

Utah Sentence Inflation

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COLLEGE OF SOCIAL & BEHAVIORAL SCIENCES
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This study examines the relationship between sentencing statute changes and the prison population in the State of Utah from 1988-2007 for Felony Sex Offenses, Driving Under the Influence of Alcohol/Drugs and Possession of a Controlled Substance.

Executive Summary

- There is good evidence to support the hypothesis that the number of inmates incarcerated for Driving Under the Influence of Alcohol/Drugs (DUI) has increased as the result of felony enhancements for prior DUI convictions.
- In the last twenty years the number of inmates incarcerated for simple possession has increased dramatically, but there is little evidence to support the hypothesis that this population change was directly influenced by statute changes during this time.
- For sex offenses:
 - Decreases in the mandatory minimum sentences for attempted Felony One sex offenses in 1996 were associated with mixed effects; there was an increase in the prison population for attempted aggravated sex abuse of a child (after the 1996 change went into effect) but not attempted sodomy of a child or attempted forcible sodomy.
 - The 1996 mandatory minimum sentence changes were associated with prison population increases for aggravated sex abuse of a child but not for sodomy on a child.
 - Overall, since 1986, the prison population for sex offenders in Utah has been increasing at a steep, steady rate.

Methods

Data was gathered from the state corrections O-Track database. Sample data included entry and release dates of 63,993 prison inmates from 1986 through 2007 who were sentenced to state prison for Driving Under the Influence of Alcohol/Drugs, Sex Offenses or Simple Possession of a Controlled Substance in Utah. A legal researcher catalogued all sentencing statute changes for these categories. This data was analyzed using a simple interrupted time series design and ARIMA time series modeling to determine if time points of sentencing statute changes were associated with prison population changes.

Legal Research

The Utah Criminal Justice Center legal researcher catalogued all sentencing and definitional changes from 1986 through 2007 for the following statutes

Note:

1. For most statutes, changes affecting felony offenders are highlighted in this analysis. Any crimes that were strictly misdemeanor offenses throughout the time period under investigation were omitted.
2. Some minor definitional changes from the statute histories are mentioned in this report for completeness, but are omitted from the time series analysis.

Driving Under the Influence of Alcohol/ Drugs

§ 41-6a-502. Driving under the influence of alcohol, drugs, or a combination of both or with specified or unsafe blood alcohol concentration

§ 41-6a-503. Penalties for driving under the influence violations

Simple Possession of a Controlled Substance

§ 58-37-4. Schedules of controlled substances--Schedules I through V-- Findings required--Specific substances included in schedules

§ 57-37-8. Possession Use of a Controlled Substance

Felony Sex Offenses

§ 76-5-403.1 Sodomy on a child

§ 76-5-404.1 Sexual abuse of a child – Aggravated sex abuse of a child

§ 76-5-404. Forcible sexual abuse (over 14 yrs)

§ 76-5-403. Sodomy -- Forcible sodomy (over 14 yrs)

§ 76-4-102 Attempt – Classification of offenses

Data Procedure

Data was collected from the Utah state corrections offender tracking database (“O-Track”). O-Track is used to keep information on all offenders sentenced in state court, and offenders who serve prison time in the state of Utah. The information used from the database for this study includes: date of entry into state prison, date of exit, statute sentenced under, degree of sentence (Felony vs. Misdemeanor) and reason for entry (new entry vs. probation/parole violation).

The database was queried for all individuals with entry dates between January of 1986 and August 2007 who were sentenced under the statutes listed above (see “Legal Research”). It should be noted that all offenses for which the individual was sentenced were not collected. In other words, if an individual was sentenced to state prison for driving under the influence of alcohol/drugs and possession of a concealed weapon, our data set would only include information regarding the driving under the influence sentence. Consequently, some of the offenders included under our offense categories may have been sentenced for a more serious crime. Though, only felony sentences were included in our analysis.

After the data was collected, it was organized into time series charts. These charts were broken down by month and included the total number of prison inmates by statute and new commitments to prison by statute.

Statute changes were coded into dummy variables (0, 1) to represent when the change went into effect. The dummy variables were lagged by several months to indicate the typical delay from when the crime is committed, until prison entry. For each analysis, the table of time series results indicates what time lag was employed. Additionally, some of the variables were coded with a linear increase over the first year to account for an expected gradual effect on the prison, rather than a sudden “spike.” This is also indicated in the table of results (see “Technical Appendix”).

For statute changes that would influence length of stay for a prisoner (i.e. changes in mandatory minimum sentences), rather than likelihood of entry, the coded intervention variable was sometimes lagged for up to 80 months. The influence of these statute changes can be hard to interpret, due to the fact that they create gradual, delayed increases in the prison population. When employed, this type of analysis is noted in the technical appendix.

To determine whether changes in the prison population were statistically significant, a simple interrupted time series design was used. Procedures were taken from McDowell’s text on the subject (McDowell, McLeary, Meidinger, & Hay, 1980). Specifically, the time series data before the event in question was fit with the best ARIMA model possible. That is, the model used was the simplest possible ARIMA model that adequately minimized the ACF and the PACF functions (i.e. that was the best fit, without “over modeling”). After the best model was identified, it was applied to the entire time series,

with the dummy variable for the statute change as a predictor variable. If the statute variable was significant in the new model, the statute change was said to be associated with a significant change in the population. When examining changes that would be most likely to affect length of stay, rather than new commitments to prison, the number of new commitments per month were controlled for in the model (this was the case for some of the sex offender statute changes).

Importantly, extreme caution should be used in interpreting these types of time series results. At the time the statute change went into effect any number of variables could have created the changes in the prison population. When there is a statistically significant change in prison population, all that can be said is that there is an association between the statute changes and the prison population changes. The time series analysis is helpful in at least giving a criterion through which changes that may appear significant in the time series chart can be analyzed for real significance.

For all results, the statement “a statistically significant increase in the prison population was observed,” we mean there is an increase in the rate of change, as determined by the ARIMA models. All of the prison populations being examined were experiencing increases at any given time, so it would be meaningless to simply indicate we observed an *increase* in the prison population. Rather, we were looking at whether the *rate* of increase changed.

Results

Driving Under the Influence of Alcohol/Drugs

- Before 1990, no Felony statute for Driving Under the Influence (DUI)
- 1990-2000: DUI with prior DUI convictions becomes a Felony Three.
- Steady, high DUI arrest rate over last two decades (between 9,000 and 10,000 arrests per year)
- Strong evidence that statute changes led to a large increase in the DUI prison population

Statute Changes:

Before 1990, a conviction for “Driving Under the Influence of Alcohol/Drugs” (DUI) was a Class B Misdemeanor with no enhancements based on prior convictions.¹ At that time, the only enhancement for a DUI conviction was for an accident with serious bodily injury. In 1990, if there were prior convictions, a DUI was enhanced to either a Class A Misdemeanor or Third Degree Felony, depending upon the number of prior convictions. In 1996, the Class A Misdemeanor was removed and the criteria for a Third Degree Felony DUI was lowered.

Also in 1990, the period of time used to define a prior conviction was increased from 5 years to 6 years. In 2001 it was increased to 10 years, where it now stands today. In 2002 the definition of a prior conviction was amended to include a DUI that had been reduced to a lesser conviction. In 2004, the definition of a prior conviction was amended to include a DUI plea in abeyance.

In 1993, 1994, 1998, and 2001, enhancements that did not involve prior convictions were enacted. In 2002, the DUI statute was expanded to include drugs or a combination of both alcohol and drugs.

¹ For the DUI section of this report, an enhancement is defined as a statutory change in the class of the offense charged and not an increase or decrease in penalty. For example, prior to 1990, there was an increase in the amount of jail time an individual would be sentenced to for a third or subsequent DUI, but the offense remained a Class B Misdemeanor.

1990: Enhancement based on prior convictions and change in the period of time to define a prior conviction.

- A third conviction within 6 years is now a Class A Misdemeanor, if both prior convictions are after April 23, 1990.
- A fourth or subsequent conviction within 6 years is now a Third Degree Felony, if at least three prior convictions are after April 23, 1990.
- Increased the period of time applied to calculate prior convictions from 5 years to 6 years.²

1993: Enhancement not involving prior convictions.

- A conviction of automobile homicide [under Section 76-5-207] while intoxicated is now a prior DUI conviction for enhancement purposes. The automobile homicide conviction must be after May 3, 1993.³

1994: Enhancement not involving prior convictions.

- A DUI with a passenger under 16 years of age in the vehicle at the time of the offense is now a Class A Misdemeanor.⁴

1996: Enhancement based on prior convictions.

- Lowered the number of prior convictions required for a Third Degree Felony from a fourth or subsequent conviction to a third or subsequent conviction. To meet this requirement there must be three prior DUI convictions after April 23, 1990 or two prior convictions after July 1, 1996.⁵

² 1990 Utah Laws Ch. 299 § 1, eff. April 23, 1990 [S.B. 4].

³ 1993 Utah Laws Ch. 168 § 1, eff. May 3, 1993 [S.B. 178].

⁴ 1994 Utah Laws Ch. 159 § 1, eff. March 17, 1994 [S.B. 3].

⁵ 1996 Utah Laws Ch. 71 § 1, eff. July 1, 1996 [S.B. 4].

1998: Enhancement not involving prior convictions.

- A DUI while inflicting serious bodily injury upon another as a proximate result of operating a vehicle in a negligent manner is now a Third Degree Felony.⁶

1999: Enhancement based on prior convictions.

- A third or subsequent DUI conviction is now a Third Degree Felony, if two priors were committed within 6 years.
- Deleted the 1996 language that referred to specific dates a prior conviction had to have taken place to receive a Third Degree Felony.⁷

2001: Enhancement based on prior convictions, change in the period of time to define a prior conviction, and an enhancement not involving prior convictions.

- Made a DUI conviction of automobile homicide [under Section 76-5-207] or any felony DUI conviction, a Third Degree Felony. Either offense must have been committed after July 1, 2001.
- Increased the period of time applied to calculate prior convictions from 6 years to 10 years.⁸
- A DUI is now a Class A Misdemeanor if the driver was 21 years of age or older, and has a passenger under 18 years of age in the vehicles.⁹

2002: Amended the definitions of DUI and a DUI prior conviction.

