

Who Shall Live and Who Shall Die? An Analysis of Prisoners on Death Row in the United States

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ABSTRACT

Using data on the entire population of prisoners under a sentence of death in the United States between 1977 and 1997, this paper investigates the probability of transition from death row to various possible outcomes (execution, death by other causes, commutation, and overturned sentence or conviction) in any given year, as well as the probability of commutation when reaching the end of death row. The analyses control for personal characteristics and previous criminal record of death row inmates and a number of characteristics of the state where the inmate is in custody, including variables that measure the degree to which the political process enters into the final outcome in a death penalty case. The results show that who lives and who dies on death row depends on the race and gender of the inmate, the race and political affiliation of the governor, and whether the governor is a lame duck.

Although the facade of the United States Supreme Courthouse assures “equal justice under law,” many observers of the U.S. legal system are concerned that biases lead to unfair treatment in the courts on the basis of race, social class, or gender. The use of the death penalty has also been criticized by those who point to reversals in convictions due to

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recent improvements in the analysis of physical evidence. Still others suggest that political maneuvering may undermine equitable application of the death penalty.

Some of the concerns arise because of the racial and gender imbalances in the prison populations. In 2000, about 47 percent of all inmates in state prisons were black, although they accounted for only 12 percent of the U.S. population (U.S. Census Bureau 2002). In the same year, 94 percent of inmates in state prisons were male (U.S. Department of Justice 2002), even though 49 percent of the population is male. The prison population under sentence of death is also characterized by race and gender compositions that differ markedly from the U.S. population. Specifically, in 2000 about 43 percent of all death row inmates were black and 98.5 percent were male (U.S. Department of Justice 2001). Obviously, these raw statistics do not necessarily imply discrimination against blacks or males. For example, blacks may be legitimately overrepresented in the prison population if they are more likely to engage in criminal activity. Arrests of black suspects constituted about 28 percent of all arrests in 2000, and 49 percent of all suspects arrested for murder and nonnegligent manslaughter in the same year were black (U.S. Department of Justice 2002).

Nevertheless, these race and gender patterns, combined with the irrevocable nature of execution, have prompted concerns over inequitable differences in the application of the death penalty in the United States. In 1972, the U.S. Supreme Court ruled that the administration of the death penalty at that time was unconstitutional because there was no justifiable basis for determining who would live and who would be sentenced to die. States responded in the mid-1970s by enacting revised legislation that addressed the Supreme Court's concerns, allowing capital punishment to resume.

Capricious application of the death penalty remains a widely debated topic. In part because of the recent increase in executions and some highly politicized cases and in part because of recent commutations and questions about evidence, objective use of the death penalty has become an important item on the political agenda. In addition to political activists (Jackson 1996), many legislators and governors have voiced concerns over the application of the death penalty, and a bill has been introduced in the U.S. Congress to abolish the death penalty under federal law (Federal Death Penalty Abolition Act of 2001, sec. 191).¹

1. The Federal Death Penalty Abolition Act of 2001 was introduced by Senator Russell Feingold on January 25, 2001.

In this paper, we use a data set compiled by the U.S. Department of Justice to investigate the resolution of capital punishment cases after sentencing. By examining the entire population of inmates under a sentence of death between 1977 and 1997, we analyze whether there are differences in the outcomes of cases on the basis of race, ethnicity, gender, or other factors unrelated to the nature of the crime or the criminal's history. We link the data on death row inmates to a number of characteristics of the state of incarceration, including variables that allow us to assess the degree to which the political process enters into the final outcome in a death penalty case. Although conviction and sentencing are largely outside of the political arena, state governors play a potentially important role in the ultimate resolution of a death penalty case. A governor may choose to commute the sentence of a prisoner who is awaiting execution, and political motivation may play a role in this decision. Specifically, we investigate whether the timing and results of gubernatorial elections and the race, gender, and party affiliation of the governor have an influence on the probability that a prisoner under capital sentence is executed.

We find that the age and education of an inmate have an impact on the probability of commutation. In addition, the race and gender of the inmate alter this probability. Furthermore, the race and political affiliation of the governor and whether the governor is a lame duck influence the execution/commutation decision.

In Section 1 we provide a brief history of the death penalty in the United States. Section 2 discusses prior research and some conceptual issues; Section 3 presents the model and the empirical methodology. Section 4 describes the data, the results are presented in Section 5, and Section 6 concludes the paper.

1. THE DEATH PENALTY IN THE UNITED STATES

Figure 1 illustrates the time-series pattern of executions in the United States between 1930 and 2000.² During this time period, 4,542 individuals were executed in the United States, with the bulk of the executions occurring in the 1930s and 1940s and executions declining through 1967. A Supreme Court decision suspended executions between 1970 and 1977, but there has been a steady increase in executions since

2. Data were obtained from the Bureau of Justice Statistics (U.S. Department of Justice 2002).



Figure 1. Executions in the United States

1977. There were three executions in the United States between 1977 and 1980. The number of executions increased to 47 during the period of 1981–85 and to 93 in 1986–90. In the first half of the 1990s, there were 170 executions, and the number of executions more than doubled in the second half of the decade (1996–2000) to 370. It should be noted, however, that this trend in executions since the early 1980s can be attributed to the increase in population and the increase in homicides that took place between 1970s and 1990. Specifically, the rate of executions is much lower than the one that prevailed in the early to mid-twentieth century. For example, in 1930 there were approximately 1.5 executions per 1 million people. The rate was .5 executions per 1 million people in the early 1950s and .3 executions per 1 million people in the late 1990s. When the number of executions was rising between the mid-1970s and 1990, the homicide rate was also. The rate of murder and nonnegligent manslaughter was 7.87 per 100,000 people in 1970, and it increased to 9.42 in 1990.

In the late 1960s, 40 states had laws authorizing use of the death penalty. However, strong pressure by those opposed to capital punishment resulted in few executions. In 1972, the Supreme Court struck down federal and state laws that had allowed wide discretion that resulted in arbitrary and capricious application of the death penalty (*Furman v. Georgia*, 408 U.S. 238 [1972]). Consequently, executions were halted, and hundreds of inmates had their death sentences lifted. Three of the Supreme Court justices voiced concerns that included the appearance of racial bias against black defendants. Furthermore, laws that imposed a mandatory death penalty and that allowed no judicial or jury discretion beyond the determination of guilt were declared unconstitutional in 1976 (*Woodson v. North Carolina*, 428 U.S. 280 [1976]; *Roberts v. Louisiana*, 428 U.S. 325 [1976]).

