

Supplementary/Online Appendix for: The Public's Increasing Punitiveness and Its Influence on Mass Incarceration in the United States

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Appendix 1: Question Wording

The question wording for the items used in the tough on crime opinion index are listed below. These questions were obtained from the General Social Surveys, the American National Elections Studies, and the iPOLL Databank provided by the Roper Center for Public Opinion Research. Questions are listed in the order they appear in Table A-1.

1. Favor Death Penalty (Gallup): Are you in favor of the death penalty for persons (a person) convicted of murder?
2. Favor Death Penalty (GSS): Do you favor or oppose the death penalty for persons convicted of murder?
3. Prefer Death Penalty (Gallup): If you could choose between the following two approaches, which do you think is the better penalty for murder—the death penalty or life imprisonment, with absolutely no possibility of parole?
4. Favor Death Penalty (ABC): Turning to another subject, the death penalty: are you in favor of the death penalty for persons convicted of murder?
5. Death Penalty Right Amount (Gallup): In your opinion, is the death penalty imposed – too often, about the right amount, or not often enough?
6. Death Penalty Fair (Gallup): Generally speaking, do you believe the death penalty is applied fairly or unfairly in this country today?
7. Believe in Death Penalty (Harris): Do you believe in capital punishment (death penalty) or are you opposed to it?
8. Death Penalty Deters (Gallup): Do you feel that the death penalty acts as a deterrent to the commitment of murder—that it lowers the murder rate, or not?
9. Prefer Death Penalty (ABC): Which punishment do you prefer for people convicted of murder: the death penalty or life in prison with no chance of parole?
10. Favor Death Penalty (Time): Do you favor or oppose the death penalty for individuals convicted of serious crimes such as murder?
11. Death Penalty Deters (Harris): Suppose it could be proved to your satisfaction that the death penalty was not more effective than long prison sentences in keeping other people from committing crimes such as murder, would you be in favor of the death penalty or would you be opposed to it?
12. Courts Not Harsh Enough (GSS): In general, do you think the courts in this area deal too harshly or not harshly enough with criminals?
13. Use Force (ANES): There is much discussion about the best way to deal with the problem of urban unrest and rioting. Some say it is more important to use all available force to maintain law and order – no matter what results. Others say it is more important to correct

the problems of poverty and unemployment that give rise to the disturbances. Where would you place yourself on this scale, or haven't you thought much about this?

14. Courts Not Harsh Enough (Gallup): In general, do you think the courts in this area deal too harshly or not harshly enough with criminals?

15. Stop Criminal Activity (ANES): Some people are primarily concerned with doing everything possible to protect the legal rights of those accused of committing crimes. Others feel that it is more important to stop criminal activity even at the risk of reducing the rights of the accused. Where would you place yourself on this scale, or haven't you thought much about this?

16. More Prisons, Police, and Judges (Gallup): Which of the following approaches to lowering the crime rate in the United States comes closer to your own view—do you think more money and effort should go to attacking the social and economic problems that lead to crime through better education and job training or more money and effort should go to deterring crime by improving law enforcement with more prisons, police, and judges?

17. Courts too Lenient (Harris): Generally, do you feel the courts have been too lenient (too easy) in dealing with criminals, too severe, or do you feel they have been treated fairly?

18. More Important to Punish (Gallup): In dealing with men who are in prison, do you think is more important to punish them for their crimes, or more important to get them started 'on the right road'?

19. Prisons Should Punish (Harris): There are different opinions about the main purpose of prisons. Which one of the statements on this card comes closest to expressing your point of view on prisons? Punish criminals and keep them away from the rest of society or keep criminals separate from the rest of society until they can be rehabilitated and returned to society?

20. Harsher Sentences (Harris): (Frequently on any controversial issue there is no clear cut side that people take, and also frequently solutions on controversial issues are worked out by compromise. But I'm going to name some different things, and for each one would you tell me whether on balance you would be more in favor of it, or more opposed to it?)...Harsher prison sentences for those convicted of crimes

21. Spend More Halting Crime (GSS): We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount. First (Halting the rising crime rate)... are we spending too much, too little, or about the right amount on (Halting the rising crime rate)?

22. Spend More on Law Enforcement (GSS): (Law enforcement)... are we spending too much, too little, or about the right amount on (Law enforcement)?

