Analysis*, 76 J. Crim. L. & Criminology 439, 439-41 (1985).

³ CULLEN & GILBERT, *supra* note 2, at 94-101; ROTHMAN, *supra* note 1, at 428; HENRY RUTH & KEVIN REITZ, THE CHALLENGE OF CRIME: RETHINKING OUR RESPONSE 82 (2003); SAMUEL WALKER, TAMING THE SYSTEM: THE CONTROL OF DISCRETION IN CRIMINAL JUSTICE, 1950-1990 5 (1993); Feld, *The Politics of Race*, *supra* note 1, at 772; Jensen & Metsger, *supra* note 2, at 96-97.

⁴ Barry C. Feld, Bad Kids: Race and the Transformation of the Juvenile Court, 198-99 (1999); Howard N. Snyder, U.S. Dep't of Justice, Juvenile Justice Bulletin, Juvenile Arrests 1996 4-5 (1997); Feld, *The Politics of Race, supra* note 1, at 777.

⁵ RUTH & REITZ, *supra* note 3, at 254-58; HOWARD N. SNYDER & MELISSA SICKMUND, U.S. DEP'T OF JUSTICE, JUVENILE OFFENDERS AND VICTIMS: 1999 NATIONAL REPORT 120-22 (1999).

the ability of corrections officials to determine when an offender was truly "rehabilitated." In response to the pervasive discretion in both the adult and juvenile systems, the United States Supreme Court embarked on a due process campaign that extended to the juvenile justice system and essentially criminalized the traditionally informal juvenile court by affording juveniles many of the same procedural rights guaranteed adult defendants.⁷

The juxtaposition of the widespread rejection of the rehabilitative ideal, the rise in violent juvenile crime, and the due process movement in the Supreme Court altered the juvenile justice system from an informal, highly offender-oriented criminal justice system to a much more formal, victim-oriented, "just deserts" style of system.⁸ Simply put, the focus shifted from the offender to the offense.

In accordance with the nationwide move away from rehabilitation that began in the late 1970s and continued through the 1990s, many states made changes to their existing juvenile justice acts in order to "get tough" on juvenile offenders. One of the more prevalent changes was the addition or modification of existing transfer statutes or waiver laws that allow juvenile offenders to be transferred to adult criminal court for prosecution. By 1979, every state allowed some form of transfer option. During the 1980s and 1990s, virtually every state modified or amended its juvenile court

⁶ CULLEN & GILBERT, supra note 2, at 123-24; WALKER, supra note 3, at 5; Feld, The Politics of Race, supra note 1, at 772; Thomas & Bilchik, supra note 2, at 440.

⁷ Feld, *The Juvenile Court*, *supra* note 1, at 478; Feld, *The Politics of Race*, *supra* note 1, at 772-73; Thomas & Bilchik, *supra* note 2, at 453-55.

⁸ CULLEN & GILBERT, supra note 2, at 133-35; ROTHMAN, supra note 1, at 427-28; RUTH & REITZ, supra note 3, at 260-61; Barry C. Feld, Juvenile (In)Justice and the Criminal Court Alternative, 39 CRIME & DELINQ. 403, 403-04 (1993); Feld, The Politics of Race, supra note 1, at 777; Thomas & Bilchik, supra note 2, at 453-55; see Feld, The Juvenile Court, supra note 1, at 483.

⁹ Bishop & Frazier, supra note 2, at 284; Barry C. Feld, Race, Youth Violence, and the Changing Jurisprudence of Waiver, 19 BEHAV. SCI. & L. 3, 5 (2001) [hereinafter Feld, Race, Youth Violence]; Daniel P. Mears, A Critique of Waiver Research: Critical Next Steps in Assessing the Impacts of Laws for Transferring Juveniles to the Criminal Justice System, 1 YOUTH VIOLENCE & JUV. JUST. 156, 157 (2003); Thomas & Bilchik, supra note 2, at 455-56; see Barry C. Feld, Juvenile Transfer, 3 CRIMINOLOGY & PUB. POL'Y 599, 599 (2004) [hereinafter Feld, Juvenile Transfer].

¹⁰ Feld, *The Juvenile Court, supra* note 1, at 488; Feld, *supra* note 8, at 408-09; Eric Fritsch & Craig Hemmens, *Juvenile Waiver in the United States 1979-1995: A Comparison and Analysis of State Waiver Statutes*, 46 JUV. & FAM. CT. J. 17, 23 (1995); Benjamin Steiner & Craig Hemmens, *Juvenile Waiver 2003: Where Are We Now?*, 54 JUV. & FAM. CT. J. 1, 4 (2003).

¹¹ Fritsch & Hemmens, supra note 10, at 23; Steiner & Hemmens, supra note 10, at 4-5.

jurisdiction in some fashion. ¹² Most states added offenses that were waivereligible and lowered the age at which a juvenile could be transferred to criminal court. ¹³ Many states also supplemented their existing waiver laws by adding additional procedures that removed the decision to waive from the judiciary for certain offenses and streamlined the process by which a juvenile could be transferred to criminal court. ¹⁴ As a result, the number of juveniles waived to criminal court increased considerably during this period. ¹⁵ In theory, transferring a juvenile offender into the criminal court accomplishes two goals: (1) transfer places juveniles who are beyond the reach of the rehabilitative services offered by the juvenile justice system into the adult criminal justice system; and (2) transfer serves as a mechanism for deterring future juvenile crime. ¹⁶ In this study, we examine the deterrent function of juvenile waiver laws.

II. TYPES OF WAIVER STATUTES

There are several ways in which a juvenile can be transferred to criminal court. Judicial waiver is the process by which a juvenile judge may, at his discretion, transfer a juvenile to criminal court. As of 2003, this type of waiver mechanism was found in forty-eight states and the District of Columbia.¹⁷ Judicial waiver typically requires a transfer hearing where an informed judicial determination is made regarding whether the juvenile offender is beyond the reach of rehabilitative treatment offered in juvenile court. In this way, judicial waiver provides individualized justice for the youthful offender.¹⁸

Statutory exclusion, or legislative waiver, is the method by which state legislatures have mandated the exclusion of certain offenses from juvenile court jurisdiction. As of 2003, statutory exclusion was found in thirty-one states and the District of Columbia. Direct file, or prosecutorial discretion, authorizes prosecutors to file certain cases in either juvenile or criminal court under a concurrent jurisdiction statute. As of 2003, direct

¹² Fritsch & Hemmens, supra note 10, at 23; Steiner & Hemmens, supra note 10, at 4-5.

¹³ Fritsch & Hemmens, supra note 10, at 23; Steiner & Hemmens, supra note 10, at 4-5.