Starting in mid-1970s, many states reacted by adopting new legislation to address the concerns of the Supreme Court; these new state laws were upheld by the Supreme Court (for example, *Gregg v. Georgia*, 428 U.S. 153 [1976]; *Jurek v. Texas*, 428 U.S. 262 [1976]; and *Proffitt v. Florida*, 428 U.S. 242 [1976]). New state statutes created two-stage trials for capital cases, where guilt/innocence and the sentence were determined in two different stages. The first post-*Gregg* execution took place in 1977, and the number of executions has continued to rise.

Figure 2 displays the proportion of death row prisoners who are

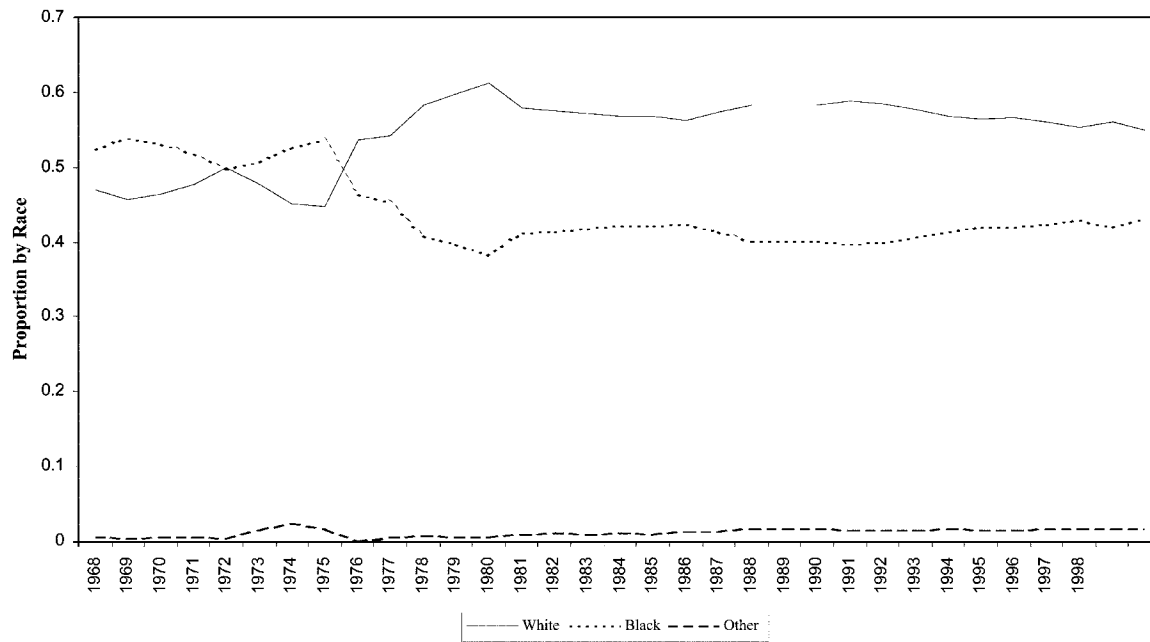


Figure 2. Racial distribution of prisoners on death row

white, black, or “other race” since 1968.³ The proportion of whites remained stable, at around 48 percent of all death row inmates between 1968 and 1977. It started rising in 1977, reaching a plateau of 58 percent in early 1980s. During the same time period, the proportion of black prisoners under the sentence of death declined from 54 percent to 42 percent. Visual inspection suggests that these changes might be due to the reaction of the justice system to the Supreme Court’s scrutiny of racial disparities between blacks and whites. More precisely, the graph is consistent with the hypothesis that when capital punishment became legal following the 5-year period during which it was deemed unconstitutional by the Supreme Court, the judicial system reacted by prosecuting whites more stringently relative to blacks after 1976 to avoid further scrutiny. We lack sufficient pre-1968 data to perform a statistical analysis to investigate whether the jump in the proportion of white death row inmates and the accompanying decline in the rate of blacks can be attributed to random noise, but the time series depicted in Figure 2 is certainly suggestive of some structural change in the late 1970s. If that is indeed the case, it would suggest that the judicial system exerts substantial discretion as to the racial composition of the death row population.

In 1987, a black death row inmate in Georgia argued that black defendants convicted of killing white victims were more likely to be given the death sentence than other defendants (*McCleskey v. Kemp*, 481 U.S. 279 [1987]). The Court acknowledged that although there was a systemwide correlation between the victim’s race and the imposition of the death penalty, the defendant had not met the burden of proving that his individual sentence was based on the race of his victim. The Racial Justice Act proposed in the U.S. House of Representatives in 1994 was an attempt to allow prisoners to appeal their capital sentences by using statistical evidence of bias. Although it passed in the House, it was defeated in the Senate.

Although historically criticisms of capital punishment have focused on racial disparities, more recently a broader range of concerns about the application of the death penalty has emerged. Recently, a bill was introduced in the U.S. Congress to abolish the death penalty under federal law (Federal Death Penalty Abolition Act of 2001, sec. 191). In addition, legislators in at least 21 states have proposed legislation to modify their existing capital punishment laws, and Governor George

3. Whites and Hispanics are combined in this graph.

Ryan imposed a moratorium on executions in the state of Illinois in 2000 and issued a blanket commutation in January 2003 for all prisoners awaiting execution.

2. PREVIOUS RESEARCH AND THEORETICAL BACKGROUND

The overwhelming majority of a very extensive law literature on the subject of racial differences and a sizable literature in the social sciences point to the influence of the defendant's race as well as the race of the victim on the imposition of the death penalty (Zeisel 1981; Steiker and Steiker 1995; Paternoster 1984; Kleck 1981; Wolfgang and Riedel 1973; Pokorak 1998; Baldus et al. 1998; Gross and Mauro 1984). For example, it is found that after controlling for the criminal record of the defendant and the severity of the crime, blacks are more than four times as likely to receive the death sentence (Baldus et al. 1998). Similarly, research suggests that females face preferential treatment in sentencing in a capital murder case even after controlling for criminal history and excessive cruelty (Rapaport 1991).

An inherent problem in identifying discrimination in empirical analysis is the inability of the researcher to account for "unobservables." For example, in the case of the death penalty it may be difficult to account for all the aggravating and mitigating circumstances of a case. If these difficult-to-observe attributes of the case are correlated with race, they may explain the apparent racial differences. Even though researchers attempt to capture these difficult-to-observe idiosyncrasies of murder cases, the courts remain unconvinced that the race disparity is due to discrimination and not due to omitted unobservable case characteristics (Baldus et al. 1998).