- 23.Spend More (Roper): (We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount.)...Halting the rising crime rate
- 24.Spend More (ANES): If you had a say in making up the federal budget this year, (1986 and later: of the following) programs would you like to see for which spending increased and for which would you like to see spending decreased: Should federal spending on [dealing with crime] be increased, decreased or kept about the same?
- 25.Spend More on Police (GSS): Listed below are various areas of government spending. Please indicate whether you would like to see more or less government spending in each area. Remember that if you say "much more," it might require a tax increase to pay for it. The police and law enforcement
- 26.Police Not Honest (Gallup): How would you rate the honesty and ethical standards of people in this field—very high, high, average, low, or very low? Policemen
- 27.Lack Confidence in Police (Gallup): (Now I am going to read you a list of institutions in American society. Please tell me how much confidence you, yourself, have in each one—a great deal, quite a lot, some, or very little?) the police
- 28.Lack Confidence in Police Protection (Gallup): How much confidence do you have in the ability of the police to protect you from violent crime—a great deal, quite a lot, not very much, or none at all?
- 29.Lack Respect for Police (Gallup): How much respect do you have for the police in your area—a great deal, some, or hardly any?
- 30.Lack Confidence in Legal System (Roper): (Now, taking some specific aspects of our life, we'd like to know how confident you feel about them.) Do you feel very confident, only fairly confident, or not at all confident...We can on the whole depend on the justice of our legal system?
- 31.Police Don't Adequately Protect (Time/CNN): Do you feel adequately protected by the police from being a victim of crime?
- 32.Lack Confidence in Legal System (GSS): How much confidence do you have in...courts and the legal system? ...Complete confidence, a great deal of confidence, some confidence, very little confidence, no confidence at all
- 33.Lack Confidence in Courts (Gallup): How much confidence do you have in the ability of the courts to convict and properly sentence criminals?

Appendix 2: Validation of the Tough on Crime Opinion Measure

The text explained why survey questions about the death penalty, punishing criminals, support for spending on crime, and lack of confidence in the police or justice system should serve as valid indicators of the public's over time punitiveness. Consistent with this expectation, Figure 1 in the text showed that during the period of analysis, these questions track together almost in unison. In this section, I conduct several additional analyses to further validate the tough on crime opinion measure.

Over Time Validation

First, I examine the correlation between the tough on crime opinion measure and each of the 33 question series used to generate the measure. This is the standard approach used to evaluate time series opinion indices (Enns & Kellstedt 2008, Kellstedt 2003, Stimson 1991). Table A-1 reports these correlations. A positive correlation indicates the individual series moves in common with, and thus contributes to, the overall series. Correlations near zero or negative correlations suggest that the individual series do not share common movement with the overall index. The table also reports the range of years when the question was asked, the number of times the question was asked, and the number of different years the question was asked (if the same question was asked more than once in a single year, these last two values will be different). The questions in the table are organized into the four categories described in the text: support for the death penalty, support for harsher punishment, support for more spending on the judicial system, and lack of confidence in the judicial system. Across all question types, we see a pattern of strong positive correlations with the overall index, which suggests that these questions reflect preferences for being tough on crime.

Table A-1: Correlations of Each Question Series and the Estimated Tough on Crime Opinion Measure

Question	Correlation	Date Range	Times Asked	Years Asked
<i>Death Penalty Questions</i>				
Favor Death Penalty (Gallup)	0.951	1953-2012	49	34
Favor Death Penalty (GSS)	0.941	1974-2010	26	26
Prefer Death Penalty (Gallup)	0.806	1985-2010	19	16
Favor Death Penalty (ABC)	0.951	1981-2007	14	11
Death Penalty Right Amount (Gallup)	0.782	2002-2011	10	10
Death Penalty Fair (Gallup)	0.313	2000-2011	10	9
Believe in Death Penalty (Harris)	0.328	1973-2003	8	8
Death Penalty Deters (Gallup)	0.923	1985-2011	6	6
Prefer Death Penalty (ABC)	0.580	2000-2006	6	6
Favor Death Penalty (Time)	0.971	1989-2003	6	6
Death Penalty Deters (Harris)	0.983	1973-1983	3	3
<i>Harsher Punishment Questions</i>				
Courts Not Harsh Enough (GSS)	0.739	1972-2010	28	28
Use Force (ANES)	-0.535	1968-1992	6	6
Courts Not Harsh Enough (Gallup)	0.826	1965-1993	7	6
Stop Criminal Activity (ANES)	0.210	1970-1978	5	5
Prisons, Police, & Judges (Gallup)	0.616	1989-2000	7	5
Courts too Lenient (Harris)	0.946	1970-1982	4	4
More Important to Punish (Gallup)	0.898	1955-1991	4	4
Prisons Should Punish (Harris)	0.952	1971-1980	3	3
Harsher Sentences (Harris)	0.491	1978-1984	3	3
<i>Spending on Judicial System Questions</i>				
Spend More Halting Crime (GSS)	0.621	1973-2010	27	27
Spend More on Law Enforcement (GSS)	0.899	1984-2010	18	18
Spend More (Roper)	0.473	1984-2010	15	15
Spend More (ANES)	-0.133	1984-2008	8	8
Spend More on Police (GSS)	0.944	1985-2006	4	4
<i>Lack of Confidence in Judicial System Questions</i>				
Police Not Honest (Gallup)	0.761	1977-2009	25	24
Lack Confidence in Police (Gallup)	-0.101	1993-2012	20	20
Lack Confidence in Police Protection (Gallup)	0.697	1981-2005	14	14
Lack Respect for Police (Gallup)	0.765	1965-2005	8	7
Lack Confidence in Legal System (Roper)	0.766	1973-1983	7	7
Police Don't Adequately Protect (Time/CNN)	0.874	1989-1997	5	4
Lack Confidence in Legal System (GSS)	0.336	1991-2008	3	3
Lack Confidence in Courts (Gallup)	0.887	1985-1990	3	3
Percent of Variance Explained	56.04			