- Amended the definition of a DUI prior conviction to include “driving with alcohol, drugs, or a combination of both” in the body.
- A DUI conviction that had been reduced [under Section 76-3-402] is classified as a prior conviction for enhancement purposes.¹⁰

⁶ 1998 Utah Laws Ch. 168 § 1, eff. May 4, 1998 [S.B. 63].

⁷ 1999 Utah Laws Ch. 226 § 1, eff. May 3, 1999 [H.B. 236].

⁸ 2001 Utah Laws Ch. 289 §, 1 eff. April 30, 2001 [H.B. 201].

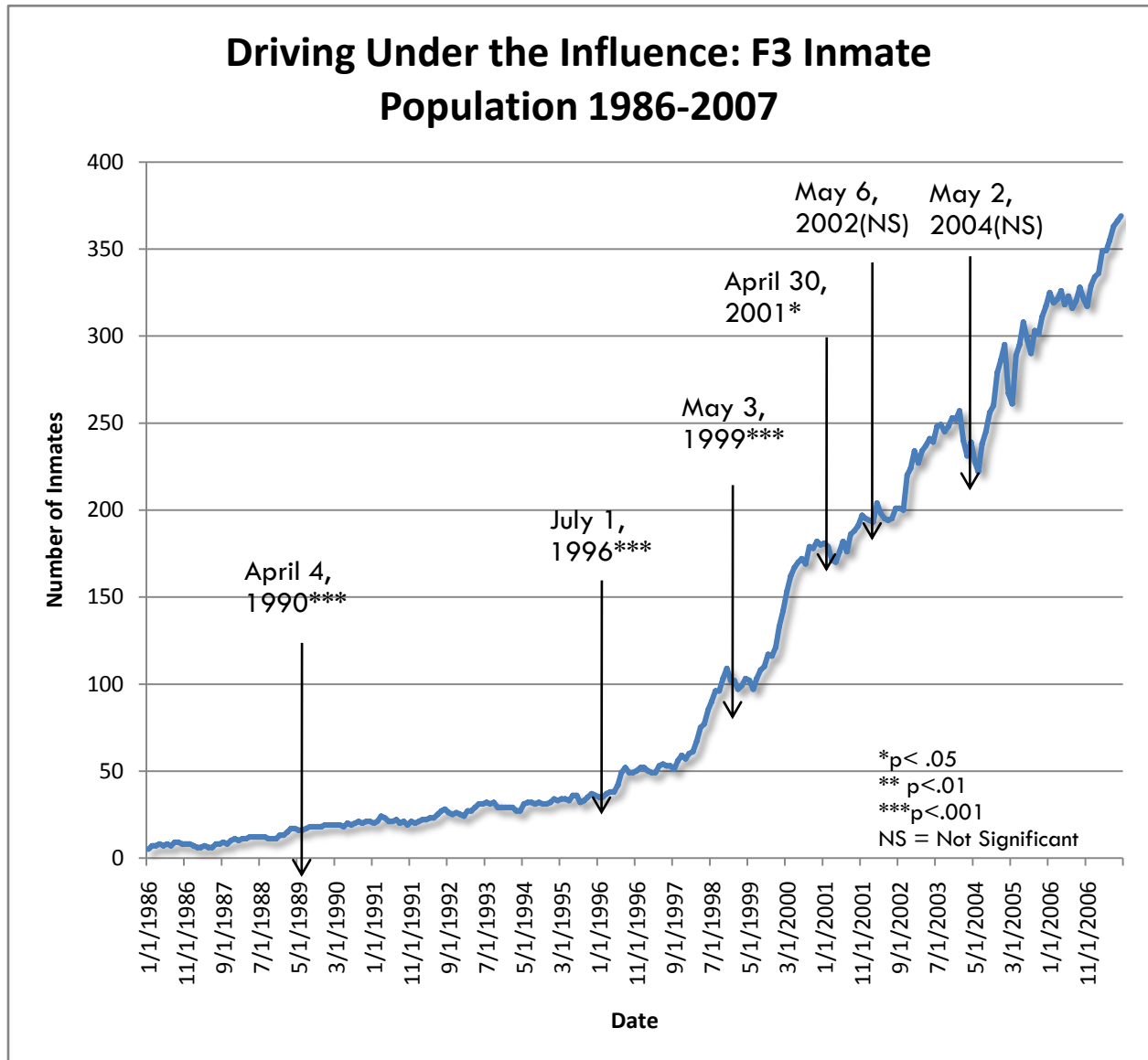
⁹ 2001 Utah Laws Ch. 309 §, 1 eff. July 1, 2001 [H.B. 353].

¹⁰ 2002 Utah Laws Ch. 8 § 1, eff. May 6, 2002 [H.B. 17].

2004: Amended the definition of a DUI prior conviction.

- A DUI plea in abeyance [under Title 77 Chapter 2a] is classified as a conviction for enhancement purposes. This classification applies even if the DUI charge was later dismissed.¹¹

¹¹ 2004 Utah Laws Ch. 228 § 3, eff. May 3, 2004 [S.B. 20].



- **April 1990:** 4th DUI Conviction is now a Felony three (priors must be after 1990)
- **July 1996:** 3rd DUI Conviction is now a Felony three (priors must be after 1996)
- **May 1999:** 3rd DUI Conviction is now a Felony three (*Anytime in last 6 years*)
- **April 2001:** Increased prior "look back" period to 10 years
- **May 2002:** Added "driving under a controlled substance" to statute (for prior charges as well)
- **May 2004:** Plea in abeyance counts as a prior conviction for future DUI charges

Analysis

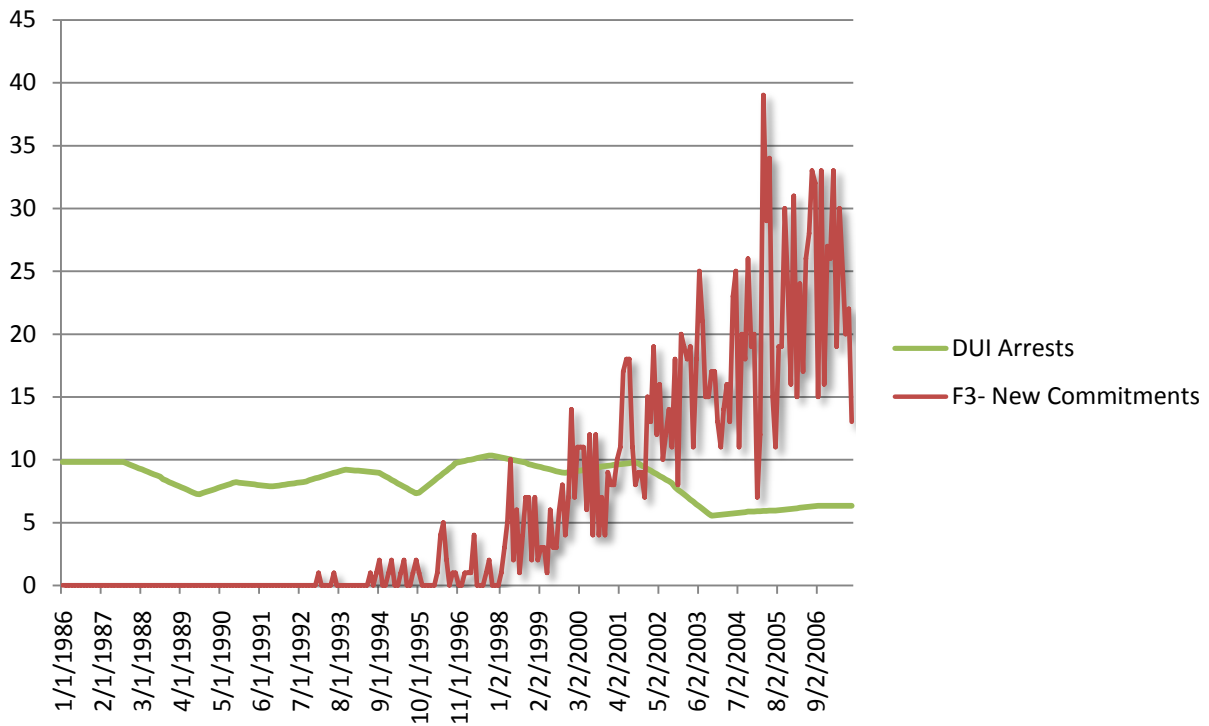
The statutes that were associated with significant changes in the number of inmates for DUI were the 1990, 1996, 1999 and 2001 changes. The 2002 and 2004 statute changes were not associated with changes in the rate of prison growth. All four of the significant statutes created a felony enhancement for what once was a misdemeanor crime. They successively reduced the number of prior convictions required for a felony three conviction, and increased the period of time in which the prior convictions could take place.

It is important to note that the 1990 and 1996 statute changes were modeled on the assumption that one would expect to see growth several years after these statutes went into effect. This is because the prior DUI convictions would have to take place *after* the 1990 and 1996 changes in order to be counted as a prior conviction under those laws. Moreover, this type of change would be extremely difficult to distinguish from growth as the result of other reasons. In the case of DUI, it is easier to say that these statutes are connected to the prison growth, because these changes *created* felony enhancements for DUI. Therefore, the connection is both logical and empirical, though, it is difficult to distinguish which of the several DUI enhancements has had the greatest impact.

When comparing DUI arrests and Felony Three DUI new prison commitments (see chart below), it is notable that the DUI arrests rate has been both steady and high for the last twenty years. According to Utah Bureau of Criminal Identification arrest records, there are about 9,000 to 11,000 DUI arrests per year. As the felony enhancements for prior DUI convictions went in to effect, there is a steady increase in the number of new commitments, while the arrest rate remains relatively constant. This trend lends additional support to the hypothesis that the statute changes for DUI had a dramatic influence on the prison population.

In conclusion, the rising prison population for DUI is a good example of a predictable increase as the result of successive statute changes. Specifically, felony enhancements for prior convictions and a steady, high incidence of DUI arrests, probably led to the increase in the prison population for Driving Under the Influence of Alcohol/Drugs.