Race and gender should not be related to the outcomes on death row in the absence of discrimination, with some exceptions. First, it can be argued that race may be correlated with wealth, and wealthier prisoners may have a better chance to reverse their conviction through the appeals process. In the absence of a measure of wealth, race may act as a proxy for it in statistical analysis. This suggests that minorities (the less wealthy group) are expected to have a higher probability of execution, given conviction. Although this point has merit, a counterargument can be made. If wealth is expected to influence the outcome of the appeal, it is meaningful to expect it to have even a larger impact on the outcome of the original trial. Put differently, variations in wealth would probably

have a smaller impact on the outcome of the appeal in comparison with their impact on the outcome of the original trial. Everyone in our analysis is convicted of a capital crime. Thus, most (but probably not all) of the impact of wealth on acquittal was filtered out before the individuals reached death row.

Second, the level of criminal culpability and blameworthiness may be correlated with race or gender. For example, it may be the case that the level of aggression or viciousness of the crime may be lower for female death row inmates. If that is the case, it may be easier for females to receive clemency. After analyzing the specifics of the capital cases pertaining to female prisoners on death row, we conclude that this is not a reasonable explanation.

The third channel through which race may impact the outcome on death row is discrimination before the prisoner reaches death row. If minorities are subject to discrimination during the murder trial, this suggests that some minorities reach death row with questionable guilty verdicts, which in turn suggests that white prisoners on death row could be thought of as “more guilty” on average. Thus, conditional on conviction, minorities under the sentence of death should have a lower probability of being executed.

Finally, discrimination based on the race of the victim is well documented. For example, it is found that a victim’s race, age, and criminal record determine the severity of the sentence, even in vehicular homicides where the victims are fairly random. Drivers who kill black victims get substantially shorter sentences (Glaeser and Sacerdote 2003). In capital sentencing, criminals with white victims receive more punitive treatment than criminals with minority victims (Baldus and Woodworth 2003; Kleck 1981). The extension of the discriminatory value-of-life treatment that is observed at the trial and sentencing stages implies that minority death row inmates would be more likely to receive clemency given that minority defendants’ cases involve mostly minority victims.⁴

Far less research has focused on the impact of political factors on the resolution of capital sentences. The political environment in a state may have an influence on the outcome of dying or living on death row. For example, a strong public sentiment against the death penalty may put pressure on a governor to commute sentences. Similarly, a governor’s

4. Between 1993 and 1998, 66 percent of white victims were murdered by white offenders and 76 percent of black victims were murdered by black offenders (Rennison 2001).

own ideology may impact his or her decision to grant a commutation to a death row inmate. William Pridemore finds that Democratic governors were more likely to execute during the period 1978–95 (Pridemore 2000). Jeffery Kubik and John Moran investigate the impact of the gubernatorial election cycle on the existence of executions in a state. They find that a state is more likely to conduct an execution in an election year (Kubik and Moran 2003).

We investigate whether characteristics of the governor, such as the governor's race, gender, and party affiliation, affect who dies and who lives among death row inmates. We also analyze whether the lack of political pressure on a governor has an influence on the governor's decision to grant a commutation. Specifically, we analyze whether being a lame-duck governor has an effect on the decision to let the inmate live or die.

3. EMPIRICAL SPECIFICATION

Conditional on being convicted, the severity of punishment, measured by the execution of prisoners under the sentence of death, can be modeled as

$$\Omega_i = f_1(X_i, E, G), \quad (1)$$

where Ω_i stands for the execution probability of the i th criminal, X_i represents the personal characteristics of the criminal, including race, gender, marital status, and criminal history, and E captures exogenous cultural and socioeconomic characteristics of the state where the criminal is in custody. These characteristics include, among others, the age, racial, ethnic, and religious composition of the state and the unemployment and urbanization rates.

The vector G represents the characteristics of the governor of the state and the political environment surrounding the governor. They include the race and gender of the governor, the party affiliation of the governor, and whether the governor is a lame duck at the time when he or she makes the decision to commute the inmate's sentence.

We estimate the model presented in equation (1) in two different ways. First, we create a data set that includes all prisoners under sentence of death between 1977 and 1997. Each prisoner contributes one observation for each year in which he or she is on death row and therefore at risk of execution. Possible outcomes each year are staying on death

row, removal by execution, removal by commutation, removal owing to capital sentence being declared unconstitutional by the state supreme court, removal owing to overturned sentence or overturned conviction by the appeals court, death by other causes, and removal for other reasons, such as removal to a mental hospital. Using this data set we estimate a multinomial logit model to investigate the determinants of moving from death row in any given year.

The second set of models uses the sample of prisoners who are either executed or commuted and estimates probit models to investigate the probability of the sentence being commuted when the final stage is reached on death row. The governor has the authority to grant clemency, and during this terminal event (execution or commutation) personal preferences and political motivation of the governor are expected to be most evident.⁵ Thus, in these models we analyze the probability of a prisoner's sentence being commuted given that all legal appeals have been exhausted.

Even though the data set does not contain wealth information for prisoners on death row, it contains information on their age at sentencing and education. To the extent that age and education are correlated with wealth, we control for some of the wealth effect in empirical analyses. When a prisoner under the death sentence exhausts all means of reversing the sentence, the two possible outcomes are execution and commutation. At this stage, wealth of the prisoner should have no impact on the outcome.

4. DATA

We use data from *Capital Punishment in the United States*, which were collected by the U.S. Department of Justice (U.S. Department of Justice 1973–97). This data set contains information on the 6,819 death sentences handed down between 1973 and 1997 in the United States. Because some prisoners receive multiple sentences, this represents 6,465 unique prisoners. We exclude 243 prisoners from the original sample whose status as of December 31, 1997, is not reported in the data. We also eliminate the 417 prisoners who were removed from death row prior to 1977. In order to examine the effects of political variables and

5. In some states, the Board of Pardons and Paroles' favorable recommendation is needed to commute the sentence. In case of clemency, the sentence is commuted into a prison term, typically life.

gubernatorial actions, we exclude 16 prisoners who are in federal prison or in prison in the District of Columbia. Thus, our data set consists of 5,779 inmates under sentence of death in the post-*Gregg* era between 1977 and 1997. The data set includes sociodemographic information at the time of incarceration. There is also information on the inmate's criminal history, and additional information is provided on those who were removed from death row by the end of 1997.

The number of prisoners on death row increased more than sixfold between 1977 and 1997. This increase is consistent with the rise in the general prison population. Over the course of these 2 decades, the number of prisoners under federal and state jurisdiction almost quadrupled to about 1.4 million inmates. The national violent crime rate increased from 476 violent crimes per 100,000 people in 1977 to about 750 in early 1990s. It then started exhibiting a continuous decline to about 525 per 100,000 people in 1999. Murders and nonnegligent manslaughters shared the same trend. The total number of murders and nonnegligent manslaughters was 19,120 in 1997. It increased to 24,700 in 1991 and then declined to 15,530 in 1999.