Individual–Level Validation

The inspection of inter-item correlations in Table A-1 reinforces expectations. However, I also use cross-sectional data to further assess the claim that the various question indicators measure punitive attitudes. Specifically, I use Confirmatory Factor Analysis (CFA) to test the hypothesis that, at the individual level, responses to these survey questions correspond with a common underlying construct. At a minimum, we should expect that factor loadings are significant and in the expected direction. We should also expect the model to fit the data well and we must consider the magnitude of the factor loadings. However, given the current goal of identifying questions to construct an *aggregate over time* measure of public opinion, it is not immediately clear what constitutes a strong *individual–level* relationship. To establish expectations for the magnitude of factor loadings, I begin with a CFA of the indicators of Stimson’s (1999) policy mood. Policy mood is perhaps the most important over time measure of public opinion and its component indicators are well understood. Questions about support for spending on various policy areas form the core of Stimson’s policy mood (Stimson 1999, 71). In fact, even though policy mood incorporates additional survey questions, policy mood has been successfully replicated using just these spending items (Ura & Ellis 2008, Stimson 2002). If we know how responses to these spending items relate at the individual level, we will have an important guideline for the indicators of punitiveness.

Table A-2 reports the standardized CFA factor loadings for the 11 spending questions that Ura & Ellis (2008) used to replicate policy mood. These questions come from the General Social Survey (GSS) cumulative data file and ask whether respondents prefer more, less, or about the same spending on each policy area. The data extend from 1973 to 2010. Responses for “the military, armaments, and defense” have been recoded to match the other items (i.e., less spending on the military is expected to correspond with support for more spending on the other areas).¹ Table A-2 presents two sets of estimates. The left two columns reflect CFA estimates where residuals are not allowed to correlate. The right two columns reflect

¹The question reads, “We are faced with many problems in this country, none of which can be solved easily or inexpensively. I’m going to name some of these problems, and for each one I’d like you to tell me whether you think we’re spending too much money on it, too little money, or about the right amount. First (read item)... are we spending too much, too little, or about the right amount on (item)?”

estimates where residuals are allowed to correlate to improve model fit.² The discussion of results refers to estimates from the right columns (correlated residuals), but the similarities across columns indicate that the results are comparable regardless of the modeling choice. Notice that the factor loading for space exploration is negative and the loading for foreign aid is quite low (0.06). The next lowest value is military, armaments, and defense (0.21). The highest value (0.57) corresponds with solving the problems of big cities. Excluding space exploration, the mean value is 0.38. In the context of identifying survey questions to construct aggregate over time measures of public opinion, these values suggest that weak (but potentially relevant) factor loadings would be near 0.06, a modest factor loading would be 0.38, and a strong factor loading would be 0.50 or above.

Table A-2: Confirmatory Factor Analysis of GSS Spending Questions in Policy Mood

	<i>Uncorrelated</i>		<i>Correlated</i>	
	Residuals		Residuals	
Space exploration program	-0.10*	(0.01)	-0.14*	(0.01)
Foreign aid	0.15*	(0.01)	0.06*	(0.01)
The military, armaments, and defense	0.16*	(0.01)	0.21*	(0.01)
Halting the rising crime rate	0.37*	(0.01)	0.31*	(0.01)
Welfare	0.39*	(0.01)	0.32*	(0.01)
Dealing with drug addiction	0.43*	(0.01)	0.39*	(0.01)
Improving and protecting the environment	0.43*	(0.01)	0.43*	(0.01)
Improving and protecting the nation's health	0.48*	(0.01)	0.47*	(0.01)
Improving the nation's education system	0.46*	(0.01)	0.53*	(0.01)
Improving the conditions of Blacks	0.57*	(0.01)	0.53*	(0.01)
Solving the problems of the big cities	0.54*	(0.01)	0.57*	(0.01)
N	22,562		22,562	
Root mean square of approximation	0.077		0.029	
Comparative fit index	0.761		0.978	
Tucker-Lewis index	0.701		0.956	

Note: Cells report standardized factor loadings based on Confirmatory Factor Analysis with standard errors in parentheses; *=p<.01. Military, armaments, and defense has been recoded so support for less military spending corresponds with support for more spending in the other categories.