¹⁴ Feld, *The Juvenile Court*, *supra* note 1, at 504; Steiner & Hemmens, *supra* note 10, at 4-5.

¹⁵ See Charles M. Puzzanchera, U.S. Dep't of Justice, Fact Sheet: Delinquency Cases Waived to Criminal Court, 1989-1998 (2001); Snyder & Sickmund, *supra* note 5, at 170; Fritsch & Hemmens, *supra* note 10, at 23.

¹⁶ Bishop & Frazier, *supra* note 2, at 290-91; Bishop, Frazier & Henretta, *supra* note 2, at 186; Mears, *supra* note 9, at 160-61.

¹⁷ Steiner & Hemmens, *supra* note 10, at 4-5.

¹⁸ Feld, Race, Youth Violence, supra note 9, at 9.

¹⁹ Steiner & Hemmens, supra note 10, at 5.

file statutes were found in fourteen states and the District of Columbia.²⁰ An underlying assumption of both direct file and statutory exclusion laws is that by excluding certain offenses from juvenile court jurisdiction and placing them instead under criminal court jurisdiction, juveniles would be deterred by the more severe punishment perceived to be handed out in the adult system.²¹ While some argue that waiver through statutory exclusion is another form of direct file transfer since the prosecutor ultimately decides how a juvenile is charged, 22 it is important to distinguish these two methods because the state legislatures do. In fact, several states, such as Vermont, have now statutorily excluded some offenses from juvenile court jurisdiction, even though they allow prosecutors the discretion to charge other offenses (without reducing the offense that was charged) in either iuvenile or criminal court.²³ Although direct file statutes allow the prosecutor the discretion to keep certain young offenders in juvenile court, prosecutors have historically been inclined to exercise a "just deserts" philosophy in the justice system.²⁴ By acting in the interest of the state, prosecutors are apt to prioritize the state's interests above that of the juvenile, 25 especially for more serious offenses. 26 Accordingly, one goal of a direct file statute would be to deter future juvenile crime, whether specifically through harsher sanctioning of the transferred juvenile or more generally through the threat of increased punishment to other potential youth offenders. Despite general agreement as to this goal,²⁷ no study has evaluated whether or not direct file statutes actually achieve a general deterrent effect on juvenile crime.

²⁰ Id. at 4.

²¹ Jensen & Metsger, *supra* note 2, at 97-98; Singer & McDowall, *supra* note 1, at 522-

²² See Joseph B. Sanborn, Jr., Certification to Criminal Court: The Important Policy Questions of How, When, and Why, 40 CRIME & DELINQ. 262, 263-64 (1994).

²³ Steiner & Hemmens, *supra* note 10, at 4-5.

²⁴ Bishop, Frazier & Henretta, supra note 2, at 181; Feld, Juvenile Transfer, supra note 9, at 599; Feld, Race, Youth Violence, supra note 9, at 20; see Joseph B. Sanborn, Jr., Hard Choices or Obvious Ones: Developing Policy for Excluding Youth from Juvenile Court, 1 YOUTH VIOLENCE & JUV. JUST. 198, 203 (2003).

²⁵ Bishop, Frazier & Henretta, supra note 2, at 181; Feld, Juvenile Transfer, supra note 9, at 600; Feld, Race, Youth Violence, supra note 9, at 19; Sanborn, Jr., supra note 24, at 203.

²⁶ Sanjeev Sridharan, Lynette Greenfield & Baron Blakley, *A Study of Prosecutorial Certification Practice in Virginia*, 3 CRIMINOLOGY & PUB. POL'Y 605, 609-10 (2004).

²⁷ See Jeffrey A. Butts & Daniel P. Mears, Reviving Juvenile Justice in a Get-Tough Era, 33 YOUTH & SOC'Y 169, 177 (2001); Feld, The Juvenile Court, supra note 1, at 495-96; Feld, Race, Youth Violence, supra note 9, at 12; Aaron Kupchik, Direct File of Youth to Criminal Court: Understanding the Practical and Theoretical Implications, 3 CRIMINOLOGY & PUB. POL'Y 645, 646 (2004); Thomas & Bilchik, supra note 3, at 441.

III. EMPIRICAL STUDIES OF THE EFFECTS OF THE WAIVER STATUTES

There has been extensive research assessing the various effects of juvenile waiver statutes. Most of this research has either described what happens to juveniles after they have been transferred to criminal court, or tracked the differences in sentencing outcomes imposed in the juvenile versus criminal courts, and the disparities in recidivism rates between waived offenders and those youth retained in the juvenile justice system.

A. SENTENCING OUTCOMES OF JUVENILES WAIVED TO CRIMINAL COURT

Studies assessing sentencing outcomes of juveniles waived to criminal court have considered whether transferred juveniles were sentenced to incarceration or probation, as well as how long their sentences were. With regard to the former, findings from some studies indicate that juveniles are more likely to receive probation sentences when transferred to criminal court than if they had proceeded through the juvenile system. Other research indicates that the sentence outcome is contingent on offense type: non-violent offenders tend to receive more incarceration sentences in the juvenile court, while violent offenders tend to receive prison sentences more often in criminal court.

Bishop & Frazier, supra note 2, at 296; Bishop, Frazier & Henretta, supra note 2, at 194; M.A. Bortner, Traditional Rhetoric, Organizational Realities: Remand of Juveniles to Adult Court, 32 CRIME & DELINQ. 53, 57 (1986); Dean J. Champion, Teenage Felons and Waiver Hearings: Some Recent Trends, 1980-1988, 35 CRIME & DELINQ. 577, 582-83 (1989); Elizabeth E. Clarke, A Case for Reinventing Juvenile Transfer: The record of transfer of juvenile offenders to criminal court in Cook County, Illinois, 47 Juv. & FAM. Ct. J. 3, 17 (1996); Elizabeth W. McNulty, The Transfer of Juvenile Offenders to Adult Court: Panacea or Problem?, 18 LAW & POL'Y 61, 65 (1996); Richard E. Redding, The Effects of Adjudicating and Sentencing Juveniles as Adults: Research and Policy Implications, 1 YOUTH VIOLENCE & JUV. JUST. 128, 132-34 (2003).

²⁹ Jeffrey Fagan, Separating the Men from the Boys: The Comparative Advantage of Juvenile Versus Criminal Court Sanctions on Recidivism Among Adolescent Felony Offenders, in A SOURCEBOOK: SERIOUS, VIOLENT, & CHRONIC JUVENILE OFFENDERS 248 (James C. Howell et al. eds., 1995); Carole Wolff Barnes & Randal S. Franz, Questionably Adult: Determinants and Effects of the Juvenile Waiver Decision, 6 JUST. Q. 117, 127-28 (1989); Mary J. Clement, A Five-Year Study of Juvenile Waiver and Adult Sentences: Implications for Policy, 8 CRIM. JUST. POL'Y REV. 201, 209-10 (1997); Marcy Rasmussen Podkopacz & Barry C. Feld, The End of the Line: An Empirical Study of Judicial Waiver, 86 J. CRIM. L. & CRIMINOLOGY 449, 485-87 (1996); Redding, supra note 28, at 132-33.