The empirical counterpart of equation (1) includes demographic characteristics of the prisoner (gender, race, ethnicity, age, education, and marital status) and his or her criminal and prison history (prior felony convictions, duration on death row, and number of times sentenced) as components of X_i . Specifically, we include dichotomous variables to classify each prisoner into one of three racial categories: white, black, and other race.⁶ Our data also include an indicator of Hispanic ethnicity. Because this variable is either reported as missing or not reported for about 10 percent of our sample, we create three ethnicity categories: Hispanic, Non-Hispanic, and Missing Ethnicity.⁷ Descriptive statistics for 5,779 prisoners on death row between 1977 and 1997 are reported in Table 1 for all inmates and separately by race and ethnicity.⁸ As column 1 of Table 1 demonstrates, very few of those under sentence of death (less than 2 percent) are female. Nearly 57 percent of death row inmates are white, about 42 percent are black, and less than 2 percent are other race. Just over 7 percent report being Hispanic, and nearly 10

6. The "other" category includes inmates reported to be American Indian or Alaskan native, Asian or Pacific Islander, and other race.

7. It should be noted that a prisoner will be simultaneously classified as Hispanic and one of the racial categories.

8. The 5,779 prisoners represent 6,126 death sentences because 329 prisoners were sentenced multiple times.

Table 1. Inmates on Death Row, 1977–97, by Race and Ethnicity

	Full Sample	White	Black	Other Race	Hispanic
Personal characteristics:					
Female (%)	1.77	2.22	1.21	.00	.97
White (%)	56.96	100	.00	.00	93.70
Black (%)	41.51	.00	100	.00	4.36
Other race (%)	1.52	.00	.00	100	1.94
Hispanic (%)	7.15	11.76	.75	9.09	100
Missing ethnicity (%)	9.79	7.78	12.58	10.23	.00
No high school (%)	14.88	15.37	14.05	19.32	21.31
Some high school (%)	32.25	29.04	36.81	28.41	37.53
High school graduate (%)	29.54	30.95	27.47	32.95	18.40
Attended college (%)	8.12	10.09	5.46	6.82	5.81
Missing education (%)	15.21	14.55	16.22	12.50	16.95
Married at sentencing (%)	25.16	26.88	22.72	27.27	26.63
Marital status missing (%)	8.48	7.69	9.59	7.95	6.54
Age at sentencing (years)	29.64 (8.76)	30.96 (9.29)	27.81 (7.63)	30.33 (8.52)	28.43 (7.67)
Criminal and penal history:					
Capital offense murder (%)	99.50	99.82	99.04	100	100
Prior felonies (%)	58.70	56.83	61.57	50.00	51.33
Prior record missing (%)	8.84	8.72	9.13	5.68	10.90
Duration on death row (years)	6.33 (4.80)	6.40 (4.80)	6.26 (4.81)	5.83 (4.64)	6.14 (4.65)
Sample size	5,779	3,292	2,399	88	413

Note. Standard deviations for continuous variables are in parentheses.

percent have missing ethnicity information. The remaining 83 percent are identified as non-Hispanic. Not surprisingly, education levels of death row inmates are low: just under half of the prisoners on death row have less than a high school education, and only 8 percent have attended college. At the time of initial sentencing, the average inmate was nearly 30 years of age and one-fourth were married. There are some differences between the racial and ethnic groups depicted in the last four columns of Table 1. Most notably, blacks are younger on average and have lower levels of education.

The lower section of Table 1 reports the criminal history and duration on death row. Nearly all of the inmates received their capital sentence for committing murder. In addition, the majority (59 percent) were convicted of at least one felony prior to the commission of their capital crime. Black prisoners are more likely to have a prior felony conviction.

Table 2. Final Disposition of Death Sentences for Inmates under Capital Sentence, 1977–97

	Full Sample	White	Black	Other Race	Hispanic
Still on death row (%)	56.97	56.29	57.80	60.23	67.07
Removed from death row (%):					
Sentence or conviction overturned	61.42	59.97	63.34	65.72	52.94
Sentence found unconstitutional	8.29	6.46	11.17	.00	5.15
Died on death row	6.40	7.99	3.85	14.29	9.56
Other removal	1.79	1.60	1.87	.00	1.47
Executed	17.34	18.42	15.91	14.29	19.12
Sentence commuted	4.87	5.56	3.85	5.71	11.76

Note. “Other removal” combines those who were removed for unknown reasons and those who were moved to a mental institution.

These differences in criminal history may legitimately result in differences in the resolution of the death penalty.

Finally, Table 1 identifies the length of stay on death row. The average inmate has spent over 6 years under a sentence of death. This figure includes those who are still on death row and those whose time on death row has ended owing to removal of their sentence, death in prison, or execution. For those still on death row at the end of our sample period, the duration is calculated as the number of calendar years between sentencing and the end of our sample period in 1997. For those who were removed from death row, the duration is calculated as the difference between the year they were removed and the year they were sentenced.

For those who faced the terminal event of execution or commutation, the duration on death row has been increasing over time since 1977. For example, the average duration was 6 years in 1983; it went up to 8 years in 1990, and it was 11 years in 1997. The same trend pertains to those who are executed. The average waiting time on death row for those who were ultimately executed was around 4 years in the early 1980s; it went up to about 11 years in 1997.

Table 2 summarizes the status of the 5,779 death row inmates as of December 31, 1997. The first row identifies the fraction of inmates who remained under a sentence of death as of that date. Approximately 57 percent of all prisoners remained on death row. There are some ethnic differences in this proportion. For instance, a larger proportion of Hispanics, 67 percent, were still on death row at the end of 1997, while only 56 percent of white prisoners remained on death row.

Table 2 also reports the outcome for prisoners who were removed from death row before the end of 1997. It is noteworthy that among those who have reached the final disposition of their death sentence, only about 17 percent have been executed. This proportion is even lower for blacks (16 percent) and those of other race (14 percent). After initial sentencing, legal representatives typically pursue a variety of appeals on behalf of their clients. About 61 percent of those who left death row did so because their sentence or conviction was overturned. The remainder of those leaving death row did so because they died in prison (6.4 percent), had their sentence commuted (4.9 percent), or had their sentence deemed unconstitutional (8.3 percent). A very small fraction (1.8 percent) had their sentence removed for other reasons.