²Residuals were allowed to covary if a test of modification indices (based on Lagrange multiplier tests for the statistical significance of omitted paths) showed significant evidence of improved model fit.

The first data I analyze come from a 1967 poll conducted by Louis Harris and Associates. I identify four survey questions that relate to the categories of interest: lack of confidence in the judicial system, belief that crime is increasing, support for spending on law enforcement, and support for more punishment.³ Factor loadings are all significant and in the expected direction. Additionally, the model fits the data quite well. In fact, given the impressive model fit with uncorrelated residuals, this is the only model estimated. Finally, the magnitudes are reasonably sized, ranging from 0.18 to 0.43. These results support the use of these questions as indicators of support for being tough on crime.

Table A-3: Confirmatory Factor Analysis of Indicators of Support for Being Tough on Crime, *Harris* Survey, 1967

Lack confidence in judges	0.18*	(0.07)
Courts too lenient	0.43*	(0.10)
Increase spending on law enforcement	0.29*	(0.07)
Crime is increasing	0.29*	(0.08)
N		837
Root mean square of approximation		0.022
Comparative fit index		0.977
Tucker-Lewis index		0.930

Note: Cells report standardized factor loadings based on Confirmatory Factor Analysis (uncorrelated residuals).

*= $p < .01$, standard errors in parentheses.

A 1995 survey from the *Los Angeles Times* offers a second opportunity to evaluate the individual-level relationship between relevant survey questions. The CFA includes seven questions that relate to the four types of questions in the punitive index.⁴ Although the

³The specific question wording is as follows: 1.) Now thinking specifically of the law enforcement and criminal correction and rehabilitation fields, how much confident do you have in judges, a lot, some but not a lot, only a little, or hardly any confidence? 2.) Generally do you feel the courts have been too lenient (too easy) in dealing with criminals, too severe, or do you feel they have been generally fair? 3.) The federal government provides money for many different programs. I'd like you to look at this list of different programs and tell me, if the government were going to increase spending, which area you would most like to see more money spent in? And what would be your second choice? And your third choice? And in which area would you least like to see more money spent? (coded 4 if Law Enforcement was first choice, 3 if second choice, 2 if third choice, 1 if not selected, and 0 if indicated least). 4.) In the past year do you feel the crime rate in your area has been increasing, decreasing, or has remained about the same as it was before?

⁴The specific question wording is as follows: 1.) To lower the crime rate in the United States some people think additional money and effort should go to attacking social and economic problems that lead to crime,

factor loading for lack of confidence in the police (0.10) is near the low end of the mood indicator factor loadings, the overall pattern of results is again consistent with expectations.

Table A-4: Confirmatory Factor Analysis of Indicators of Support for Being Tough on Crime, *Los Angeles Times* Survey, 1995

	<i>Uncorrelated</i>		<i>Correlated</i>	
	Residuals		Residuals	
More prisons, police, and judges	0.52*	(0.03)	0.49*	(0.06)
Punish criminals	0.63*	(0.03)	0.65*	(0.07)
Lack confidence in police	0.10*	(0.04)	0.10*	(0.04)
Support crime bill	0.25*	(0.04)	0.16*	(0.04)
Support three strikes law	0.24*	(0.04)	0.20*	(0.04)
Can't rehab violent criminals	0.50*	(0.03)	0.50*	(0.07)
Justice system not sound	0.15*	(0.04)	0.16*	(0.04)
N	1,323		1,323	
Root mean square of approximation	0.094		0.036	
Comparative fit index	0.729		0.980	
Tucker-Lewis index	0.594		0.939	

Note: Cells report standardized factor loadings based on Confirmatory Factor Analysis. *= $p < .01$, standard errors in parentheses.

The GSS offers a third look at individual-level responses. Four questions of interest were asked in 1991, 1998 and 2008.⁵ As with the previous analyses, the factor loadings are all significant, in the expected direction, and the model fits the data quite well.⁶ Lack of

through better education and job training. Others feel more money and effort should go to deterring crime by improving law enforcement with more prisons, police, and judges, Which comes closer to your view? 2.) Where does government need to make a greater effort these days: in trying to rehabilitate criminals who commit violent crimes or in trying to punish and put away criminals who commit violent crimes? 3.) In the community where you now live, how much confidence do you have that the police will protect you from a crime: a great deal, a good amount, not too much, or none at all? 4.) As you may know, the U.S. Senate has passed a comprehensive crime bill that would spend 9 billion dollars for additional local police, 6 billion dollars for building new prisons and boot camps, and 8 billion dollars for crime prevention programs. Do you favor or oppose this crime legislation? 5.) The U.S. Senate has passed a “three strikes and you’re out” law, which requires any criminal convicted of three violent felonies to be imprisoned for life without the possibility of parole. Do you favor or opposed this “three strikes and you’re out” law? 6.) Would you say that the criminal justice system in this country is basically sound or not? 7.) Thinking of criminals who commit violent crimes, do you think most, some, only a few, or none of them can be rehabilitated given early intervention with the right program?