³⁰ Fagan, supra note 29, at 248; HOWARD N. SNYDER, MELISSA SICKMUND & EILEEN POE-YAMAGATA, U.S. DEP'T OF JUST., JUVENILE TRANSFERS TO CRIMINAL COURT IN THE 1990'S: LESSONS LEARNED FROM FOUR STUDIES 16, 24 (2000); Barnes & Franz, supra note 29, at 127-28; Clement, supra note 29, at 208-10; Marilyn Houghtalin & G. Larry Mays, Criminal Dispositions of New Mexico Juveniles Transferred to Adult Court, 37 CRIME & DELINQ. 393,

Studies that examine sentence length or time served for waived youth show that violent offenses earn longer sentences in criminal court than those typically imposed in the juvenile system, while non-violent offenses yield longer sentences in the juvenile system.³¹ In addition, Kurlychek and Johnson found that even when all legal and many extralegal factors were controlled for, juveniles waived to criminal court were sentenced to longer sentences than young adults between the ages of eighteen and twenty-four who were sentenced over the same period of time.³²

On the other hand, other studies have revealed that even when criminal courts imposed substantial sentences, parole authorities typically released youthful offenders after serving less time than they would have served had they remained in the juvenile system.³³ Therefore, it remains unclear whether waived juveniles are in fact punished more harshly when waived to criminal court.

B. RECIDIVISM OF JUVENILES WAIVED TO CRIMINAL COURT

In an effort to assess the specific deterrent effect of waiver laws, scholars have also compared the difference in recidivism rates between waived youth and similarly situated juvenile offenders. Contradicting the expectations of deterrence advocates, recidivism rates have generally been lower for youth retained in juvenile court when compared to those transferred to criminal court.³⁴ Transferred juveniles have also been found

^{403 (1991);} Aaron Kupchik, Jeffrey Fagan & Akiva Liberman, Punishment, Proportionality, and Jurisdictional Transfer of Adolescent Offenders: A Test of the Leniency Gap Hypothesis, 14 STAN. L. & POL'Y REV. 57, 64-65 (2003); McNulty, supra note 28, at 66-69; David L. Myers, Adult Crime, Adult Time: Punishing Violent Youth in the Adult Criminal Justice System, 1 YOUTH VIOLENCE & JUV. JUST. 173, 184-85 (2003); Podkopacz & Feld, supra note 29, at 485-89; Redding, supra note 28, 132-34; Thomas & Bilchik, supra note 2, at 473-74.

³¹ Fagan, supra note 29, at 248-49; Donna M. Bishop et al., The Transfer of Juveniles to Criminal Court: Does It Make a Difference?, 42 CRIME & DELINQ. 171, 177 (1996); Clement, supra note 29, at 209-11; Robert O. Dawson, An Empirical Study of Kent Style Juvenile Transfers to Criminal Court, 23 St. MARY'S L.J. 975, 1032-35 (1992); Myers, supra note 30, at 186-87; Podkopacz & Feld, supra note 29, at 486-89; Marcy Rasmussen Podkopacz & Barry C. Feld, Judicial Waiver Policy and Practice: Persistence, Seriousness and Race, 14 LAW & INEQ. 73, 164-65 (1995).

³² Megan C. Kurlychek & Brian D. Johnson, *The Juvenile Penalty: A Comparison of Juvenile and Young Adult Sentencing Outcomes in Criminal Court*, 42 CRIMINOLOGY 485, 500 (2004).

³³ Bortner, supra note 28, at 57-59; Clement, supra note 29, at 213; Eric J. Fritsch, Tori J. Caeti & Craig Hemmens, Spare the Needle but Not the Punishment: The Incarceration of Waived Youth in Texas Prisons, 42 CRIME & DELINQ. 593, 603 (1996); Eric J. Fritsch, Craig Hemmens & Tory J. Caeti, Violent Youth in Juvenile and Adult Court: An Assessment of Sentencing Strategies in Texas, 18 LAW & POL'Y 115, 124-25 (1996).

³⁴ Fagan, *supra* note 29, at 249-50; Bishop et al., *supra* note 31, at 180-83; David L.

to re-offend sooner and more often than those youth processed in the juvenile system.³⁵ The studies by Donna Bishop and her colleagues are especially relevant to our focus.³⁶ These studies relied on data from Florida, where the majority of cases transferred to criminal court are waived by direct filing,³⁷ suggesting that this type of waiver may not have a deterrent effect on the juvenile offenders who are transferred to criminal court ³⁸

On the other hand, while it is likely the state legislatures were trying to improve the judiciary's ability to sentence serious and violent juvenile offenders more severely by allowing for adult criminal sanctions in certain cases, it is equally plausible that they were attempting to deter potentially serious and violent juvenile crime in general. Determining these aggregate-level effects, however, would not be possible from the aforementioned individual level studies.

C. GENERAL DETERRENT EFFECTS OF WAIVER LAWS

There has been much less research conducted on the general deterrent effect of juvenile waiver laws. Accordingly, the extant evidence regarding their effectiveness can hardly be called conclusive. Compounding this problem is the fact that each of the existing studies employed slightly different methods in assessing their respective states.

Singer and McDowall assessed the general deterrent effects of the New York Juvenile Offender Law.³⁹ They examined monthly juvenile arrest data between the years 1974 and 1984 for each of the five crimes (homicide, aggravated assault, robbery, rape, and arson) that were statutorily excluded from juvenile court jurisdiction by the New York law.⁴⁰ Singer and McDowall found significantly lower rates of arrest for rape and arson in New York City after the law went into effect; however, their control series, Philadelphia, yielded similar results for arson and significantly lower arrest rates for homicide and aggravated assault despite not having a waiver law,

Myers, The Recidivism of Violent Youths in Juvenile and Adult Court: A Consideration of Selection Bias, 1 YOUTH VIOLENCE & JUV. JUST. 79, 90 (2003); Podkopacz & Feld, supra note 29, at 489-91; Podkopacz & Feld, supra note 31, at 165-70.

³⁵ Fagan, supra note 29, at 249-51; Lawrence Winner et al., The Transfer of Juveniles to Criminal Court: Reexamining Recidivism Over the Long Term, 43 CRIME & DELINO. 548, 555-56 (1997).