New F3 DUI Prison Commitments and Average (Hundreds of) DUI Arrests per Month



Personal Possession

Since 1988, a first conviction for personal possession is a Class B Misdemeanor, a second conviction is a Class A Misdemeanor, and a third or subsequent conviction is a Felony Three. In 2005, a prior conviction of manufacturing or distributing a controlled substance enhanced a personal possession violation by one degree. This change is the only enhancement based on prior convictions from 1988 – 2007. However, in 1988, 1989, 2003, 2004, and 2006 enhancements were enacted that did not involve prior convictions.¹²

Finally, in 1990, 1991, and 1997, changes were made that could impact prison population but that did not that did not involve enhancements. These include changes to the schedule of controlled substances and an expansion of the Drug-Free Zone.

1988: Enhancement not involving prior convictions.

- A Third Degree Felony sentence for possession of marijuana was added. Prior to 1988 possession of less than 16 oz. of marijuana was a Class A Misdemeanor and possession of more than 16 oz. of marijuana was a Second Degree Felony.¹³
- Possession of 1 oz. to 16 oz. of marijuana became a Class A Misdemeanor, possession of more than 16 oz. and up to 100 lbs. of marijuana a Third Degree Felony, and possession of over 100 lbs. of marijuana a Second Degree Felony.¹⁴

1989: Enhancement not involving prior convictions.

- The sentence for possession of a controlled substance is increased by one degree when there is a conviction of possession while inside any correctional facility¹⁵ or any public jail or other place of confinement.¹⁶

¹² For the personal possession section of this report an enhancement is defined as only a statutory change in the class of the offense charged and not an increase or decrease in penalty.

¹³ 1988 Utah Laws Ch. 95 § 1, eff. April 25, 1988 [H.B. 26].

¹⁴ Id.

¹⁵ As defined in Section 64-13-1.

¹⁶ 1989 Utah Laws Ch. 56 § 1, eff. April 24, 1989 [H.B. 139].

1990: Changes to the schedule of controlled substance.

- Various fentanyl based substances were added to the schedule of controlled substances, including any material compound or mixture containing any quantity of fenthylline or ethylamphetamine that has a stimulant effect on the central nervous system.¹⁷

1991: Changes to the schedule of controlled substance and expanded the Drug-Free Zone.

- The Drug-Free Zone was expanded to include areas where minors tend to congregate including: public or private vocational or post-secondary institutions, preschools or child care facilities, public parks, amusement parks, arcades or recreation centers, churches or synagogues, shopping malls, sports facilities, stadium arenas, theaters, movie houses, playhouses, and any public parking lot or structure.¹⁸
- Precursors to amphetamine, methamphetamine, and various amphetamine based substances were added to the schedule of controlled substances.¹⁹

1997: Changes to the schedule of controlled substance.

- The 1991 changes of precursors to amphetamine and methamphetamine were removed from the schedule of controlled substances.²⁰

2003: Enhancement not involving prior convictions.

- A controlled substance DUI violation was increased by one degree when a person operates a motor vehicle in a negligent manner and causes death or serious bodily injury.²¹

¹⁷1990 Utah Laws Ch. 101 § 2, eff. April 23, 1990 [H.B. 109].

¹⁸1991 Utah Laws Ch. 80 § 1, eff. April 29, 1991 [H.B. 176].

¹⁹1991 Utah Laws Ch. 198 § 2, eff. April 29, 1991 [H.B. 248].

²⁰1997 Utah Laws Ch. 64 § 4, eff. May 5, 1997 [H.B. 21].

²¹2003 Utah Laws Ch. 10 § 1, eff. May 5, 2003 [S.B. 7].

2004: Enhancement not involving prior convictions.

- The 1989 enhancement for possession of controlled substances inside a correctional facility was increased to a sentence of 6 months or 1 year to run consecutively not concurrently with the possibility of an additional sentence for an indeterminate term not to exceed 5 years.²²

2005: Enhancement based on prior convictions.

- Personal possession violation was enhanced by one degree when there is a previous conviction for unlawful distribution or manufacturing of a controlled substance.²³

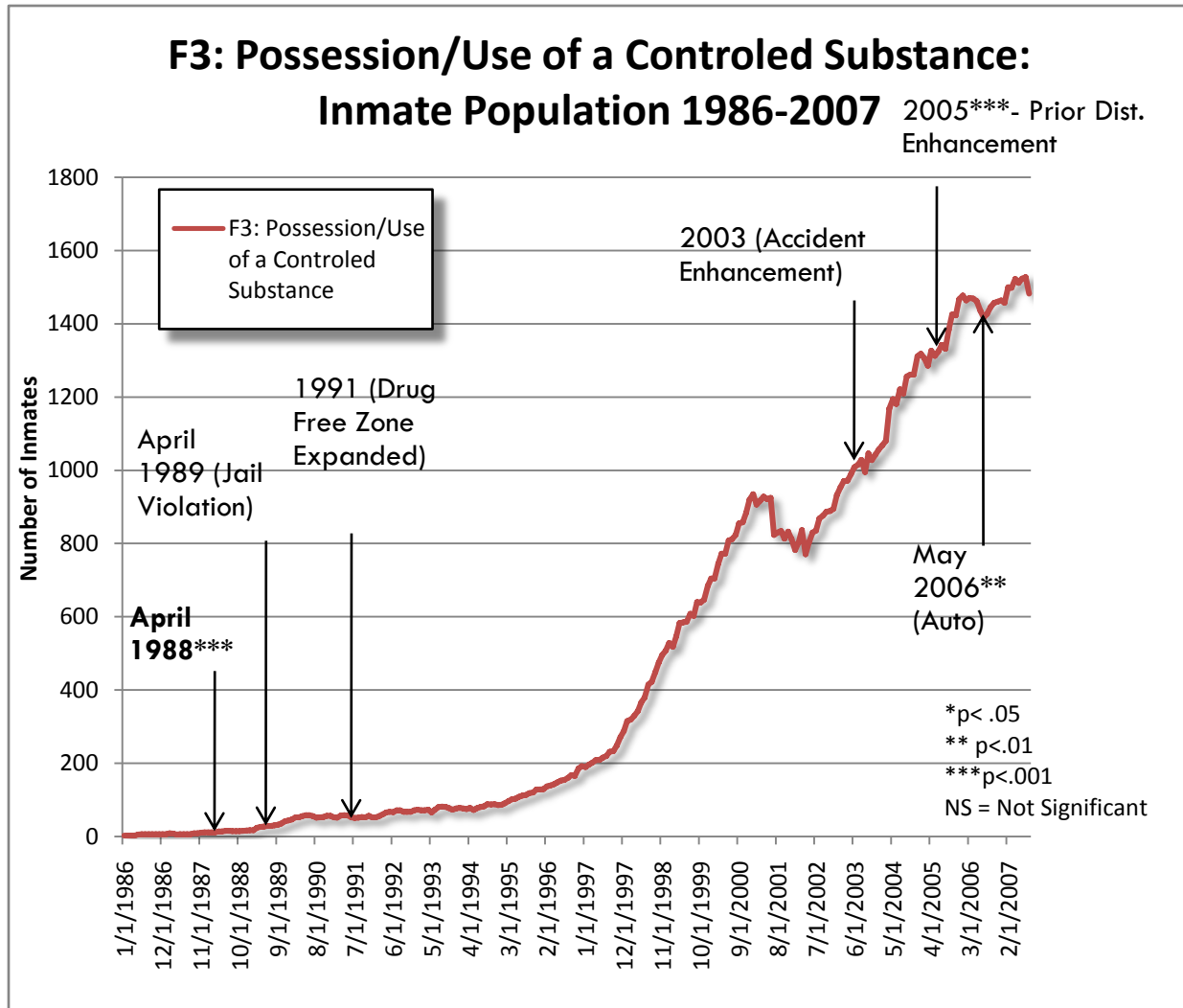
2006: Enhancement not involving prior convictions.

- The 2003 controlled substance DUI enhancement for operating a vehicle and causing serious bodily injury or death was changed from a one degree enhancement to: a Second Degree Felony when the controlled substance in the body is classified under Schedule I or Schedule II, a Third Degree Felony when the controlled substance is marijuana, and a Class A Misdemeanor when the controlled substance in the body is classified under Schedule III, IV, or V.²⁴

²² 2004 Utah Laws Ch. 36 § 1, eff. March 15, 2004 [H.B. 34].

²³ 2005 Utah Laws Ch. 30 § 1, eff. May 2, 2005 [H.B. 55].

²⁴ 2006 Utah Laws Ch. 30 § 1, eff. May 1, 2006 [S.B. 51].



- **April 1988:** Possession of more than 16oz up to 100lbs of marijuana: is a Felony Three
- **April 1989:** One degree enhancement for possession charges when in jail
- **April 1991:** Methamphetamines added to Schedule I Controlled Substances. The Drug Free Zone is expanded
- **May 2003:** One degree enhancement for any controlled substance in body during an accident involving serious bodily injury.
- **May 2005:** One degree enhancement for prior distribution charge.
- **May 2006:** Auto enhancement: Sch. I and II is a 2nd Degree felony. Marijuana, 3rd Degree, others Class A Misdemeanor.

Analysis

Utah statutes for (simple) possession of a controlled substance had relatively minor changes between 1986 and 2004. Though, in 1986 there were 15 inmates whose most severe conviction was simple possession, and in 2004 the number grew to 378 (Utah Department of Corrections Annual Report, 1986)²⁵. And it wasn't until *after* much of the prison population growth had taken place, when a more substantial sentence enhancement was added (2005: one degree enhancement for a prior conviction of distribution or manufacturing). The prison population for simple possession in the state of Utah shows a dramatic change in the last two decades, with few significant statute changes preceding or concurrent with that growth.

The statute changes that were associated with significant growth in the prison population for possession of a controlled substance were: the 1988 change in marijuana sentences, the 2005 prior distribution enhancement and the 2006 auto enhancement changes. The 1988 change created an intermediate sentence between the felony two and misdemeanor A sentences for possession of marijuana. The increase may have been the result of a judge utilizing the Felony three sentence more than the Felony two. The 2005 and 2006 changes both showed a *decrease* in the rate of prison growth, which is inconsistent with the content of the laws passed. This was the likely the result of a prison population that had been growing at such a dramatic rate, that it was experiencing some degree of leveling²⁶. This would mean that the negative rates of change in 2005 and 2006 were independent of the statute changes. Surprisingly, the enlargement of the Drug Free Zone did not have an immediate effect on the prison population, nor did the addition of methamphetamines to the schedule two controlled substance list.