Table 3 displays the characteristics of the governor and the state that are included in the analyses. Because the sample sizes are different between the two analyses we perform, the means of the variables are not identical in the samples. White Governor is a dichotomous variable equal to one if the governor is white and zero otherwise. For stacked-logit models where the unit of observation is every year that an individual prisoner is under sentence of death awaiting execution, the relevant political variables include a set of dichotomous variables that indicate the characteristics and political circumstances of the governor. They are Democrat, which is equal to one if the governor is a Democrat; Election Year, equal to one if the death row inmate is at risk of execution during an election year; Governor Not Reelected, another dummy variable equal to one if the incumbent governor was not reelected in November of that year and was a lame duck between the election date and December 31 of the same year; and Governor Leaves Office, another dummy variable equal to one in the next year to capture the lame-duck period between January 1 and the inauguration of the new governor.

In the model where the governor's decision to allow execution or commutation is analyzed, the unit of observation is no longer a full year. In this model, we are able to precisely link the date of the event (execution or commutation) to the exact political circumstances. More specifically, we include a dichotomous variable, Lame Duck, which is equal to one if the governor is a lame duck on the exact date when he or she made the execution or commutation decision. This includes the time period between a gubernatorial election in November and the inauguration of the new governor in January, where the incumbent governor either did not run for reelection or was defeated. A second dichotomous

Table 3. Descriptive Statistics of State and Governor Characteristics

Variable	Stacked Logit Analysis (<i>N</i> = 41,848)	Commutation- Execution Analysis (<i>N</i> = 555)
White Governor	.994 (.076)	.963 (.189)
Female Governor	.050 (.218)	.090 (.287)
Democrat	.509 (.501)	.542 (.499)
Election Year	.253 (.434)	
Governor Not Reelected	.137 (.344)	
Governor Leaves Office	.149 (.357)	
Lame Duck		.031 (.172)
Up to 6 Months before Election		.148 (.355)
Percent 15–19 Years Old	7.469 (.951)	7.605 (.830)
Percent 20–24 Years Old	7.796 (1.072)	7.826 (1.050)
Percent 25–34 Years Old	16.383 (1.489)	16.341 (1.472)
Percent 35–44 Years Old	14.524 (1.648)	14.790 (1.717)
Percent 45–54 Years Old	10.567 (1.094)	10.787 (1.268)
Percent 55 Years Old and Over	21.106 (3.407)	19.917 (3.124)
Percent Black	14.365 (8.515)	15.282 (7.873)
Percent Hispanic	10.307 (10.516)	12.549 (11.490)
Percent Other Race	2.827 (3.045)	2.222 (1.790)
Percent Catholic	14.331 (9.436)	13.041 (7.497)
Percent Southern Baptist	12.028 (9.851)	13.914 (7.479)
Percent Mormon	1.348 (4.553)	1.575 (6.208)
Percent Protestant	21.965 (9.272)	22.596 (9.155)
Urbanization	74.698 (12.901)	74.291 (10.421)
Unemployment Rate	6.463 (1.615)	6.291 (1.686)
Beer Consumption	24.125 (3.880)	25.188 (3.922)
Drinking Age 19	.099 (.298)	.096 (.296)
Drinking Age 20	.031 (.173)	.040 (.200)
Drinking Age 21	.811 (.392)	.799 (.403)

Note. Values presented are the means, with standard deviations in parentheses.

variable, Up to 6 Months before Election, is equal to one if the execution or commutation took place in the period 6 months prior to an election.⁹

State characteristics are the unemployment rate; the proportion of the state population in the following age groups: 15–19, 20–24, 25–34, 35–44, 45–54, and 55 and over; the proportion of the state in urban areas; the racial and ethnic composition of the state; per capita consumption of malt beverages (Beer Consumption); a set of dummy variables for the legal drinking age in the state; and the proportion of state population that is Catholic, Southern Baptist, Mormon, and Protestant.

9. As explained below, we also experimented with different time windows.

5. RESULTS

5.1. Probability of Leaving Death Row in Any Year

Possible outcomes for an inmate in any year are staying on death row, execution, dying on death row of other causes, commutation, the sentence or conviction being overturned, the sentence being found unconstitutional, and removals for other reasons (such as being moved to a mental hospital). We analyzed the transition probabilities between these stages. More specifically, we estimated a multinomial logit model, where the categories are staying on death row, being executed, being commuted, dying on death row of other causes, and sentence or conviction being overturned.¹⁰ The models include state and year fixed effects. Put differently, we control for unobserved differences between the states by including a set of state dummies, and a set of year dummies are included to capture the impact of time-varying unobservables. Standard errors are adjusted for clustering at the state level.

The results are presented in Table 4. The omitted category is staying on death row. Thus, the reported coefficients signify the impact of each variable on moving out of death row to the outcome listed in each column. For example, being a black inmate is associated with a reduced likelihood of being executed in any year as opposed to staying on death row. As expected, dying on death row of other causes is not influenced by any variable other than the age and marital status of the inmate. Females are more likely to have their sentences commuted or overturned in a given year than to stay on death row. Time spent on death row has a positive effect on the probability of transition to execution, to commutation, and to an overturned sentence or conviction. The number of spells (the number of times an inmate was removed and resentenced to death) on death row has a negative effect on the probability of transition to execution from death row, which may represent the weakness of the case against the inmate.

The presence of a gubernatorial election has no direct effect on the likelihood of leaving death row in any year. On the other hand, if the incumbent governor was not reelected to a new term in November and was a lame duck between the election date and December 31 of that year (Governor Not Elected = 1), this increases the likelihood of an

10. We deleted the 48 cases where the inmate is removed for other reasons, such as being moved to a mental hospital, as they did not reasonably belong to other categories and they were not substantial enough to constitute a separate category (.1 percent of the sample).