³⁶ See Bishop et al., supra note 31; Winner et al., supra note 35.

³⁷ Bishop, Frazier & Henretta, supra note 2, at 183-84.

³⁸ Butts & Mears, *supra* note 27, at 178-79.

³⁹ See Singer & McDowall, supra note 1.

⁴⁰ Id. at 526-27.

suggesting a history effect.⁴¹ The study also revealed significantly higher arrest rates for aggravated assault and robbery in upstate New York after the waiver law went into effect.⁴² As a result, Singer and McDowall concluded that New York's version of a legislative waiver law had no appreciable effect on deterring violent juvenile crime.⁴³

Jensen and Metsger evaluated the effect of Idaho's legislative waiver statute on violent juvenile crime. They observed that juvenile arrest rates went down in nearby states during the time after the waiver law was enacted; however, the juvenile arrest rate for violent crime actually increased 18% in Idaho. In a subsequent regression analysis, Jensen and Metsger confirmed the conclusion from their time series analysis: when controlling for infant mortality, population, and agency reporting, the legislative waiver statute was not significantly related to lower arrests for violent juvenile crime.

Risler, Sweatman, and Nackerud assessed the effect of Georgia's Juvenile Justice Reform Act by comparing the mean number of juvenile arrests for each of the violent index crimes for the two years prior to the enactment of the legislation to the mean number of juvenile arrests for each of the violent index crimes for the year the law was enacted and the subsequent year.⁴⁷ No significant differences in the mean juvenile arrest rates were revealed for any of the violent crimes in Georgia after the waiver law was enacted.⁴⁸

The findings from these three studies suggest that *legislative* waiver statutes do not achieve a general deterrent effect. However, aside from Singer and McDowell's study,⁴⁹ the existing evidence regarding legislative waiver laws should be interpreted cautiously because the other studies did not use statistical techniques that would have allowed them to control for both serial correlation and regression effects.⁵⁰

Other aggregate-level deterrence research has revealed some evidence that supports a general deterrent effect resulting from certain policy changes

⁴¹ Id. at 527, 530-31.

⁴² *Id.* at 530-31.

⁴³ Id. at 531.

⁴⁴ See Jensen & Metsger, supra note 2.

⁴⁵ *Id.* at 100-01.

⁴⁶ Id. at 101.

⁴⁷ Edwin A. Risler, Tim Sweatman & Larry Nackerud, Evaluating the Georgia Legislative Waiver's Effectiveness in Deterring Juvenile Crime, 8 RES. ON SOC. WORK PRAC. 657, 661-62 (1998).

⁴⁸ Id. at 663.

⁴⁹ Singer & McDowall, *supra* note 1.

⁵⁰ See DAVID McDowall et al., Interrupted Time Series Analysis 13-15 (1980).

aimed at increasing the level of punishment. However, these effects have been characterized as only short-term. Additionally, many policy changes have generated little or no effect, and there have even been some instances of increases in crime. Taken together, these findings suggest that general deterrence-based policies may not be effective crime reduction strategies. This conclusion is perhaps best supported by Pratt and Cullen's findings from their meta-analysis of the macro-level predictors of crime. Pratt and Cullen found only one criminal justice-related predictor (incarceration effect) to have an effect size greater than 0.30 and only one other (arrest ratio) to be greater than 0.20. The majority of criminal justice related predictors had effects on crime under 0.10.

The addition of juvenile waiver laws has been the most prevalent "get tough" legislation since the rise in juvenile crime, with nearly all of the states creating or modifying existing waiver statutes since 1979. In spite of the evidence against policies and laws aimed at deterring crime, such policies and laws still pervade the criminal justice system and have filtered down to the juvenile justice system. Research examining the general deterrent effect of legislative waiver laws, while limited, suggests that a deterrent effect may not be achieved by such policies. Yet, while these evaluations of legislative waiver laws are uncommon, prior consideration of the relative effects of direct file laws has not yet occurred. We attend to this matter here.

IV. METHODOLOGY

In this study, we examined the relative effects of the direct file waiver laws in the fourteen states that have such laws. Given that the validity of the assessment of each state's law was dependent on whether or not we examined the correct time period in which the law took effect, extra

⁵¹ Daniel S. Nagin, Criminal Deterrence Research at the Outset of the Twenty-First Century, 23 CRIME & JUST. 1, 2-3 (1998).

⁵² Francis T. Cullen et al., Dangerous Liaison? Rational Choice Theory as the Basis for Correctional Intervention, in RATIONAL CHOICE AND CRIMINAL BEHAVIOR: RECENT RESEARCH AND FUTURE CHALLENGES 279, 282-84 (Alex R. Piquero & Stephen G. Tibbetts eds., 2002); Nagin, supra note 51, at 33-36; Paul H. Robinson & John M. Darley, Does Criminal Law Deter? A Behavioural Science Investigation, 24 OXFORD J. OF LEGAL STUD. 173, 198 (2004).

⁵³ Lawrence W. Sherman, *Defiance, Deterrence, and Irrelevance: A Theory of the Criminal Sanction*, 30 J. Res. CRIME & DELINQ. 445, 453-59 (1993).

⁵⁴ Travis C. Pratt & Francis T. Cullen, *Assessing Macro-Level Predictors and Theories of Crime: A Meta-Analysis*, in 32 CRIME AND JUSTICE: A REVIEW OF RESEARCH 373, 398-402 (Micheal Tonry ed., 2005).

⁵⁵ Steiner & Hemmens, supra note 10, at 4-5.

precautions were taken in order to ensure the dates we examined were accurate.

First, we examined the legislative history of the statutes for each state that has a direct file waiver provision. Second, in order to verify our findings, we conducted an Internet survey⁵⁶ of each state's attorney general's office as well as each state's legislative services committee. After receiving these responses, we compared the data from the state offices to our initial findings and changed the effective dates of two states. With the exception of these two states, the results from the survey either were unusable (i.e. state officials were unsure) or confirmed our findings. The current (as of 2004) status of the fourteen states and the effective dates of the initial or substantive portion of the direct file waiver statutes are detailed in Appendix 1.

In order to assess the relative effects of the direct file waiver laws, we used a quasi-experimental multiple interrupted time series design similar to the one used by Singer and McDowall.⁵⁷ The interrupted time series is a strong design, and the only threat to internal validity that poses a problem is history.⁵⁸ A history effect is operating if some other unmeasured and uncontrolled factor prompts the observed change in the dependent series. History threats of this nature are best resolved by introducing a control series. 59 Finding an appropriate control series, however, posed a problem for a couple of reasons. First, we did not want to use states that enacted a deterrence-based waiver provision (direct file or statutory exclusion) during, or close to, the period we were assessing in the corresponding intervention state. As a result, several states⁶⁰ were excluded as possible controls. Second, we realized that two states are rarely alike, so we were limited in our possible choices for controls. Nonetheless, we still attempted to address this threat as adequately as possible by selecting two different states as controls for each state in which an effect was observed. Each control state did not have a direct file or statutory exclusion waiver provision go into effect during, or near, the time period assessed in the intervention state. The control states also resembled the state in which a

 $^{^{56}}$ See Don A. Dillman, Mail and Internet Surveys: The Tailored Design Method (2d ed. 2000).