The increase in the prison population for possession of a controlled substance is best explained by the dramatic increase in the arrest rate between 1991 and 1998 (see chart below). Of course, this increase did not affect the prison population significantly until 1996. This delay could be the result of the enhancement (enacted prior to 1986) that three possession convictions would result in a felony three sentence, perhaps creating a lag of several years. Additionally, it is unclear whether the change in number of arrests was due to an increased incidence of drug use or changes in police enforcement.

²⁵ Note that these number are for the most severe conviction. The graphs and ARIMA models used any inmate with possession attached to the group of convictions for which they were sentenced to prison time.

²⁶ 'leveling' in the sense that the rate of growth was slowing, though the population was still growing.



Sex Offenses

Since 1983, forcible sodomy, sodomy on a child, and aggravated sexual abuse of a child is a Felony One. Since 1983, any attempt to commit forcible sodomy, sodomy on a child, or aggravated sexual abuse of a child is also a Felony One.²⁷ Since 1984, forcible sexual abuse and sex abuse of a child is a Felony Two. Prior to 2007, there were no enhancements for forcible sexual abuse and sex abuse of a child.²⁸

In 1995, 1996, and 2007, changes to the minimum sentences for certain sex offenses were made. In 1996 imprisonment was made mandatory for certain sex offenses and the minimum sentence for a Felony One sexual offense was lowered. Finally, in 1998 definitional changes were made.

1995: Lowered certain minimum sentences, raised certain minimum sentences, and changed the effective date.

- Sodomy on a child – The minimum sentences was changed from “5, 10, or 15 years” to “not less than 5 years.”²⁹ The effective date was changed from May 1, 1995 to April 29, 1996.³⁰
- Aggravated sexual abuse of a child – The minimum sentence was changed from “3, 6, to 9 years” to “not less than 5 years.”³¹ The effective date was changed from May 1, 1995 to April 29, 1996.³²

1996: Lowered certain minimum sentences, raised certain minimum sentences, and provided for mandatory imprisonment.

- Attempt – The minimum sentence for an attempt to commit a First Degree Felony sexual offense was lowered from 5 years to 3 years [under Title 76, Chapter 5, Part 4].³³

²⁷ Typically, in non sexual offense crimes an “attempt” to commit a crime is one degree lower than the actual crime itself.

²⁸ For the sex offense section of this report an enhancement is defined as only a statutory change in the class of the offense charged and not an increase or decrease in penalty.

²⁹ 1995 Utah Laws Ch. 337 § 7, eff. May 1, 1995 [S.B. 287].

³⁰ 1995 1st Sp. Sess. Utah Laws Ch. 10 § 8, eff. April 29, 1996 [S.B. 2].

³¹ 1995 Utah Laws Ch. 337 § 8, eff. May 1, 1995 [S.B. 287].

³² 1995 1st Sp. Sess. Utah Laws Ch. 10 § 8, eff. April 29, 1996 [S.B. 2].

- Sodomy on a child – The sentence of “an indeterminate term of not less than 5 years” was changed to “an indeterminate term of not less than 6, 10, or 15 years.” Made imprisonment mandatory.³⁴
- Aggravated sexual abuse of a child –Imprisonment was made mandatory.³⁵

1998: Amended the definition of a person who occupies a position of special trust

- Aggravated sexual abuse of a child –The definition of a person who occupies a position of special trust was expanded to include grandparents, aunts, uncles, or an adult co-habitant of a parent.³⁶

³³ 1996 Utah Laws Ch. 40 § 3, eff. April 29, 1996 [S.B. 26].

³⁴ 1996 Utah Laws Ch. 40 § 9, eff. April 29, 1996 [S.B. 26].

³⁵ 1996 Utah Laws Ch. 40 § 10, eff. April 29, 1996 [S.B. 26].

³⁶ 1998 Utah Laws Ch. 131 § 1, eff. May 4, 1998 [H.B. 267].

2007: Enhancement not based on prior convictions, added minimum sentences, and raised minimum sentences.

- Forcible sodomy – A minimum sentence of 5 years was added. The minimum sentence was increased to 15 years when there was serious bodily injury and to life without parole when there is a previous conviction of a grievous sexual offense. A specific lesser term is allowed to be imposed when the court finds it in the interest of justice and records the reasoning on the record.³⁷
- Forcible sexual abuse – The degree charged is enhanced from a Second Degree Felony to a First Degree Felony when there is serious bodily injury. A minimum sentence of 1 year is added to the Second Degree Felony charge. A minimum sentence of 15 years is added to the First Degree Felony charge. A specific lesser term is allowed to be imposed when the court finds it in the interest of justice and states the reasoning on the record.³⁸
- Sodomy on a child – The minimum sentence was raised from 6 years to 15 years. The minimum sentence was increased to life without parole when there is serious bodily injury or a previous conviction of a grievous sexual offense. A specific lesser term is allowed to be imposed when the court finds it in the interest of justice and states the reasoning on the record.³⁹
- Aggravated sexual abuse of a child – The minimum sentence is raised from 5 years to 15 years. The minimum sentence is increased to life without parole when there is serious bodily injury or a previous conviction of a grievous sexual offense. A specific lesser term is allowed to be imposed when the court finds it in the interest of justice and states the reasoning on the record.⁴⁰

Note: 2007 statute changes were omitted from the analysis. It will take several years (perhaps as long as a decade) before there is sufficient data to evaluate these changes.

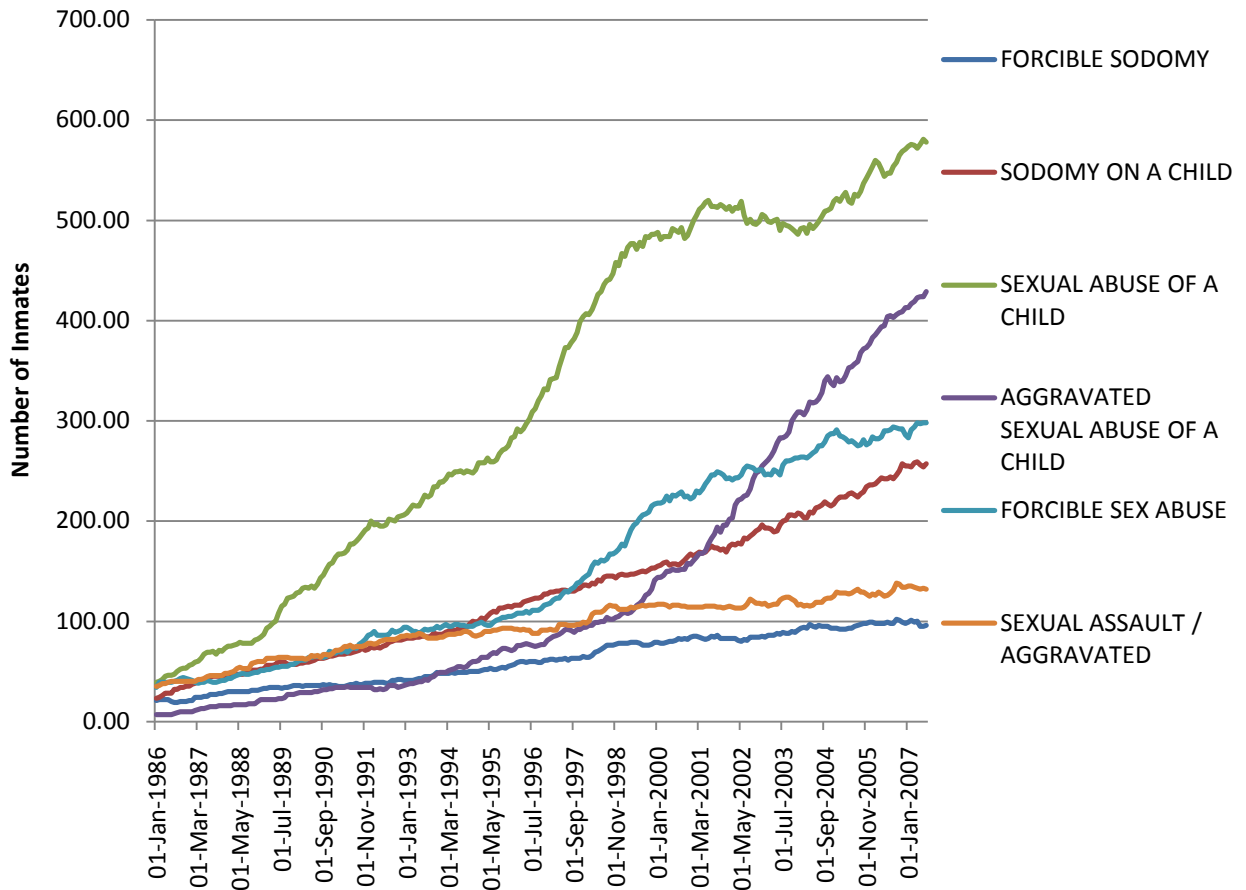
³⁷ 2007 Utah Laws Ch. 339 § 16, eff. April 30, 2007 [H.B. 86].