⁵The specific question wording is as follows: 1.) In general, do you think the courts in this area deal too harshly or not harshly enough with criminals? 2.) How much confidence do you have in... Courts and the legal system? 3.) Do you favor or oppose the death penalty for persons convicted of murder? 4.) Are we spending too much, too little, or about the right amount on halting the rising crime rate?

⁶Again, given the impressive model fit with uncorrelated residuals, this is the only model estimated.

confidence in the legal system corresponds with the weakest factor loading, matching the factor loading of support for foreign aid in the mood index. Support for spending on halting crime and support for the death penalty correspond with factor loadings that fall slightly below the average mood factor loading, and the factor loading for viewing the courts as not harsh enough far exceeds any of the mood factor loadings.

Table A-5: Confirmatory Factor Analysis of Indicators of Support for Being Tough on Crime, *GSS* Survey, 1991, 1998, 2008

Lack confidence in legal system	0.06*	(0.02)
Favor the death penalty	0.33*	(0.04)
Courts not harsh enough	0.75*	(0.08)
Spend more on halting crime	0.24*	(0.03)
N		3,312
Root mean square of approximation		0.010
Comparative fit index		0.998
Tucker-Lewis index		0.994

Note: Cells report standardized factor loadings based on Confirmatory Factor Analysis (uncorrelated residuals). *= $p < .01$, standard errors in parentheses.

Across all CFA models, using individual-level data from 1967, 1991, 1995, 1998, and 2008, all indicators are significant and in the expected direction. We also see good model fit and factor loadings that correspond in magnitude with the factor loadings we observed for the primary indicators of policy mood. In sum, we have substantial individual-level evidence that is consistent with the expectation that these survey questions correspond with support for being tough on crime.

Validation with Survey Questions about Crime Perceptions

As a final validation exercise, I examined how three Gallup questions about crime perceptions relate to the overall tough on crime opinion index. These questions have been asked consistently from 1965 to 2011.⁷ If the measure of support for being tough on crime is a

⁷The specific question wording is as follows: 1.) Is there any area near where you live—that is, within a mile—where you would be afraid to walk alone at night? 2.) Is there more crime in the U.S. (United States) than there was a year ago, or less? 3.) Is there more crime in this area than there was a year ago, or less?

valid indicator of punitive attitudes, we might expect that over time perceptions of criminal activity would correlate with the measure. To test this hypothesis, I constructed a new measure of public punitiveness that adds these three questions (asked a total of 69 times). The resulting measure (based on 36 questions asked 450 different times) correlates with the original measure at $r=0.98$ and as indicated in Table A-6, these three crime perceptions questions correlate strongly with the new punitive measure. In addition to offering further support for the measurement strategy, as reported in Table A-8, below, the results reported in the paper are robust to using this measure of punitiveness (based on all 450 questions).

Table A-6: Correlations of Each Question Series and the Estimated Tough on Crime Opinion Measure

Question	Correlation	Date Range	Times Asked	Years Asked
Afraid to walk alone (Gallup)	0.683	1965-2011	32	29
More crime in the U.S. (Gallup)	0.954	1989-2005	9	8
More crime in this area (Gallup)	0.518	1972-2011	28	25

Appendix 3: Analyzing Change in the Incarceration Rate

The text explained that analyzing the overall incarceration rate (as opposed to changes in the incarceration rate) can lead to incorrect inferences about the determinants of incarceration. This possibility results because during most of the period of analysis, the U.S. prison system admitted more inmates than it released. For example, suppose that the crime rate influences the number of new admittances to prison (and thus the overall incarceration rate). If more inmates are admitted than released, even if the crime rate falls and the number of new admittances decreases, the overall incarceration rate will still increase, moving in the *opposite* direction as the crime rate.

Table A-7 uses annual data on the rate of new incarcerations and the overall incarceration rate from 1977 to 1998 to illustrate this concern.⁸ Since the prison system admitted

⁸I analyze this period because admittance and release data do not exist prior to 1977 and the annual data are incomplete after 1998.

more inmates than it released each year during this time period, I expect that the overall incarceration rate will increase as a function of time, obscuring the relationship between new incarcerations and the overall incarceration rate. Column 1 tests this proposition. Consistent with expectations, when controlling for a linear time trend, we find no relationship between the rate of new admissions and the overall incarceration rate (both variables have been scaled to a standard deviation of one). Of course, new admissions influence the incarceration rate, but we do not observe such a relationship because regardless of whether the rate of new incarcerations increased, decreased, or remained the same, the incarceration rate increased each year.