⁵⁷ Singer & McDowall, *supra* note 1, at 526-27.

⁵⁸ DONALD T. CAMPBELL & JULIAN C. STANLEY, EXPERIMENTAL AND QUASI-EXPERIMENTAL DESIGNS FOR RESEARCH 37-40 (1963); WILLIAM R. SHADISH, THOMAS D. COOK & DONALD T. CAMPBELL, EXPERIMENTAL AND QUASI-EXPERIMENTAL DESIGNS FOR GENERALIZED CAUSAL INFERENCE 179 (2002).

⁵⁹ CAMPBELL & STANLEY, *supra* note 58, at 55-57; SHADISH, COOK & CAMPBELL, *supra* note 58, 181-84; Singer & McDowall, *supra* note 1, at 527.

⁶⁰ See Steiner & Hemmens, supra note 10, at 8-24.

significant change in the juvenile arrest rate was observed as closely as possible in size, location, percentage of the population under eighteen, and their juvenile arrest rate for violent crime.

A. DATA

The respective series used to assess the effects of the waiver laws consisted of each state's monthly juvenile arrest rate (per 100,000 persons under eighteen) for homicide/manslaughter as well as all violent index crime (homicide/manslaughter, rape, robbery, and aggravated assault) for each month during the five years prior to the effective date of the law and for each month of the five years after the law went into effect. 61 The total number of juvenile arrests for homicide/manslaughter and violent crimes indeces were obtained from several data sets housed at the International Consortium for Political and Social Research. First, we used Susan Carlson's monthly arrest data compiled from the Uniform Crime Reports for the years 1975 through 1993.62 Next, we merged Dr. Carlson's data with the monthly arrest data from the individual Uniform Crime Reports for the years 1994 to 2002, which were also housed at the Consortium.⁶³ The population estimates were obtained from United States Bureau of the Census.

Arrest data are advantageous because they offer age-specific information on various crimes. Additionally, when used to assess only changes in the level of arrests, the data are not subject to the criticism that official data under-represent delinquent activity.⁶⁴ However, arrests are imperfectly related to juvenile crime, as they are influenced by the behavior of both the police and juveniles. Although interrupted time series designs

⁶¹ California's direct file waiver law went into effect with the passage of Proposition 21 on March 28, 2000. See CAL. Welf. & Inst. Code § 707 (2004). As a result, data were only available through the end of 2004; slightly less than the five years after the law went into effect. April 1, 2000 was used as the intervention point for the California series in order to facilitate the use of the monthly arrest data.

⁶² We contacted Dr. Carlson to assess the validity of the state level data. Dr. Carlson advised that univariate ARIMA predictions models were used to estimate some of the state level data; however, Michigan was the only one of those states which was examined here, and the missing data were not observed for our time period of interest. E-mail from Dr. Susan Carlson, Associate Professor of Sociology, Western Michigan University, to authors (Sept. 7-9, 2004) (on file with corresponding author).

⁶³ Data for the years 2003 and 2004 for Arizona and California were obtained from each state's data collecting agency.

⁶⁴ SNYDER & SICKMUND, supra note 5, at 111-14.

can tolerate some measurement bias, the data used here could be subject to an instrumentation threat.⁶⁵

It was reasonable to assume that an instrumentation effect could occur if the police altered their arrest practices as a result of the respective waiver laws going into effect. For example, police may have arrested juveniles eligible for waiver more vigorously because they felt the juveniles would be subject to greater sanctions and not just a "slap on the wrist." On the other hand, police may also have arrested juveniles for less serious crimes to protect them from being subjected to the perceived harshness of criminal court. These possibilities were also noted by Singer and McDowall. However, unlike Singer and McDowall, who examined the effect of the New York Juvenile Offender Law on juvenile arrest rates in New York City, we assessed the effects of the direct file waiver laws on the juvenile arrest rates for each of the respective states. For an instrumentation effect to have occurred, multiple police agencies within the individual states would have had to alter their arrest practice in the same direction. Although possible, we find this extremely unlikely.

B. MODELING TECHNIQUES

After computing the monthly arrest rates, each series was analyzed using autoregressive integrated moving average (ARIMA) techniques. ARIMA modeling of the data allowed us to control for any serial dependence between the time points and estimate the differences before and after the effective date of the respective waiver laws. We developed a "white noise" model for each series to control for nonstationarity, serial correlation, and seasonality, all of which are often observed with time series data. Next, an intervention series (the time points after the respective waiver laws went into effect) was added to the model to represent the effects of the intervention. If a change was observed following the effective date of the intervention (the waiver law), it was reflected in the intervention model.

In order to model the intervention series, the appropriate transfer function (zero order, first order, or pulse) was used to estimate the impact of the intervention series on their corresponding white noise dependent series. We relied on Singer and McDowell's prior work and hypothesized that an

 $^{^{65}}$ Campbell & Stanley, supra note 58, at 41; Shadish, Cook & Campbell, supra note 58, at 179.

⁶⁶ Singer & McDowall, supra note 1, at 528.

⁶⁷ See John K. Cochran, Mitchell B. Chamlin & Mark Seth, Deterrence or Brutalization? An Impact Assessment of Oklahoma's Return to Capital Punishment, 32 CRIMINOLOGY 107 (1994); McDowall et al., supra note 50.

abrupt permanent impact (zero order transfer function) would be observed after the intervention series was added to the model. In the event our hypothesis was mispecified, we also estimated the models using both the first order and pulse function. After determining the functional form of best fit, we subjected each final model to a number of diagnostic checks to verify whether the final model was indeed adequate. The final models and fit statistics for both the violent crime and homicide/manslaughter arrest rate series can be found in Appendix 2. By estimating each of the various transfer functions and subjecting the final models to diagnostic testing, we were confident that we determined the most precise model. Simply put, we felt confident in our ability to gauge the general deterrent effect of the various direct file waiver laws.

V. FINDINGS

Table 1 presents summaries of the series for each state's juvenile arrest rate for violent crime. States which were evaluated are in regular type, while the respective control states, if an effect was observed, are in italics. Since we found the zero order transfer function model to be the most appropriate for the majority of the series, we reported the estimate of the parameter (ω) , which represents the shift in the level of the series. In a couple of instances, we determined a pulse function was more appropriate. For these series we reported the parameter (ω) , representing the shift in the level of the series and the parameter (δ) , which estimates the rate of change for the shift in the level of the series.