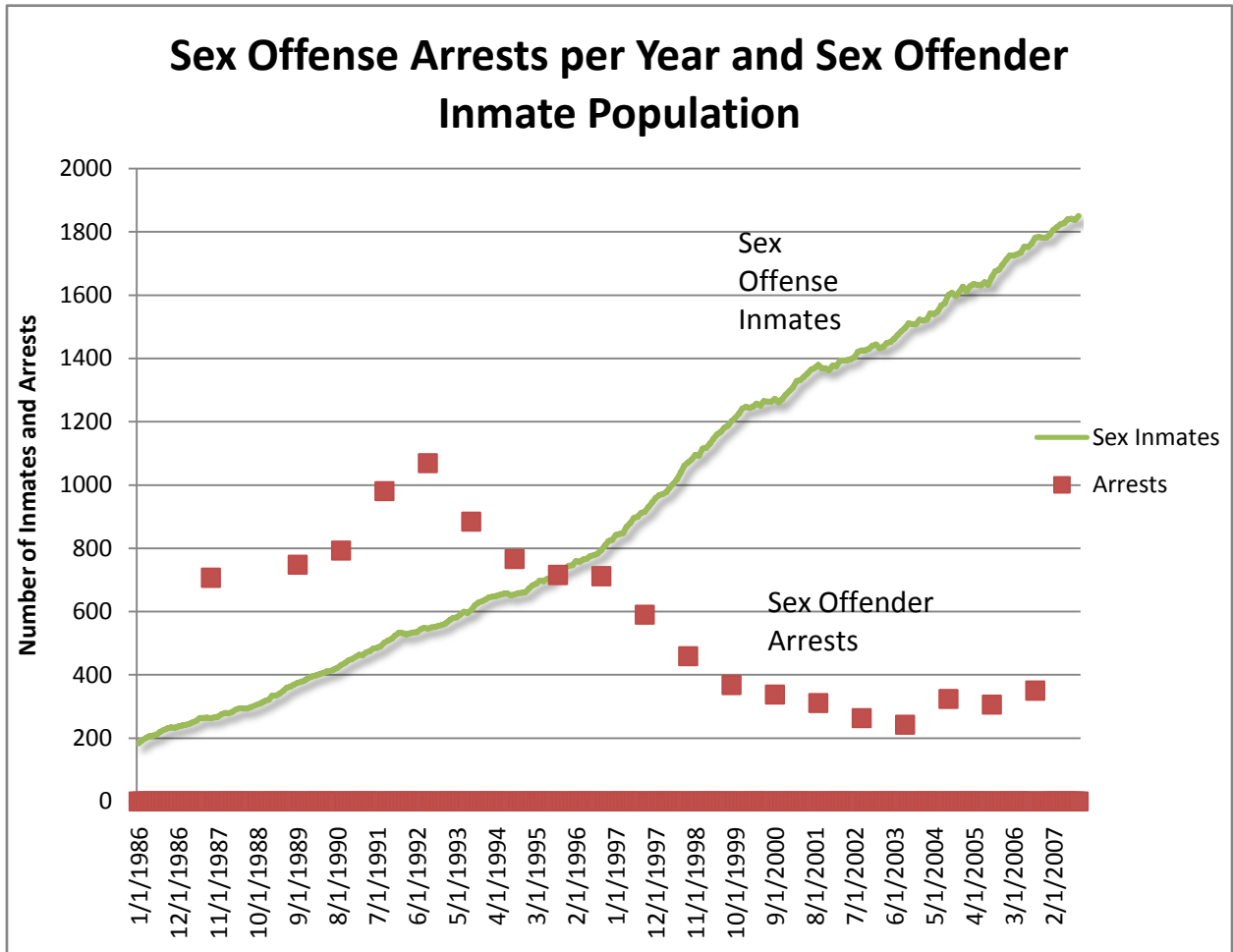
³⁸ 2007 Utah Laws Ch. 339 § 18, eff. April 30, 2007 [H.B. 86].

³⁹ 2007 Utah Laws Ch. 339 § 17, eff. April 30, 2007 [H.B. 86].

⁴⁰ 2007 Utah Laws Ch. 339 § 19, eff. April 30, 2007 [H.B. 86].

Number of Sex Offender Inmates by Statute (only top six)

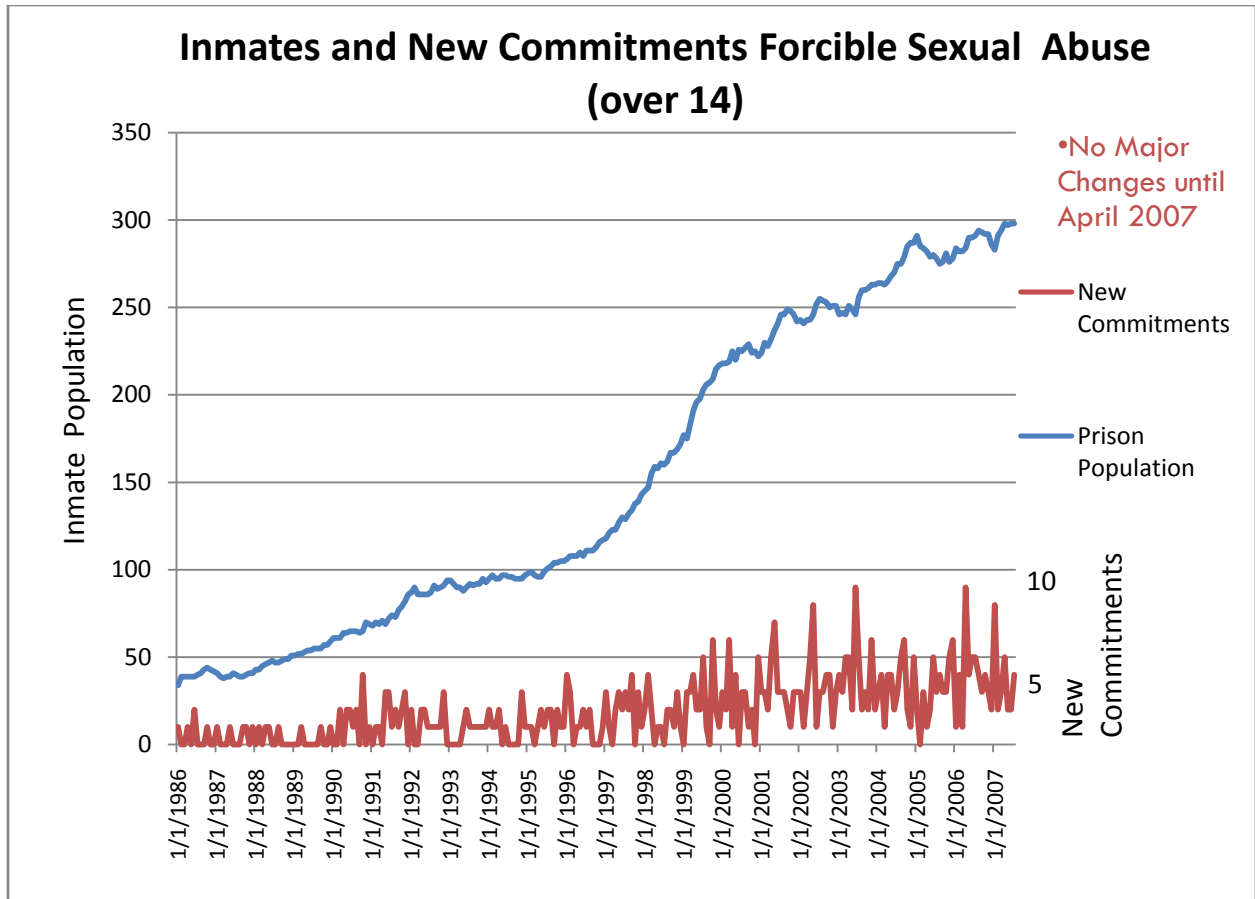




*Note: Sex offender arrests may not be a good measure of incidence, due to the fact that charging may occur in a different manner for sex offenses, compared to DUI and Possession.

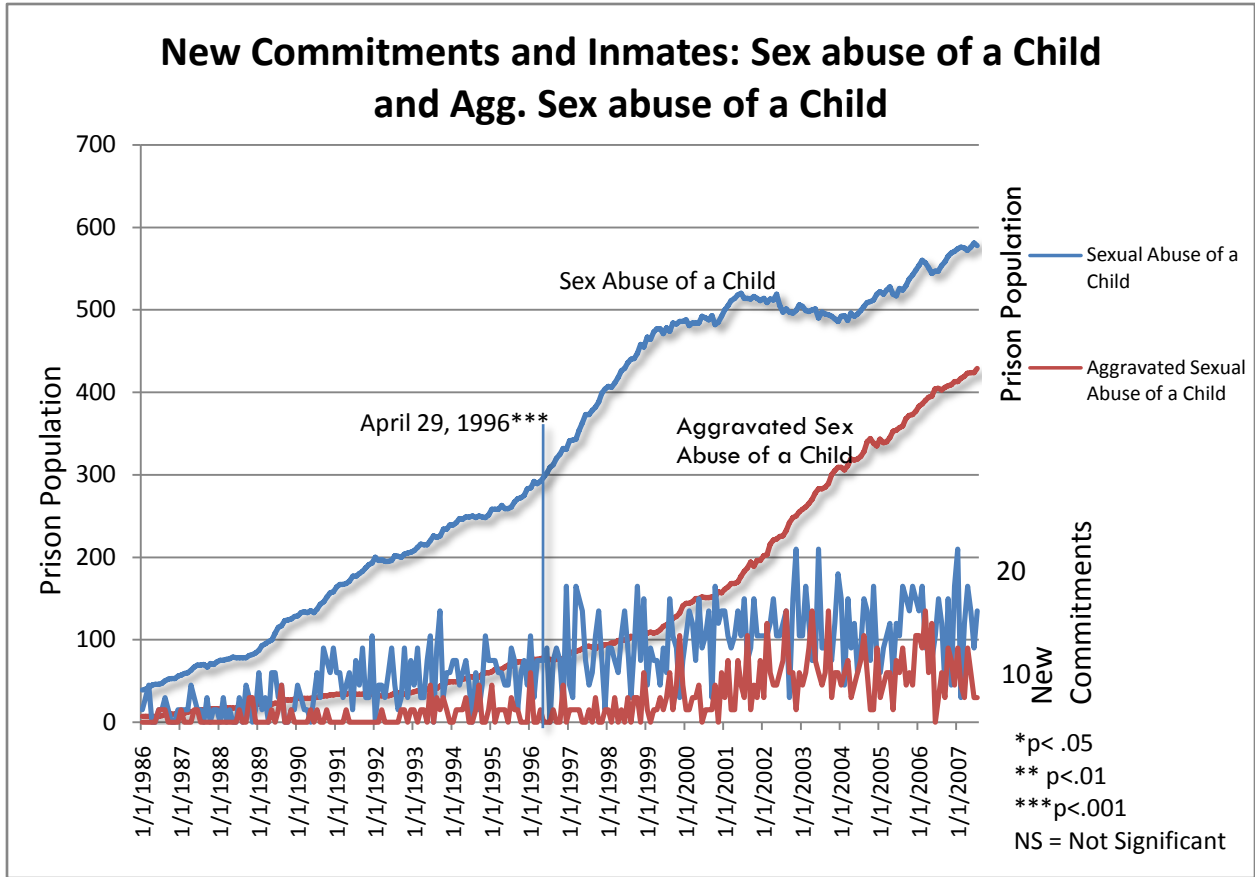
Analysis

In comparison to DUI and Simple Possession, it is notable that the Sex Offender prison population exhibits a relatively steady rate of growth over the last twenty years. Additionally, while the increase in the prior two categories was influenced mainly by large numbers of new commitments per year, the sex offender population is affected more by length of stay. The following six convictions account for most of the prison population for sex offenders: sex abuse of a child, aggravated sex abuse of a child, forcible sex abuse, sodomy on a child, aggravated sexual assault and forcible sodomy (in order from highest to lowest).