Table A-7: The Relationship between Prison Admissions, the Incarceration Rate, and the Change in the Incarceration Rate, 1977 to 1998

	(1)	(2)
	Incarceration Rate	Δ Incarceration Rate
Admission Rate	0.06 (0.20)	2.09* (0.69)
Year	0.14* (0.03)	-0.21 (0.11)
Constant	-1.65* (0.35)	2.39 (1.22)
R ²	0.97	0.67
N	22	22

Note: Standard errors in parentheses. * = $p < .05$, two-tailed significance levels. To facilitate comparison, incarceration variables have been scaled to a standard deviation of one.

Column 2, by contrast, shows that analyzing changes in the incarceration rate obviates this problem. Even after controlling for the linear time trend, we observe a statistically significant relationship between new admissions and the *change* in the incarceration rate. This result reflects the fact that more (fewer) admissions correspond with a larger (smaller) increase in the incarceration rate. Furthermore, as expected, the magnitude of this relationship is quite substantial. These results reinforce the importance of analyzing *change* in

the incarceration rate.⁹ In addition to solving the problem that new admittances do not necessarily correlate with the overall incarceration rate, analyzing change is advantageous because change incorporates information about admissions and releases.

Appendix 4: Details on Drug Mortality Rate Data

The annual drug mortality rate offers the best measure of over time drug use for the period of interest (Hewitt & Milner 1974, Samkoff & Baker 1982, Paulozzi & Xi 2008). The data used to generate the annual rate of drug mortalities come from the Center for Disease Control Compressed Mortality Database (<http://wonder.cdc.gov/mortSQL.html>) and the Vital Statistics of the United States (<http://www.cdc.gov/nchs/products/vsus.htm>). Drug mortality was identified by the following International Classification of Diseases and Health Problems (ICD) categories: “Other Drug Addiction” (prior to 1968), “Drug Dependence” (between 1968 and 1998), and “Dependence Syndrome” (1999 to the present). Alcohol and Tobacco dependence were not incorporated in the estimate of “Dependence Syndrome” (i.e., years 1999-2006) because the previous ICD categories of “Other Drug Addiction” and “Drug Dependence” did not include alcohol or tobacco use. These categories were selected to maximize consistency and comparability in the over time drug use estimates (see, e.g., recommendations from the World Health Organization (http://www.who.int/substance_abuse/terminology/definition1/en/), the Center for Disease Control (<http://www.cdc.gov/nchs/icd/icd9.htm>), and Room (1998)). The drug mortality rate is calculated based on the adult population, ages 14 to 65. The population data come from the U.S. Census Bureau Statistical Abstract of the United States: 2003 (http://www.census.gov/compendia/statab/hist_stats.html) and the U.S. Census Bureau Resident Population by Race, Hispanic Origin, and Age (http://www.census.gov/compendia/statab/cats/population/estimates_and_projections_by_age_sex_raceethnicity.html).

⁹In theory, we could also analyze new admittances, but those data do not exist for the entire period of analysis.

Appendix 5: Additional Robustness Checks

The results reported in Table 1 in the text show that the relationship between the public's preferences for being tough on crime and the incarceration rate is robust to a variety of important control variables and model specifications. To further assess the robustness of this relationship, Table A-8 (below) reports results with additional controls for the public's general political ideology, the public's racial conservatism, the rate of unauthorized immigration and border enforcement, and the unemployment rate. All models build on Column 4 of Table 1 in the text and estimate long term relationships. Column 1 in Table A-8 replicates Column 4 of Table 1 *omitting* the measure of the public's punitiveness. The magnitude of the coefficient for the crime rate increases to 1.97 and the estimate is now statistically different from zero. This increase represents a 56 percent increase over the crime rate coefficient in Column 4 of Table 1 and is consistent with the possibility that the public's punitiveness mediates the relationship between the crime rate and the incarceration rate. That is, when crime increases (decreases), if the public responds by becoming more (less) punitive, the incarceration rate reflects these changes.