As can be seen in Table 1, most of the states' violent juvenile crime rates were not lower in the period after their direct file waiver law was enacted. Nine states were unaffected by the law, while Arkansas and Montana experienced an increase in arrests for violent juvenile crime after their direct file waiver law went into effect. An increase in Colorado's juvenile arrest rate was observed, but one of the control series, Nevada, experienced a similar effect, suggesting a history effect. Louisiana also experienced an increase in arrests, but the effect was short lived, as evidenced by the fact that the pulse function was the form of best fit. The series from Michigan did reveal evidence of a deterrent effect. Michigan experienced a decline in the level of juvenile arrests for violent crime after its direct file law went into effect. These effects appear to be real, as neither of the control series, Indiana or New York, demonstrated a similar decline.

⁶⁸ Singer & McDowall, supra note 1, at 527.

Table 1 Summary of Intervention Analyses of Violent Juvenile Crime for States with Direct File Statutes

Series	Ω	t	δ	T
Arizona	0.07	-0.26		
Arkansas	0.07	1.79*		
Mississippi	0.05	1.09		
Missouri	-0.21	-1.11		
California	0.01	0.34		
Colorado	0.48	1.97**		
Utah	0.23	1.14		
Nevada	0.76	3.89**		
Florida	-0.07	-0.32		
Georgia	-0.01	-0.03		
Louisiana	0.38	0.03**	0.53	1.87*
Mississippi	-0.01	-0.05		
Missouri	-0.03	-1.87 [*]		
Michigan	-0.55	-3.59**		
Indiana	-0.02	-0.61		
New York	-0.00	-0.02		
Montana	0.32	1.69*		
North Dakota	0.04	0.34		
Idaho	0.19	1.06		
Nebraska	0.01	0.17		
Oklahoma	-0.00	-0.16		
Vermont	-0.16	-0.91		
Virginia	-0.02	-1.17		
Wyoming	0.16	0.62		

Control series italicized.

^{*}p < .10 **p < .05

Table 2 portrays the summaries of the time series designs for the juvenile arrest rates for homicide/manslaughter. As can be seen, no effects were observed in thirteen of the states. Oklahoma did experience an increase in arrests, but the pulse function was determined to be the most appropriate model. As such, the effect observed there was immediate, but temporary. Thus, it seems there is no evidence in support of a deterrent effect on homicides committed by juveniles resulting from direct file waiver laws.

Table 2
Summary of Intervention Analyses of Juvenile Murder/Manslaughter for
States with Direct File Statutes

Series	Ω	T	δ	t
Arizona	-0.01	-0.30		
Arkansas	0.10	1.11		
California	0.02	0.86		
Colorado	0.01	0.55		
Florida	-0.01	-0.43		
Georgia	-0.02	-1.18		
Louisiana	-0.00	-0.18		
Michigan	-0.01	-1.42		
Montana	0.00	0.11		
Nebraska	-0.01	-0.73		
Oklahoma	0.41	2.56**	-0.52	-2.03**
Mississippi	-0.09	-1.21		
Missouri	-0.00	-0.02		
Vermont	-0.12	-1.60		
Virginia	-0.01	-0.74		
Wyoming	0.03	0.70		

Control series italicized.

^{*}p < .10

p < .05

VI. DISCUSSION AND CONCLUSIONS

During the last two decades, juvenile arrests for violent crimes reached an all-time high.⁶⁹ In response, many states have amended their existing juvenile waiver laws or added mechanisms which allow for easier removal of certain youthful offenders from juvenile court jurisdiction. One such addition is a direct file waiver statute, which gives prosecutors unreviewable discretion to charge juvenile suspects in criminal court for certain offenses. Although direct file statutes also allow the prosecutor the discretion to keep certain young offenders in juvenile court, prosecutors are apt to prioritize the state's interests above that of the juvenile, 70 especially for more serious offenses⁷¹ such as those examined in this study. The legislature's goal in enacting a direct file statute seems to be to have an effect on criminal behavior and criminal offending, whether through retribution, rehabilitation, or deterrence. While findings from empirical studies have not necessarily supported the idea that waived juveniles receive harsher sanctions or are less likely to commit crime when compared to similarly situated juveniles, 72 these laws could have had an effect on aggregate rates of juvenile offending. Indeed, arrest rates for violent juvenile crime have declined nationally and, as of 2003, are near an all-time low.⁷³ Thus, it is possible that would-be juvenile offenders are being generally deterred by the threat of receiving criminal sanctions as a result of being waived to criminal court via a direct file waiver statute.

The findings from this study do *not* support this conclusion. We feel confident in inferring from our results that direct file waiver laws have had little effect on violent juvenile crime. The analysis reported here revealed that the direct file law had a deterrent effect in only one state (Michigan). The other thirteen states that have direct file waiver laws have either seen no effect or have experienced an increase in their arrest rate for violent juvenile crime. Furthermore, no state experienced a lower juvenile homicide/manslaughter rate after their direct file waiver law went into

 $^{^{69}\,}$ Howard N. Snyder, U.S. Dep't of Justice, Juvenile Justice Bulletin, Juvenile Arrests 2003 4-5 (2005).

⁷⁰ Bishop, Frazier & Henretta, *supra* note 2, at 181; Feld, *Race, Youth Violence, supra* note 9, at 19; Feld, *Juvenile Transfer, supra* note 9, at 600; Sanborn, Jr., *supra* note 24, at 273-75.

⁷¹ Sridharan et al., *supra* note 26, at 618.

⁷² For a review, see Donna M. Bishop, *Juvenile Offenders in the Adult Criminal Justice System*, 27 CRIME AND JUSTICE 81 (2000), and Redding, *supra* note 28.

⁷³ SNYDER, supra note 69, at 4-5.

effect. As a result, any decline in juvenile arrest rates observed nationally⁷⁴ was likely a result of factors other than a deterrent effect ensuing from states enacting direct file waiver laws.