Table 4. Determinants of Leaving Death Row in Any Year, Multinomial Logit Model

	Execution (1)	Commutation (2)	Death by Other Causes (3)	Sentence or Conviction Overturned (4)
Black	-.193* (-2.49)	-.135 (-1.05)	-.334 (-1.58)	.046 (.93)
Hispanic	-.089 (-1.23)	.197+ (1.89)	.147 (.53)	-.007 (-.04)
Other Race	.289 (.72)	.569 (.86)	.681 (1.39)	.021 (.05)
Female	-.477 (-.84)	2.344** (6.02)	-.636 (-1.40)	.488* (2.41)
Married	.034 (.42)	.162 (1.47)	-.324** (-2.65)	.041 (.95)
Grade School	-.151 (-1.41)	.067 (.35)	.318 (1.47)	.086 (.70)
Some High School	.035 (.35)	.232+ (1.64)	.090 (.73)	.131 (1.32)
Attended College	.201 (1.26)	-.291 (-.77)	.244 (1.03)	-.027 (-.09)
Age at Sentencing	.026 (1.20)	-.104** (-2.10)	-.041 (-.99)	-.019 (-.90)
(Age at Sentencing) ²	.0003 (-.83)	.001+ (1.91)	.001** (2.96)	.0003 (-1.00)
Time on Death Row	.318** (3.16)	.300** (3.98)	.115 (1.62)	.218** (3.24)
(Time on Death Row) ²	-.008+ (-1.70)	-.013** (-3.29)	-.006 (-1.26)	-.013** (-3.25)
Number of Spells	-.703* (-2.460)	-.562 (-1.29)	-.309 (-.60)	-.185 (-1.13)
Prior Felonies	.140 (1.67)	.007 (.04)	.122 (.65)	-.119 (-.64)
White Governor	-.162 (-.82)	-1.64 (-.65)	.073 (.11)	1.471 (.15)
Female Governor	.334 (1.62)	-.511 (-.46)	-.108 (-.27)	.192 (.8)
Democrat	-.129 (-.81)	-.055 (-.2)	.201 (.89)	-.066 (-.12)
Election Year	.146 (1.08)	-.211 (-.35)	.411 (1.59)	.087 (.42)
Governor Not Reelected	.235 (1.38)	.581* (2.31)	-.226 (-.87)	-.468* (-1.97)

Governor Leaves Office	.118	(1.10)	.783	(1.58)	.225	(1.00)	-.067	(-.25)
Percent 15–19 Years Old	.417	(1.57)	-.341	(-.30)	.082	(.21)	-.102	(-.10)
Percent 20–24 Years Old	-.265	(-.63)	-.601	(-.60)	.155	(.34)	.407	(.53)
Percent 25–34 Years Old	-.236	(-.99)	.180	(.28)	.139	(.59)	-.128	(-.17)
Percent 35–44 Years Old	.743 ⁺	(1.95)	-.977	(-.64)	.018	(.03)	-.303	(-.16)
Percent 45–54 Years Old	.660	(1.81)	2.185**	(3.08)	.089	(.17)	.183	(.3)
Percent 55 Years Old and Over	-.266	(-1.26)	-.127	(-.28)	-.025	(-.04)	-.518	(-1.49)
Percent Black	-.013	(-.37)	.057	(.29)	.002	(.03)	.059	(1.03)
Percent Hispanic	-.004	(-.10)	-.020	(-.04)	.069	(.74)	-.012	(-.04)
Percent Other Race	-.149 ⁺	(-1.7)	-.533	(-.71)	-.034	(-.38)	-.009	(-.01)
Percent Catholic	.038	(.25)	.185	(.18)	.058	(.12)	.032	(.02)
Percent Southern Baptist	-.201	(-1.17)	.369	(.23)	-.061(-	.26)	-.05	(-.03)
Percent Mormon	.407*	(2.07)	.194	(.08)	.059	(.09)	.064	(.03)
Percent Protestant	.063	(1.39)	-.143**	(-2.86)	.019	(.37)	-.001	(-.03)
Urbanization	.585**	(3.21)	-.063	(-.07)	-.011	(-.04)	.124	(.09)
Unemployment Rate	.286**	(3.38)	.200	(.22)	.046	(.26)	-.105	(-.17)
Beer Consumption	.118	(1.25)	.361	(.43)	.084	(.75)	-.020	(-.03)
Drinking Age 19	.027	(.09)	.506	(.20)	-.950	(-1.81)	.587	(.25)
Drinking Age 20	.040	(.11)	-.327	(-.09)	-.530	(-.66)	.544	(.14)
Drinking Age 21	-.760	(-1.44)	.473	(.07)	-.954	(-1.23)	.762	(.13)

Note. Values presented are estimated coefficients. The baseline category is “to stay on death row.” The z-statistics (in parentheses) are calculated using robust standard errors, which are adjusted for clustering at the state level. The model includes state and year dummies and dichotomous variables for missing information on education, marital status, prior felonies, and Hispanic origin. $N = 41,848$. Log likelihood = $-11,126.85$.

⁺ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

inmate having his sentence commuted in that year. This may indicate that because being tough on crime is a standard position of a politician, it is problematic for a governor to commute a prisoner's sentence even if the case is compelling. The political pressure that is associated with a commutation is lifted or significantly reduced for a lame-duck governor, which makes such a governor more likely to commute. The results show that the same condition makes an overturned sentence or conviction less likely in that year. When we included state-specific time trends as additional regressors to the model, the coefficient of Governor Not Elected lost its statistical significance, but other results remained the same.

5.2. Execution versus Commutation

To investigate whether gubernatorial politics or the race and gender of an inmate have any influence on the probability of commutation versus execution, we focus on the sample of inmates who reached their final decision and had not previously been removed from death row through the appeals process or death in prison. This is the sample of inmates who are either executed or commuted. In this analysis, the dependent variable is equal to one if the sentence is commuted and zero if the prisoner is executed. If there is no capricious application of the commutation process, the characteristics of the inmate (other than the circumstances of the case and criminal history of the inmate) should not influence the probability of clemency. We include controls for personal characteristics of governors (race, gender, and political party affiliation) and indicators of the gubernatorial election process. In this specification, the event (execution or commutation) occurs on a particular date (rather than the entire year at risk, as in the previous model). Because we know the exact date of the event, we are able to link it precisely to the timing of elections. In particular, we include a variable that indicates whether the execution or commutation decision of a particular inmate took place during the 6 months prior to an election.¹¹ If the governor wants to send a signal to voters as to the degree of his or her toughness on crime, then one would expect that it would be less likely for a governor to commute sentences before the election.¹² In addition, we construct a variable that indicates whether the governor is acting as a lame duck. This dichoto-

11. We tried another specification that defines an event occurring within the 10 months prior to the election, and the results were unchanged.

12. It has been found that the annual probability that a state will conduct at least one execution is higher in election years (Kubik and Moran 2003).

mous variable is equal to one if the execution or commutation decision took place during a month in which a governor was not reelected in November but continued to serve until January of the next year.

Marginal probabilities are reported along with *z*-statistics in Table 5 (based on robust standard errors that are adjusted for clustering at the state level). Specifications include state and year dummies. The results reported in column 1 demonstrate significant effects of governor's race and party affiliation on the probability of commutation. To test the hypothesis that governors are more lenient toward death row inmates of their own race, we interacted the variable White Governor with a dummy variable that takes the value of one if the inmate is minority. The results are reported in column 2 of Table 5. In column 3, we add another interaction variable where Democrat is multiplied by Minority Inmate to investigate whether Democratic governors are more or less lenient toward minority death row inmates in granting clemency.