Column 2 of Table A-8 replaces the measure of public punitiveness used in the text with an alternate measure (described above in Appendix 2) that adds three questions about the public's perceptions of the crime rate. This alternate measure includes 36 distinct opinion questions asked 450 different times. The results are nearly equivalent to those reported in the text. Column 3 adds a control for the public's political ideology. For theoretical reasons, the text focused on the public's punitiveness instead of this general measure of political ideology. For example, Druckman & Jacobs (2006) show that on issues important to the public, policy makers typically rely on policy specific opinion. Given the prominence of crime issues in the media (Beckett 1997, Mauer 2006) and the salience of the issue to the public (Simon 2007), we should expect policy specific (not general ideological) responsiveness (Druckman & Jacobs 2006). Nevertheless, to ensure that the previously observed relationship between tough on crime attitudes and the incarceration rate does not reflect a response to increases in general ideological conservatism, column 3 adds Ellis & Stimson's (2009) measure of the public's political ideology (recoded in the conservative direction) to the

model. Ellis & Stimson's (2009) over time measure of the public's political ideology is based on all available survey question which have asked whether respondents identify as political liberals or conservatives.¹⁰ The tough on crime opinion index does not include this type of political ideology question so the two measures do *not* include any common question items. The results indicate that the influence of the public's support for being tough on crime is independent of the public's political ideology. When we control for ideology, the coefficient on tough on crime remains roughly equivalent.¹¹ The relationship between the incarceration rate and the public's general political ideology is not statistically different from zero.

To control for the public's racial attitudes, column 4 adds an updated measure of Kellstedt's (2000, 2003) index of the public's racial policy liberalism (recoded in the conservative direction). The previous results should be robust to this control. Despite the disproportionate incarceration of racial minorities and the link between racial predispositions and criminal justice attitudes (Hurwitz & Peffley 1997, Hurwitz & Peffley 2005), when controlling for tough on crime attitudes, there is no reason to expect racial attitudes to directly influence the incarceration rate. To the extent that racial attitudes influence criminal justice attitudes, the inclusion of the tough on crime opinion index should already account for this relationship. The results in column 4 are consistent with this expectation. The effect of the public's support for being tough on crime remains significant and the coefficient on racial conservatism is negative and not statistically different from zero. Although this negative coefficient is surprising, Nicholson-Crotty, Peterson & Ramirez (2009) report a negative relationship between racial conservatism and federal incarceration policies. It may be that social desirability bias has led to increasingly liberal responses to racial policy questions, even as support for more punitive policy outcomes increased. This possibility offers further support for utilizing the measure of tough on crime attitudes.

¹⁰The question wording typically follows the format, "How would you describe yourself on most political matters? Generally, do you consider yourself as liberal, moderate, or conservative?" The data are available at <http://www.unc.edu/~jstimson/Data.html>. To recode their series in the conservative direction, I subtracted the series from 100.

¹¹Although not shown, the results are also robust to adding Stimson's (1999) policy mood to the model; $b=0.93$, $s.e.=.28$ for tough on crime opinion.

Table A-8: The Relationship between the Public's Punitiveness and the Incarceration Rate, Controlling for Conservative Ideology, Racial Conservatism, the Rate of Unauthorized Immigration and Border Enforcement, and Unemployment

	(1)	(2)	(3)	(4)	(5)	(6)
	No Public Opinion	W/ Crime Perceptions	Conservative Ideology	Racial Conservatism	Border Enforcement	Unemployment Rate
Incarceration Rate _{t-1}	-0.53* (0.12)	-0.69* (0.14)	-0.83* (0.15)	-0.68* (0.14)	-1.13* (0.15)	-0.72* (0.14)
Tough on Crime Opinion _{t-1}		0.49* (0.22)	0.47* (0.22)	0.48* (0.24)	0.54* (0.26)	0.48* (0.23)
Crime Rate _{t-1}	1.97* (0.57)	1.26 (0.64)	2.08* (0.82)	1.11 (0.79)	2.86* (0.66)	1.54* (0.70)
Drug Use _{t-1}	-0.35 (0.39)	-0.23 (0.38)	-0.31 (0.38)	-0.21 (0.39)	-0.02 (0.38)	-0.28 (0.42)
Inequality _{t-1}	-0.64 (0.99)	-0.31 (0.97)	0.87 (1.16)	0.99 (1.47)	8.18* (2.11)	-0.90 (0.99)
Republican Strength _{t-1}	2.17 (1.45)	1.40 (1.45)	1.32 (1.50)	1.36 (1.48)	2.08 (1.52)	2.02 (1.60)
Conservative Ideology _{t-1}			-0.38 (0.32)			
Racial Conservatism _{t-1}				-0.10 (0.29)		
INS Apprehensions _{t-1}					-0.12 (0.13)	
INS Border Patrol _{t-1}					-17.92* (6.10)	
Δ Unemployment Rate						-0.82 (0.78)
Unemployment Rate _{t-1}						-0.62 (0.59)
Constant	3.35 (4.33)	-27.95 (14.87)	-4.50 (22.21)	-17.59 (21.43)	-52.17* (15.06)	-20.95 (13.94)
R ²	0.31	0.37	0.43	0.37	0.59	0.39
N	57	57	54	57	52	57

Note: Standard errors in parentheses. * = p < .05, two-tailed significance levels.