On the other hand, it is also possible that those states that enacted a direct file waiver statute already had a waiver mechanism, such as judicial waiver or legislative waiver, in place. The enactment of this earlier legislation could have actually caused any deterrent effect that may have occurred on that state's violent juvenile crime rate. With respect to judicial waiver, we find this extremely unlikely. Judicial waiver has been a part of most states' juvenile codes for many years before the periods which were examined in this study.⁷⁵ Judicial waiver is a mechanism designed to remove from juvenile court those juveniles who have exhausted the resources of the juvenile system, not to deter. The judicial waiver represents the iuvenile court's approach to individual sentencing: it is not deterministic or certain.⁷⁷ in order for juveniles to be deterred, they would have to perceive that they would be waived for the act they may potentially commit. However, it is unlikely that most juveniles suitable for waiver will perceive such waiver. On the other hand, it is far more likely that those cases eligible for direct file waiver will begin in criminal court.⁷⁸

Legislative waiver statutes exist in thirty-one states, four of which (Georgia, Montana, Vermont, and Virginia) were evaluated here. Virginia's (1996) and Montana's (1987) legislative waiver statutes were enacted well after their direct file waiver provisions went into effect. As such, while deterrent effects may have been realized as a result of those laws, their enactment would not have confounded the analysis for either state evaluated here. In both Georgia and Vermont, the direct file statute was enacted at the same time as the legislative waiver statute. While any deterrent effects observed in this study could have also been due to those states' legislative waiver statutes, prior deterrent effects could not. Accordingly, the effects, or lack there of, observed here should be taken seriously.

In speculating why deterrent effects were generally not observed, it may be instructive to examine the U.S. Supreme Court's recent decision in

⁷⁴ See id.

⁷⁵ Feld, *The Juvenile Court, supra* note 1, at 505-07; Fritsch & Hemmens, *supra* note 10, at 23.

⁷⁶ Feld, Race, Youth Violence, supra note 9, at 8-9.

⁷⁷ Feld, supra note 8, at 408.

⁷⁸ Bishop, Frazier & Henretta, *supra* note 2, at 181-82; Feld, *Race, Youth Violence*, *supra* note 9, at 19.

In holding that the execution of persons who Roper v. Simmons. 79 committed homicide when under the age of eighteen violates the Eighth Amendment, the Roper Court relied in part on social science evidence regarding the reduced culpability of juveniles. 80 Although the Roper Court reiterated the Supreme Court's long-standing position that the efficacy of legal reforms is to be left to the state legislatures, it also restated the Court's position in Thompson v. Oklahoma, 81 that the same characteristics which make juveniles less culpable than adults are the same characteristics that make them less susceptible to being deterred.⁸² Particularly relevant are arguments from developmental psychologists that juveniles, compared with adults, may hold very different perceptions of risk and may be considerably more deficient in their ability to understand, envision, or focus on the longterm consequences of their actions. 83 Specifically, juvenile decisions, as opposed to adult decisions, are influenced more heavily by the potential rewards of their choices rather than by the potential risks involved, as well as the short-term, rather than long-term, consequences of their actions.⁸⁴ Thus, if juveniles are unlikely to be deterred by the potential of receiving a death sentence when committing the most serious of illegal acts, it seems improbable that the possibility that they could be transferred to criminal court for committing a similar, although typically less severe, crime would weigh heavily on their decision-making process.

Finally, it should be noted that under normal circumstances a multiple interrupted time series, while the quasi-experimental design that is the least susceptible to internal validity threats, is nevertheless a design that is weak externally. The reason for this external weakness is that an intervention is typically assessed in one geographic locality during one period of time. However, the assessment of multiple series in different locations over different time periods, as was the case in this study, strengthens the external validity of the findings. We contend that, unlike previous general

⁷⁹ 543 U.S. 551 (2005).

⁸⁰ See id. at 569-70.

^{81 487} U.S. 815 (1988).

⁸² See Roper, 543 U.S at 571-72.

⁸³ See Elizabeth S. Scott & Thomas Grisso, The Evolution of Adolescence: A Developmental Perspective on Juvenile Justice Reform, 88 J. CRIM. L. & CRIMINOLOGY 137, 157 (1997); Lawrence Steinberg & Elizabeth S. Scott, Less Guilty by Reason of Adolescence: Developmental Immaturity, Diminished Responsibility, and the Juvenile Death Penalty, 58 AM. PSYCHOLOGIST 1009, 1011-13 (2003).

⁸⁴ See Steinberg & Scott, supra note 83, at 1011-13.

⁸⁵ CAMPBELL & STANLEY, supra note 58, at 40; SHADISH ET AL., supra note 58, at 181.

⁸⁶ Chad S. Briggs, Jody L. Sundt & Thomas C. Castellano, *The Effect of Supermaximum Security Prisons on Aggregate Levels of Institutional Violence*, 41 CRIMINOLOGY 1341, 1352

deterrence studies,87 the relatively consistent findings in this analysis of all fourteen states with direct file statues can aid in determining whether direct file waiver laws have a general deterrent effect on serious and violent juvenile crime. From our findings, it seems there is little evidence to presume they do.

^{(2003).} 87 See Singer & McDowall, supra note 1.

Appendix 1
State Direct File Waiver Statutes 2004

State & Citation	Ages Direct File Waiver Law Applies	Crimes Eligible for Direct File Waiver	Direct File Waiver Law Effective Date
Arizona ARIZ. REV. STAT. ANN. § 13-501 (2004)	14 and older	A class 1 or 2 felony; a class 3 felony in violation of any type of major violent or property crime; a class 3, 4, 5, or 6 felony involving the intentional or knowing infliction of serious physical injury or the discharge or use of, or threatening exhibition with a deadly weapon or dangerous instrument; any felony committed by a chronic felony offender	7/1/1998
Arkansas ARK. CODE ANN. § 9-27-318 (2004)	14 and older	Capital murder in the 1st degree; kidnapping; aggravated robbery; rape; 1st degree battery; terroristic act	1/1/1990
	16 and older	Any felony	
California CAL. WELF. & INST. CODE § 707 (2004)	14 and older	An offense punishable by death; a felony in which the minor used a firearm; any offense listed below if the minor has previously committed such an offense, or the offense was in association with a gang, or motivated by discrimination	4/1/2000

16 and older

Murder; arson; robbery; rape; forcible sexual assault; lewd and lascivious conduct; kidnapping; discharge of a firearm; aggravated assault; manufacturing a controlled substance; carjacking; aggravated mayhem; witness

intimidation

Colorado Colo. Rev.