The results are similar between columns 2 and 3. Thus, we focus on column 3, which is the most detailed specification. Death row inmates with only a grade school education are more likely to have their sentences commuted compared with inmates with a high school diploma (the omitted category). On the other hand, an inmate with some college education is less likely to receive clemency. As the age of the prisoner at the time of sentencing goes up, the likelihood of having the sentence commuted goes down. The effect is nonlinear, and the impact of age on the probability of clemency becomes positive after the age of 44. The number of times the inmate was removed and resentenced to death (Number of Spells) has a negative impact on the probability of commutation, which suggests that having the sentence reaffirmed increases the chance of execution once appeals have been exhausted. Surprisingly, controlling for everything else, the existence of prior felonies has no significant impact. In models where prior felonies were replaced with the number of crimes committed by the inmate in conjunction with murder, the results did not change. Similarly, adding the number of crimes as an additional variable did not alter the results.

The probability of clemency is higher for black prisoners, prisoners of other race, and Hispanic prisoners than for white prisoners. Table 5 also reveals that characteristics of the governor impact the probability of living and dying on death row. Column 1 shows that if the governor is white, commutation is about 61 percentage points less likely. Similarly, if the governor is a Democrat, the death row inmate who faces an execution or commutation decision is 21 percentage points more likely

Table 5. Determinants of Commutation

	(1)	(2)	(3)
Black	.063 (1.40)	.523*** (3.52)	.331* (2.34)
Hispanic	.024 (.76)	.665*** (3.10)	.389+ (1.85)
Other Race	.721* (2.25)	.93** (3.28)	.922** (2.84)
Female	.923** (3.59)	.929** (3.63)	.929** (3.75)
Married	.025 (.94)	.021 (.87)	.020 (.81)
Grade School	.194** (3.38)	.175** (3.29)	.186** (3.67)
Some High School	.072 (1.51)	.061 (1.38)	.069* (1.65)
Attended College	-.080** (-4.03)	-.078** (-4.58)	-.080** (-3.68)
Age at Sentencing	-.043** (-2.81)	-.042** (-2.70)	-.044** (-2.71)
(Age at Sentencing) ²	.001** (2.88)	.001** (2.79)	.001** (2.81)
Time on Death Row	-.038* (-1.96)	-.036* (-1.97)	-.041* (-2.14)
(Time on Death Row) ²	.001 (1.01)	.001 (1.04)	.001 (1.16)
Number of Spells	-.184** (-3.00)	-.174** (-3.01)	-.184** (-2.86)
Prior Felonies	-.016 (-.33)	-.017 (-.34)	-.023 (-.51)
White Governor	-.61* (-2.28)	-.065 (-.35)	-.083 (-.46)
White Governor × Minority Inmate	. . .	-.29** (-3.17)	-.245** (-2.82)
Female Governor	.031 (.20)	.039 (.25)	-.01 (-.08)
Democrat	.205* (2.53)	.195* (2.48)	.131 (1.56)
Democrat × Minority Inmate173* (2.36)
Up to 6 Months before Election	.025 (.51)	.017 (.40)	.014 (.33)
Lame Duck	.799** (2.67)	.811* (2.54)	.822** (2.57)
Percent 15–19 Years Old	.295 (1.11)	.320 (1.22)	.337 (1.31)
Percent 20–24 Years Old	.776** (3.50)	.799** (3.95)	.733** (3.59)
Percent 25–34 Years Old	.711** (5.14)	.723** (5.17)	.720** (4.72)
Percent 35–44 Years Old	-.773** (-3.83)	-.756** (-3.84)	-.768** (-3.71)
Percent 45–54 Years Old	.389+ (1.67)	.392+ (1.77)	.370 (1.63)
Percent 55 Years Old and Over	.559** (3.44)	.547** (3.48)	.503** (3.08)
Percent Black	.003 (.24)	.003 (.21)	.003 (.25)
Percent Hispanic	-.012 (-1.28)	-.014 (-1.44)	-.010 (-1.18)
Percent Other Race	-.196** (-3.18)	-.206** (-3.22)	-.202** (-3.14)
Percent Catholic	-.115* (-2.28)	-.116* (-2.37)	-.136** (-2.60)
Percent Southern Baptist	-.151* (-2.48)	-.158** (-2.66)	-.148* (-2.40)
Percent Mormon	.018 (.14)	-.0003 (.002)	.036 (.26)
Percent Protestant	.002 (.11)	.004 (.24)	.005 (.28)
Urbanization	.072 (1.1)	.080 (1.30)	.084 (1.34)
Unemployment Rate	-.071** (-2.66)	-.068** (-2.65)	-.071** (-2.69)
Beer Consumption	-.248** (-5.27)	-.248** (-5.47)	-.230** (-5.06)
Drinking Age 19	-.022 (-.17)	.012 (.09)	-.038 (-.35)
Drinking Age 20	.006 (-.08)	.014 (.20)	-.019 (-.28)
Drinking Age 21	-.68** (-2.57)	-.748** (-2.85)	-.771** (-2.94)
Log likelihood	-90.01	-89.09	-87.84

Note. Values presented are marginal effects, with z-statistics in parentheses. The z-statistics are calculated using robust standard errors, which are adjusted for clustering at the state level. Regressions include dummy variables for state and year effects and for missing information on education, marital status, prior felonies, and Hispanic origin. $N = 511$.

+ Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

to live.¹³ These effects are driven by the interaction of the race of the inmate. In column 3 we observe that the interaction variable White Governor \times Minority Inmate is negative and statistically significant, which indicates that the race matching between the governor and the inmate matters. More specifically, white governors are 25 percentage points less likely to commute minority prisoners than white prisoners. The variable Democrat \times Minority Inmate is positive and statistically significant, which indicates that Democratic governors are 17 percentage points more likely to commute minority prisoners than white prisoners.

As discussed earlier, one cannot rule out the possibility that preferential treatment of minorities that emerges during the execution or commutation stage is a remedy for discrimination or irregularities during the arrest, trial, conviction, and sentencing phases. The race effect can also be attributed to governors' differential treatment of victims' value of life. Put another way, given that white death row inmates are more likely to have perpetrated crimes against white victims and minority inmates were more likely to victimize other minorities, discrimination based on the race of the victim would suggest a harsher treatment of white inmates or higher commutation probabilities of minority inmates. Because the data set does not contain information about the race of the victim, we cannot test the validity of this particular hypothesis, although it should be mentioned that the lower probability of commutation of minority inmates by white governors underscores the complexity of the phenomenon.