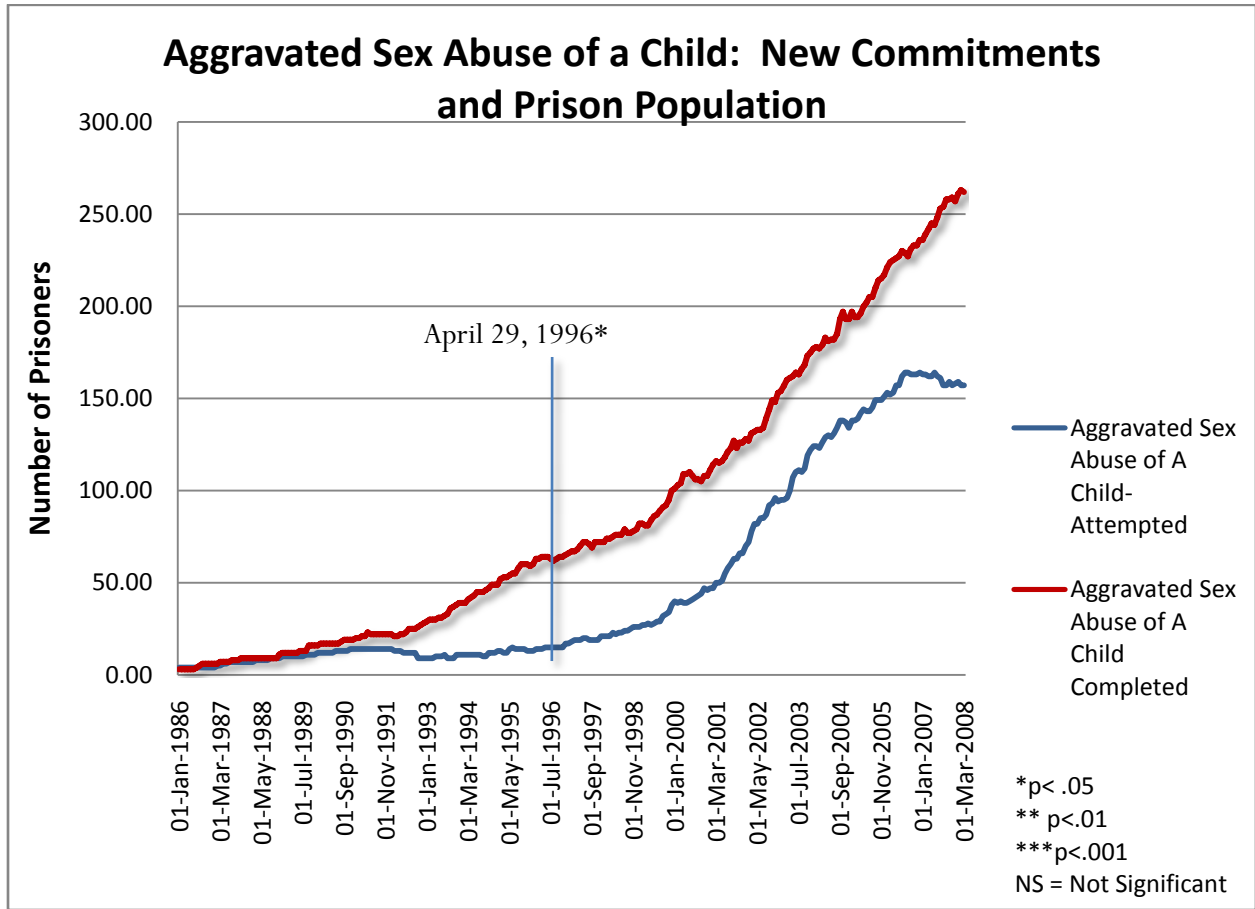
Forcible Sex Abuse

Forcible Sex Abuse showed a noticeable increase in its growth rate between 1997 and 2000 despite having no sentencing statute changes between 1986 and 2007. This change in the prison population was not accompanied by a dramatic leap in new commitments, but was instead due to changes in length of stay. The change in the forcible sex abuse prison population between 1997 and 2001, without any statute changes, suggests that the similar prison population growth in Sex Abuse of a Child and Aggravated Sex Abuse of a Child could be the result of non-statutory influences.



Sex Abuse of a Child

Sexual abuse of a child has not had any sentencing statutory changes between 1986 and 2007. Nonetheless, we tested the hypothesis that adding mandatory minimum prison time for aggravated sexual abuse of a child (a Felony One crime) may have increased the number of individual pleading guilty to Felony Two sexual abuse of a child. The 1996 change was associated with a significant increase in the prison population for Felony Two Sex Abuse of a Child. As mentioned before, this statute was exhibiting a similar increase that was seen in Forcible Sex Abuse, and may have been the result of other trends occurring at the time.