STAT. § 19-2-517 (2004) 14 and older

Class 1 or 2 felony; violent felony; felony involving a weapon; vehicular homicide or assault; arson; any felony if previously adjudicated of two or more felonies in the past

two years

Florida FLA. STAT. § 985.227 (2004) 14 and older

Arson; sexual battery; robbery; kidnapping; aggravated child abuse; aggravated assault; aggravated stalking; murder; manslaughter; unlawful

throwing, placing, or discharging of a destructive device, or bomb; armed burglary; aggravated battery;

lewd and lascivious conduct; felony while carrying a firearm; grand theft; carrying a weapon on school grounds; home invasion robbery;

carjacking; grand theft of a motor vehicle

16 and older

Any felony or misdemeanor if adjudicated for two previous

offenses, one of which is a

felony

1/1/1988

10/1/1979

Georgia GA. CODE	Any age	Any act punishable by life imprisonment	1/1/1995
ANN. § 15- 11-28 (2004)	13 and older	Presumptive transfer for murder; voluntary manslaughter; rape; aggravated sodomy; child molestation; sexual battery; armed robbery if committed with a firearm	
Louisiana LA. CHILD. CODE ANN. art. 305 (2004)	15 and older	Murder; attempted murder; rape; armed robbery; kidnapping; aggravated burglary; aggravated battery with a firearm; a second aggravated battery or burglary; a second felony involving manufacture; distribution; possession with intent to distribute controlled substances	1/1/1992
Michigan MICH. COMP. LAWS § 712A.2D (2004)	14 and older	Murder; attempted murder; arson; aggravated assault; armed robbery; kidnapping; 1st degree criminal sexual conduct; carjacking; bank robbery; escape	8/1/1996
Montana MONT. CODE ANN. § 41-5-205 (2004)	12 and older 16 and older	Deliberate homicide; mitigated deliberate homicide; rape; assault on a peace or judicial officer Negligent homicide; arson; aggravated assault; assault with a deadly weapon; robbery; burglary; aggravated burglary; aggravated burglary; aggravated kidnapping; possession of explosives; criminal distribution of dangerous drugs; criminal possession of dangerous drugs; criminal possession with intent to	1/1/1975

distribute dangerous drugs; criminal manufacture of dangerous drugs; possession of drugs; use of a threat to coerce street gang membership;

escape

		escape	
<u>Nebraska</u> NEB. REV.	Any age	Any felony	7/1/1981
STAT. § 43- 276 (2004)	16 and older	Any misdemeanor	
Oklahoma OKLA. STAT. tit. 10, § 7306- 2.6 (2004)	15 and older	2nd degree murder; kidnapping; 1st degree manslaughter; robbery; 1st degree rape; forcible sodomy; lewd molestation; 1st degree arson; shooting with intent to kill; discharging a weapon from a vehicle	7/1/1996
	16 and older	1st degree burglary; aggravated assault or battery of a police officer; intimidating a witness; trafficking or manufacturing illegal drugs; assault or battery with a deadly weapon; maiming; 2nd degree burglary if two or more adjudications for 1st or 2nd degree burglary; 2nd degree rape; use of a firearm while in commission of a felony	
Vermont VT. STAT. ANN. tit. 33, § 5506 (2004)	16 and older	Arson; aggravated assault; robbery; murder; manslaughter; kidnapping; unlawful restraint; maiming; sexual assault; burglary in an occupied dwelling	7/17/1981

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Appendix 2Final Models and Fit Statistics

Series	Final Model (p,d,q)(P,D,Q)s*	Q-Statistic**	Degrees of Freedom
Violent Crime	(P) 4) (X) 2) X) 5		11000111
Arizona	(0,1,1)(0,1,1)s	31.46 <i>p</i> < .59	105
Arkansas ¹	(0,1,1)(0,1,1)	42.08 p < .19	118
Mississippi	(0,1,1) $(0,0,1)$ s	35.74 p < .39	117
Missouri	(0,1,1)(0,1,2)s	$31.38 \ p < .55$	104
California ¹	(0,1,1)(0,1,2)s (0,1,1)(0,0,3)s	35.59 p < .30	113
Colorado	(0,1,1)(0,0,3)s (0,1,1)(0,0,2)s	$40.76 \ p < .17$	116
Utah	(0,1,1)(0,0,2)s (0,1,1)(0,0,3)s	38.47 p < .20	115
Nevada	(0,0,1)(0,0,3)s (0,0,1)(0,1,1)s	$26.00 \ p < .84$	105
Florida	(0,1,1)(0,0,2)s	33.07 p < .46	116
Georgia	(0,1,1)(0,0,2)	$23.48 \ p < .93$	118
Louisiana ¹	(0,1,1)(0,0,3)s	42.20 $p < .11$	115
Mississippi	(0,1,1)(0,0,3)s (0,1,1)(0,0,1)s	25.61 p < .85	117
Missouri ¹	(0,1,1)(0,1,1)s	30.84 p < .62	105
Michigan	(0,0,1)(0,1,1)s	23.99 $p < .90$	106
Indiana¹	(0,1,1)(0,0,3)s	40.12 p < .15	115
New York	(0,1,1)(0,1,1)s	$16.14 \ p < .99$	105
Montana	(0,1,1)	$39.20 \ p < .29$	118
North Dakota	(0,1,1)	45.21 $p < .12$	118
Idaho	(0,1,1)	$26.68 \ p < .84$	118
Nebraska ¹	(0,1,1)(0,0,3)s	41.14 p < .13	115
Oklahoma ¹	(0,1,1)(0,1,1)s	$39.21 \ p < .25$	105
Vermont ¹	(0,1,1)	41.02 p < .14	118
Virginia ¹	(0,1,1)(0,0,1)s	$45.28 \ p < .09$	117
Wyoming	(0,1,1)	$26.36 \ p < .85$	118
Homicide	(, , ,	•	
Arizona	(0,1,1)	43.52 p < .15	118
Arkansas ¹	(0,1,1)	42.87 p < .17	118
California ¹	(0,1,1)	30.54 p < .68	116
Colorado	(0,1,1)	29.05 p < .75	118
Florida	(0,1,1)	35.21 p < .46	118
Georgia	(0,1,1)	39.88 $p < .26$	118
Louisiana	(0,1,1)	37.04 p < .38	118
Michigan	(0,1,1)	42.66 <i>p</i> < .18	118

2006]	DETERRENCE OR I	1477	
Montana	(0,1,1)	37.89 <i>p</i> < .34	118
Nebraska	(0,1,1)	20.51 p < .98	118
Oklahoma	(0,1,1)	36.99 p < .38	118
Mississippi¹	(0,1,1)	33.14 $p < .56$	118
Missouri	(0,1,1)(0,1,2)s	27.94 p < .72	104
Vermont ¹	(0,0,0)	45.90 p < .10	119
Virginia	(0,1,1)	32.72 p < .57	118
Wyoming ¹	(0,1,1)	29.20 $p < .74$	118

Control series italicized.

¹ Log transformations were performed in order to make the series variance stationary.

^{*(}p,d,q)(P,D,Q)s: p = Auto regressive process, d = Differenced, q = Moving average process, P = Seasonal auto regressive process, D = Seasonally differenced, Q = Seasonal moving average process.

^{**} Q-Statistic = Box-Jenkins test statistic for the null hypothesis that the model's residuals are distributed as white noise.