All else the same, female death row inmates are more likely to have their sentence commuted than are males. As is the case for minorities, it can similarly be argued that the gender effect that emerges from this analysis is not due to differential treatment but rather to specific characteristics of these cases. For example, murder cases against convicted females may be easier to forgive in comparison with other cases. If these cases are more likely to be crimes of passion and murders due to a "battered wife syndrome" rather than vicious murders, commutation would be more likely. In that case, the significant female variable in the regression does not represent discrimination but merely reflects the "weaker" characteristics of the cases involving females. To explore this possibility, we reviewed details of the cases for females who received clemency. Among the eight women who had their sentences commuted prior to 1997, the majority were convicted of violent murders, often in

13. The impact of a Democratic governor is also reported in Pridemore (2000).

combination with other felonies. In only two of the cases were issues of past abuse or “battered wife syndrome” raised. Therefore, there is no strong evidence to substantiate the claim that females were more deserving of clemency on the basis of the merits of their cases.¹⁴

If the governor is a lame duck, he or she is 82 percentage points more likely to commute the sentence of a death row inmate. The fact that an inmate faced the execution or commutation decision during the 6-month period before a gubernatorial election had no impact on his or her probability of execution. It is conceivable that the inmates who come up for an execution or commutation decision during the 6-month window before the election are less likely to live if the murder rate in the state is high. In other words, the incumbent governor may want to send a signal to voters that he or she is tough on crime before the election if the murder rate in the state is high. However, interacting the Up to 6 Months before Election variable with the murder rate in the state did not provide any significant impact. Thus, we find no evidence that there is a direct impact of elections on the probability of commutation of the inmate. We could not test whether lame-duck governors are more lenient toward minority inmates because there is not enough variation to identify the effect. Adding linear time trends to the models does not alter the results.

These results indicate that who lives and who dies on death row depends on the personal (not criminal) characteristics of the inmate, the personal characteristics of the governor, and the political environment. More specifically, imagine two death row inmates who are in custody in the same state, who have the same criminal background (as measured by the presence of prior felonies), who are the same age, and who have the same education and marital status. They face differential probabilities of dying if their race and gender are different. Furthermore, their likelihood of dying depends on the race matching between them and the governor who determines their fate, the party affiliation of the governor, and whether the governor is a lame duck.

6. SUMMARY AND DISCUSSION

The existence of the death penalty and the alleged discrimination against minorities in the application of the death penalty remains a contentious

14. In the past few years there have been some highly publicized executions of female inmates. These executions represent a substantial increase over the low execution rates for women during the 20-year period that we study. This recent increase in female executions may signal a change in the preferential treatment we find afforded women on death row.

issue. The fact that minorities are overrepresented in the population of prisoners under the sentence of death in comparison with their share in the U.S. population does not verify the existence of discrimination against them in the judicial system. Overrepresentation of minorities may occur because the rate of criminal activity may be higher among minorities and/or minorities may not have access to high-quality representation and defense because of wealth constraints. Discrimination exists if race is a determinant of receiving the death penalty after controlling for the characteristics of the case, such as the severity of the crime, criminal history of the defendant, and quality of the representation. Even though some research has demonstrated racial disparities in the probability of receiving the death penalty after controlling for case characteristics, the courts remain unconvinced because a host of difficult-to-observe factors may be driving the apparent disparity. For example, it may be the case that the judicial system may be color-blind and unbiased with the exception of the jury. If the jurors act inequitably in an otherwise fair trial environment, racial disparities would emerge. Alternatively, prosecutors' racial biases may contaminate the system by their choosing whether to seek the death penalty, influencing the outcome of guilty/not guilty plea process, and deliberately influencing the racial, ethnic, and gender composition of the jury, among other factors. It is difficult to disentangle these factors and isolate the impact of race of the defendant on the likelihood of receiving the death penalty.

To circumvent the potential bias caused by such unobservable factors, we adopt a different approach in this paper. We analyze the entire population of prisoners under a sentence of death in the United States between 1977 and 1997 and investigate the probability of transition from death row to various possible outcomes (execution, death by other causes, commutation, and overturned sentence or conviction). We control for age, education, marital status, and previous criminal record of the prisoners and for a number of characteristics of the state where the death row inmate is in custody. We also investigate whether the race, gender, and affiliation of the governor and whether the governor is a lame duck (who was not reelected—whether he or she ran or not—and served out the full term until the newly elected governor took office in January) have any influence.

We find that the likelihood of transition to execution is lower for black inmates in any year. The transition probabilities to commutation and overturned sentence/conviction are higher for female inmates. Gubernatorial election years have no impact on the transition probabilities

for any outcome, but if the governor was a lame duck during part of that year, this increases the probability of transition to a commutation and decreases the likelihood of an overturned sentence or conviction.

When we investigate the final outcome of execution versus commutation, very striking results emerge. Inmates with only a grade school diploma are more likely to receive clemency, and those with some college attendance are less likely to have their sentence commuted. Until (after) the age of 44, being an older inmate reduces (increases) the probability of commutation.

There are important race and ethnicity differences. Blacks, other minorities, and Hispanics are less likely to be executed than are white inmates. This may indicate pure preferential treatment of blacks and other minorities, or it may be an indication of reversal of discrimination that may have taken place earlier in the process. Minorities on death row would have weaker cases against them if they were subject to discrimination in earlier stages. In this case, their probability of execution would be lower than that of their white counterparts, and favorable treatment on death row may be to rectify irregularities that may have taken place at arrest, trial, conviction, or sentencing phases.

The higher probability of commutation of minority inmates may also indicate a continuation of discrimination based on the race of the victim. Given that minority inmates' cases involve mostly minority victims, if the governors treat minority victims as less valuable, this would result in more lenient treatment of minorities during the execution/commutation decision. On the other hand, we find evidence that white governors are less likely to grant commutation to minority death row inmates.

The political environment is also an important factor affecting the life and death decision. We find that if an inmate's stay on death row ends at a point in time where the governor is a lame duck, the probability of commutation increases significantly over that of an otherwise similar inmate whose decision is made by a governor who is not a lame duck. Similarly, if the governor is a Democrat, he or she is more likely to spare a minority inmate's life.

Female death row inmates are also less likely to be executed. This result cannot be justified as an act to rectify previous discrimination because there is no evidence in prior research that females are discriminated against during trial, and murders committed by female death row inmates seem no less vicious than those committed by males during the time period covered by our analysis.

These results show that who lives and who dies on death row depends

on factors unrelated to the characteristics of the case. Instead, the race and gender of the inmate, the race and political party affiliation of the governor, and whether the governor is a lame duck determine who lives and who dies on death row.

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