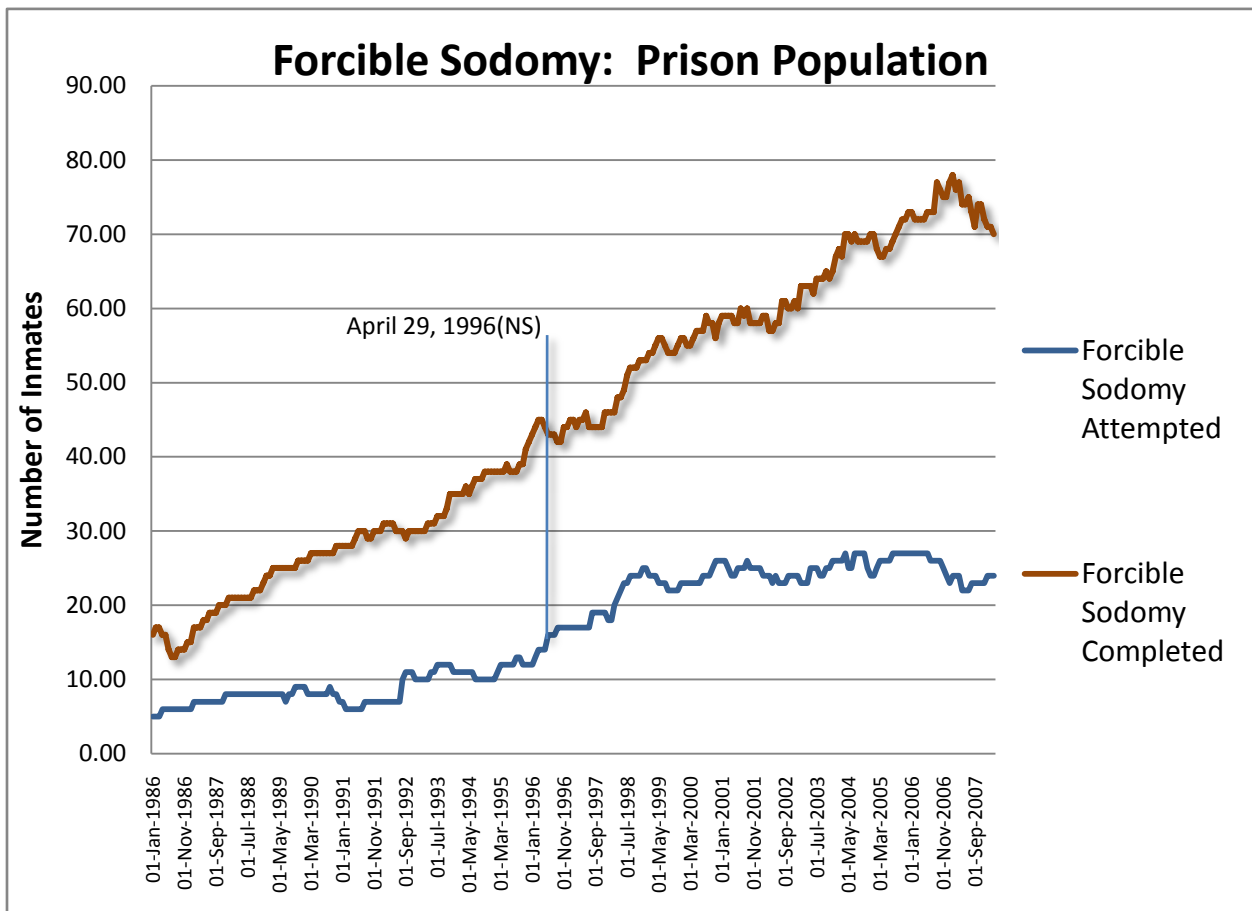


Aggravated Sex Abuse of a Child and Forcible Sodomy: Attempted and Completed⁴¹

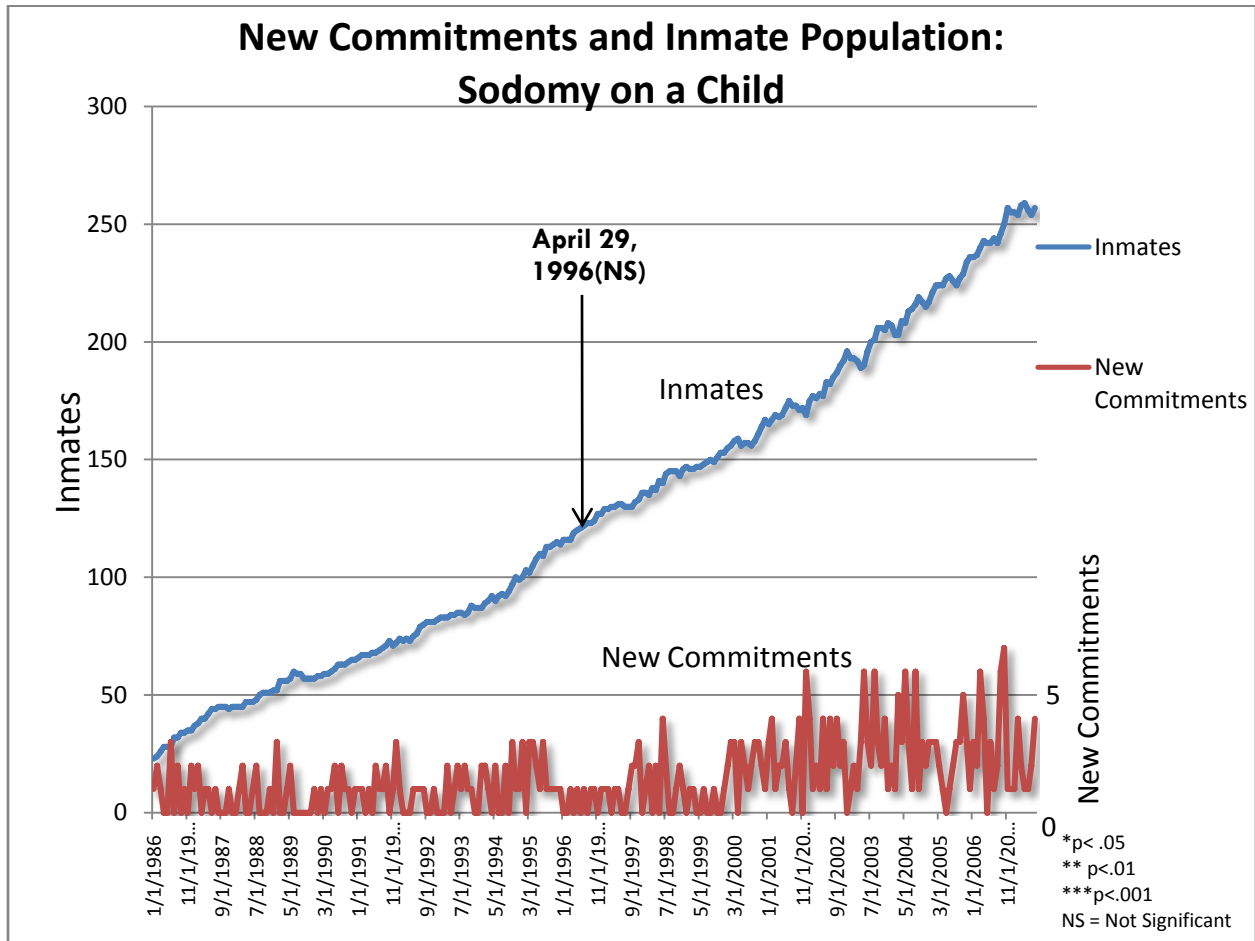
In 1996, the minimum sentence for attempt to commit a Felony One sex offense was *lowered* from 5 years to 3 years. It was hypothesized that this change may increase the sex offender population, due to an increase in the number of individuals who plea to this lesser (though indeterminate) sentence. The data showed results consistent with this hypothesis. There was a significant increase in the inmate population for Attempted Aggravated Sex Abuse of a Child, as well as the *proportion* of total inmates incarcerated for Attempted Aggravated Sex Abuse of a Child.

⁴¹ “Completed” is not a legal term or used in this statute title, but was added to contrast with “attempted” in this summary for clarity.

The prison population for completed Aggravated Sex Abuse of a Child showed a significant increase after the 1996 change.⁴² Interestingly, the same statute changes went into effect for Forcible Sodomy and Sodomy on a Child, and no statistically significant increases in the prison population were observed (see technical appendix for table of results).



⁴² For the attempted and completed analysis, we tested the hypothesis that there would be an increase in the prison population soon after the statute went into effect. For the rest of the sex offender changes, we tested the hypothesis that one would see a change in the distant future, due to increased lengths of stay. See “transfer function” in the ARIMA tables, Technical Appendix.



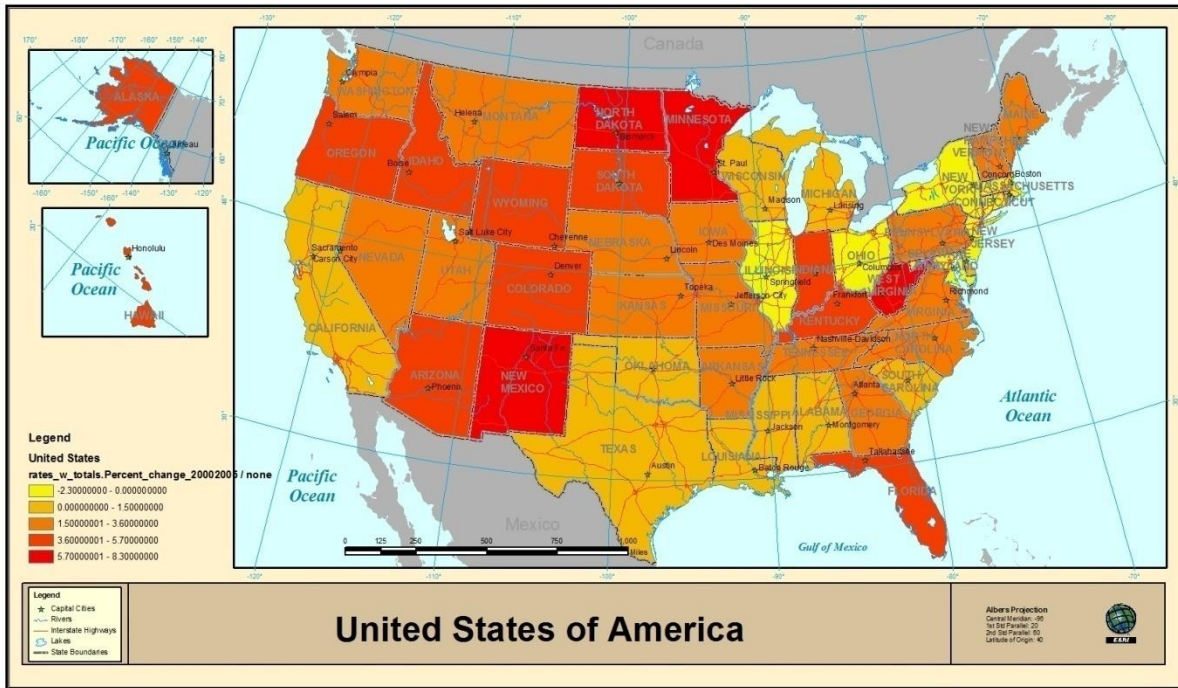
Sodomy on a Child

In 1996, the mandatory sentence for Sodomy on a Child was changed from a minimum of 5 years, to a minimum of 6, 10 or 15 years. Surprisingly, this change was not associated with a significant change in the prison population for this conviction. The prison population for Sodomy on a Child shows an almost linear increase from 1986 until 2007. Though the number of inmates with this conviction is more than five times what it was in 1987, there was no point in time where the rate of increase changed dramatically. This is a good example of a change that one might have expected to have a large effect on the prison population, but instead, it seems to have had very little. (Though, it is possible that the increases in length of stay may not completely affect the population for several more years). Additionally, there were no statistically significant changes observed for differential effects of the 1996 change on attempted and completed Sodomy on a Child.

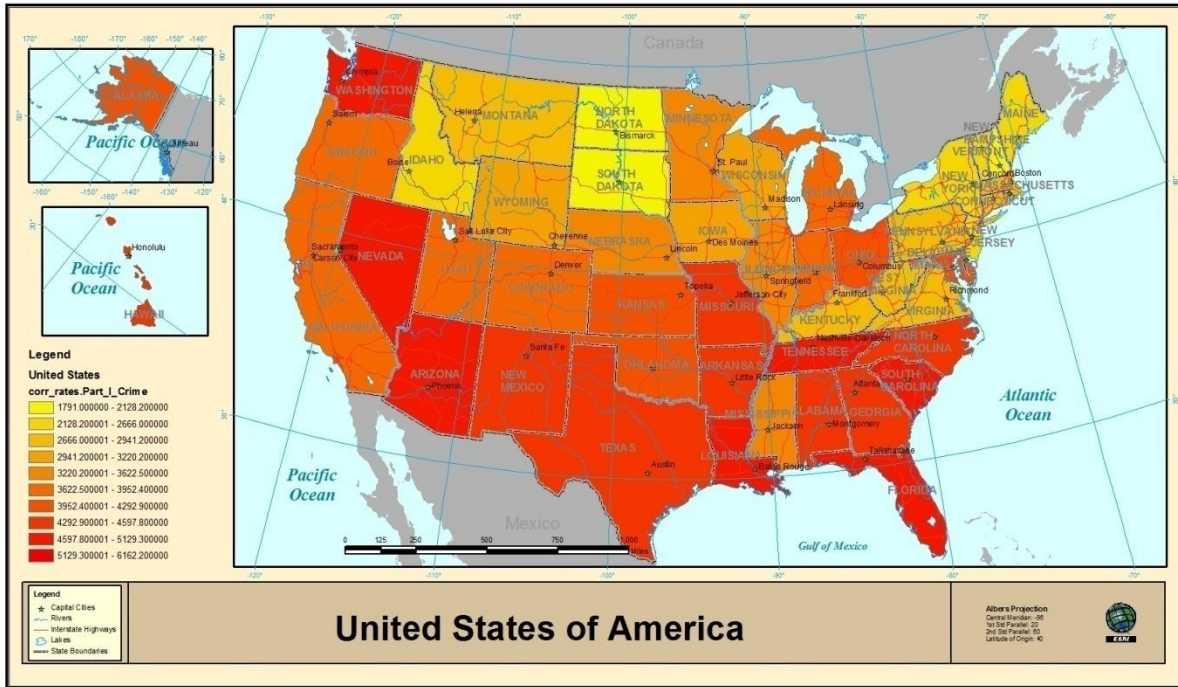
Appendix: National Crime and Incarceration Rate Comparison

Incarceration rates are from the Bureau of Justice Statistics report “Prisoners in 2006”. The definition of “prison inmate” is operationalized to mean an offender sentenced to incarceration of one year of more. Crime rates are from the FBI Uniform Crime Reporting system for the 2006 calendar year.