Column 5 controls for the rate of unauthorized immigration to the United States and the level of U.S. border enforcement. Although the majority of incarcerations measured by the dependent variable reflect state incarcerations, this model helps ensure that factors that influence federal incarcerations are included in the model. In 1994, just 5.3 percent of new federal incarcerations stemmed from immigration offenses. By 2004, this percentage had increased to 20.5 percent.¹² The influence of the public's support for being tough on crime remains statistically significant and of similar magnitude to the previous models. Although this model offers an rigorous robustness check, the unauthorized immigration variables introduce some collinearity to the model (for example, Inequality and INS Border Patrol correlate at $r=0.82$), so we should be cautious about drawing strong inferences from the control variables in this model. Column 6 adds the unemployment rate to the model. Some incarceration research focuses on unemployment levels instead of income inequality. The influence of public opinion remains virtually unchanged.

Appendix 6: Since the Great Recession

The text provides compelling evidence of a strong relationship between public support for being tough on crime and both the incarceration rate and the percent of Congressional hearings devoted to crime. Some scholars have suggested, however, that criminal justice policy has shifted since the start of the Great Recession in 2007. This raises the question of whether the relationships reported in the text hold for recent years. To address this question, Figure A-1, below, reports the public's punitiveness (solid black line) along with

¹²These statistics come from the Compendium of Federal Justice Statistics <http://bjs.ojp.usdoj.gov/content/pub/pdf/cfjs0405.pdf> and <http://bjs.ojp.usdoj.gov/content/pub/pdf/cfjs9404.pdf>. The immigration and border enforcement data come from Gordon Hanson (Hanson & Spilimbergo 1999, Hanson 2006) who has used data from the U.S. Immigration and Naturalization Service to construct the best available estimates of unauthorized immigration and immigration enforcement. INS Apprehensions reflects the total number of apprehensions of unauthorized immigrants at U.S. borders. I divide this measure by the total U.S. population to estimate the rate of unauthorized immigration. INS Border Patrol captures immigration enforcement with the number of person hours the U.S. Border patrol spends policing U.S. borders. Not surprisingly, the two measures are positively correlated ($r=0.60$). The data are available at <http://irps.ucsd.edu/faculty/faculty-directory/gordon-hanson.htm>. The data are monthly and extend from July 1963 to September 2004. To generate annual data, for each year, I assigned the average monthly value from the immigration data series. Because the data from 1963 are incomplete and because there are no data prior to 1963, all years prior to 1964 were assigned the value from 1964. Assuming constant immigration prior to 1964 is unproblematic because, as noted above, the spike in federal immigration incarcerations is relatively recent. For ease of presentation, I recoded the Border Patrol Hours variable to range from 0 to 1.

three measures of criminal justice outcomes (the percent of Congressional hearings related to crime, the percent of the federal budget devoted to criminal justice, and changes in the incarceration rate from 2005 to 2010. This allows a comparison of the over time trajectory of these variables before and after the onset of the Great Recession in 2007. To facilitate comparison, the series have been standardized to a common mean and variance. Consistent with expectations, we see the three measures of criminal justice outcomes and the measure of the public’s punitiveness appear to move roughly in tandem over time. Furthermore, the similar trajectories exist before and after 2007. Not surprisingly, the series reflect some unique variation, most notably the rise in the proportion of the federal budget devoted to justice administration in 2010. But the focus on these years reinforces the findings in the main text and suggests that those conclusions did not change following 2007.¹³

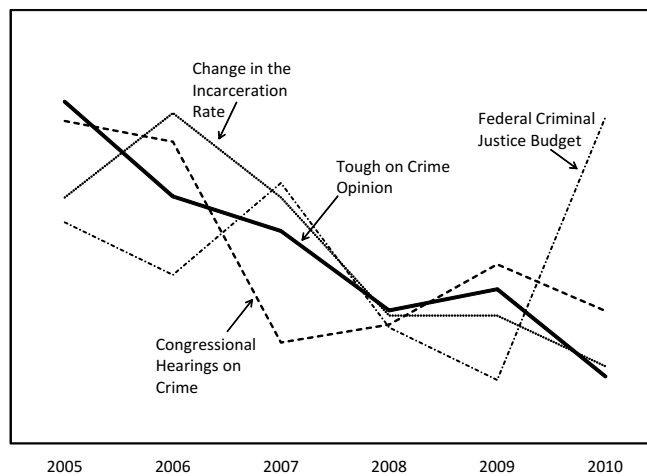


Figure A-1: The Public’s Punitiveness and Three Measures of Criminal Justice Activity, 2005-2010. *Note:* To facilitate comparison, the series have been standardized to a common mean and variance.

¹³This limited time series is not intended to speak to which series leads which (the VAR analysis in Table 2 of the text is designed to speak to that question).

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