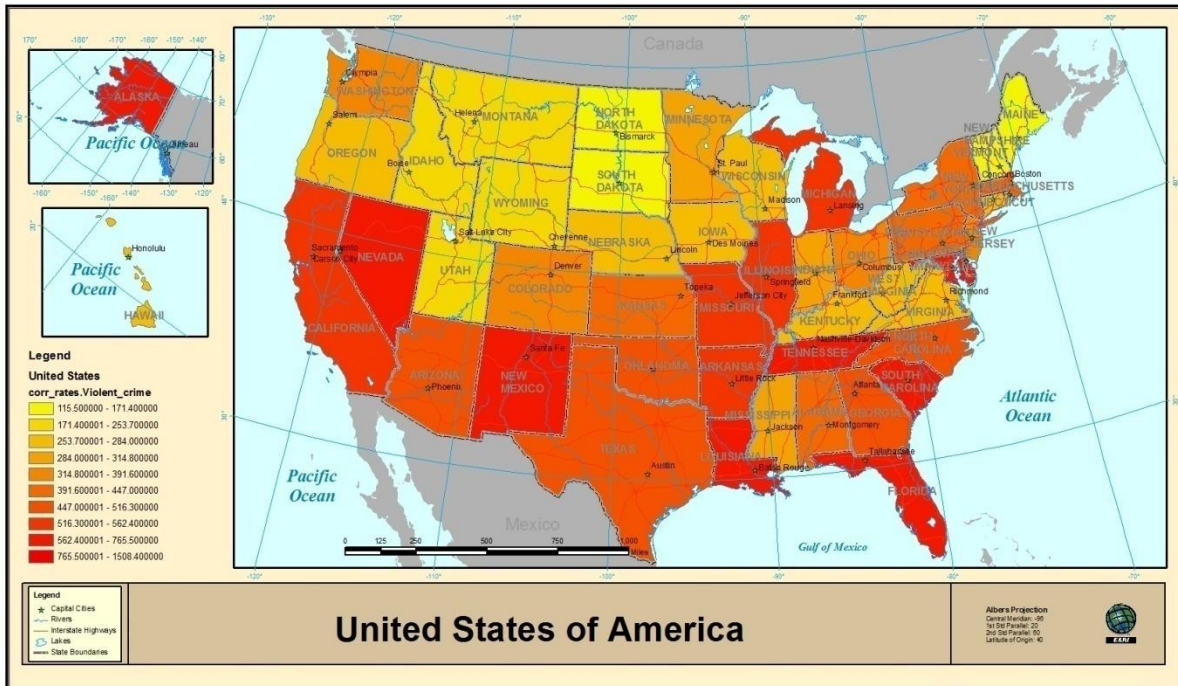
% Change in Prison Population by State (2000-2005)



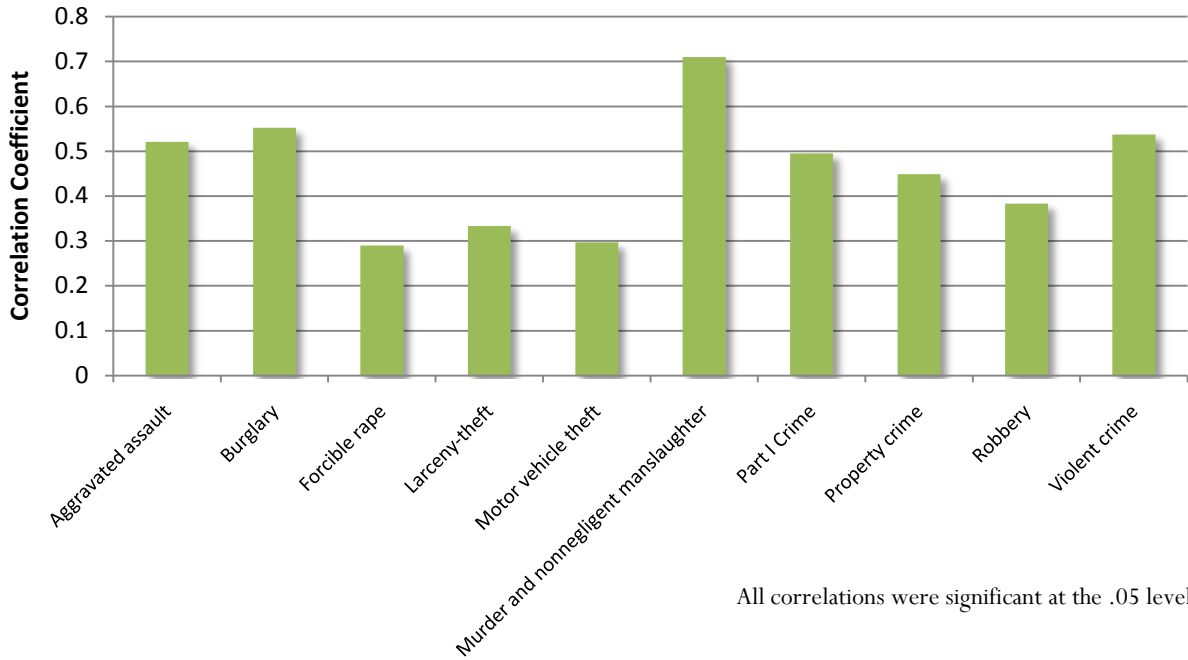
Part One Crime Rates by State (FBI Uniform Crime Reporting 2006)



Part One Violent Crime Rates by State (FBI Uniform Crime Reporting 2006)



Correlations Between State Prison Incarceration Rate 2006 and FBI Part One Uniform Reported Crime Rates 2006



Technical Appendix

ARIMA Models Used for Driving Under the Influence of Alcohol/Drugs, Inmates

Date of Statute	Pre-model	Pre-model Ljung-Box	Pre-Model Fit R ²	P	Transformations
April 4, 1990	(0,0,0) ⁴³	-	-	P < .001	80 Month Slow Growth Y = 1/(80-m)
July 1, 1996***	(1,0,0)(1,0,0)	p = .11	.28	P < .001	50 Month gradual rising intervention Y = 1/(50-m)
May 3, 1999***	(0,1,1)	P = .39	.28	P < .001	No Transformation
April 30, 2001* ⁴⁴	(1,1,10)	P = .23	.45	P = .029	No Transformation
May 6, 2002	(0,1,5)	P = .004	.31	P = .11	No Transformation
May 4, 2004	(0,1,3)(0,1,1)	p = .138	.66	p = .076	No Transformation

ARIMA Models Used for Possession of a Controlled Substance, Inmates

*p < .05
 ** p < .01
 ***p < .001
 NS = Not Significant

	Pre-model	Pre-model Ljung-Box	Pre-Model Fit R ²	Post-Model t	P	R ²	Transformations
April 25, 1988***	(0,0,0)	.19	-	5.54	<.000	.107	Lag 2 months
April 24, 1989 (NS)	(0,1,1)	.008	.443	1.17	.24	.430	Lag 2 months
April 29, 1991 (NS)	(1,1,1)	.170	.415	1.51	.13	.436	Lag 2 months
May 5, 2003 (NS)	(0,1,4)	.000	.372	-1.61	.87	.466	Lag 2 months
May 1, 2005***	(2,1,9)(0,1,1)	.000	.597	-3.28	.001	.706	Lag 2 months
May 1, 2006**	(2,1,9)(0,1,1)	.000	.612	-2.85	.005	.703	Lag 2 months

⁴³ Note: no model correction was needed prior to 1990 (i.e. a static line was the best model, because there were no F3 inmates prior to 1990).

⁴⁴ An ARIMA(1,1,10) model is unusual, but it represents consistent spikes in the time series every 10 months, prior to 2001, that remained after the time series was differenced. This is the only model that yielded a non-significant Ljung-Box statistic.

ARIMA Models Used for Sodomy on a child F1 Inmates

	Pre-model	Pre-model Ljung- Box	Pre- Model Fit R ²	Post- Model t	P	R ²	Transformations
April 1996(F1)(NS)	(0,1,1)	.98	.04	1.28	.12	.013	12 mo. Linear Increase
April 1996 Lagged 5 years	(0,1,1)	.98	.04	.46	.64	.03	12 mo linear Increase, lagged at 5 years. Controlled for new commitments.

*p< .05
 ** p<.01
 ***p<.001
 NS = Not Significant

ARIMA Models Used for Aggravated Sex Abuse of a Child F1 Inmates

	Pre-model	Pre-model Ljung- Box	Pre- Model Fit R ²	Post- Model t	P	R ²	Transformations
April 1996(F1)(NS)	(1,0,0)	1.00	.97	.98	.32	.99	12 mo. Linear Increase
April 1996 lagged***	(1,0,0)	1.00	.97	5.18	<.001	.99	5 year lag, 12 mo linear increase controlling for new commitments

ARIMA Models Used for Sex Abuse of a Child F2

	Pre-model	Pre-model Ljung- Box	Pre- Model Fit R ²	Post- Model t	P	R ²	Transformations
April 1996(F1)***	(1,0,0)	1.00	.97	4.62	<.001	.992	12 mo. Linear Increase

*p<.05
 ** p<.01
 ***p<.001
 NS = Not Significant

ARIMA Models for Attempted vs. Completed F1 Sex Offenses (1996 change)

Statute	Attempted?	Intervention Date	ARIMA Model	Transfer Function	R ²	Ljun-Box Model Fit	P value	Sig?
Sodomy on a Child	Y	4/29/1996	(2,1,0)	10 Month Linear, 3 month delay	0.991	19.10 df = 17 Sig = .322	p = 0.762	NS
Sodomy on a Child	N	4/29/1996	(0,1,4)	10 Month Linear, 3 month delay	0.996	13.60 df = 17 sig = .695	p = .216	NS
Forcible Sodomy	Y	4/29/1996	(0,1,0)	10 Month Linear, 3 month delay	0.945	29.92 df = 18 sig = .038	p = .613	NS
Forcible Sodomy	N	4/29/1996	(0,1,0)	10 Month Linear, 3 month delay	0.994	15.31 df = 18 sig = .640	p = .906	NS
Agg Sex Abuse of a Child	Y	4/29/1996	(0,1,0)	10 Month Linear, 3 Month delay	0.961	20.11 df = 18 Sig = .326	p = .000	Sig
Agg Sex Abuse of a Child	N	4/29/1996	(0,1,0)	10 Month Linear, 3 Month delay	0.998	18.65 df = 18 sig = .413	p = .000	Sig.

Works Cited

(2006). *Crime in the United States*. Washington, DC: FBI: Uniform Crime Reporting.

McDowell, M., McLeary, R., Meidinger, E., & Hay, R. (1980). *Interrupted time series analysis*. London: Sage.

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