

The Political Economy of Gun Control: An Analysis of Senatorial Votes on the 1993 Brady Bill

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Abstract

Although much research has addressed the effects of guns on violent crime and the efficacy of gun-control laws in reducing violent crime, surprisingly little attention has been given to the political process through which gun policies are determined. This paper contributes towards bridging this research gap by analyzing the important factors that determined senatorial voting on the Brady Bill. Although the Democratic Party and pro-control ideology enabled passage of the Brady Bill, senators were less likely to vote for the bill if they received pre-vote contributions from the NRA, if their constituencies faced high rates of violent crime, or if their constituencies had a strong interest in hunting.

I. Introduction

With approximately 212 million guns in private hands, 284,000 licensed gun dealers, and violent crime rates exceeding those of most western democracies, it is hardly surprising that gun control has become a popular and controversial political issue in the United States.¹ Arguments for and against gun control have become standard fare in political races, on the editorial page, and in any debate over how to curb crime. In response to these debates, many researchers have attempted to analyze the effects of gun-control laws on rates of violent crime.

The results of this research have not been conclusive. Some early research indicated that gun-control laws could effectively reduce crime. However, later research challenged this conclusion. The literature is indeed voluminous.²

Surprisingly, the political process that yields gun-control laws has received scant attention. Langbein and Lotwis (1990) provide a notable exception in their analysis of House votes on amendments to the Firearms Owners Protection Act of 1986. In the spirit of their work, I analyze the political economy of the 1993 Brady Bill, the first federal gun-control legislation to pass since the Gun Control Act of 1968. To carry out this analysis, I use data on senators' votes on the Brady Bill and characteristics of their constituents, including the rates of violent crime these constituents face, to infer constituent beliefs about the effects of gun-control laws. This methodology, predicated upon the assumption that legislators' votes reflect the preferences of their constituents, has strong theoretical and empirical support in the legal and economic literature.³ More directly, if a legislator's constituents believe gun control *reduces* violent crime, the legislator should reflect this belief by voting in favor of gun-control legislation. On the other hand, if a legislator's constituents believe gun control has a negligible impact on crime, or may increase violent crime by disarming victims, or that gun control threatens other legitimate gun uses (e.g., hunting, target shooting), the legislator should reflect this belief by voting against gun-control legislation.

Some might question whether constituents' beliefs are accurate reflections of reality. Admittedly, the public may not "know" the results of the empirical work cited in endnote 2; yet, this ignorance does not imply that members of the public do not "know" the effects of public policies on their lives. With respect to the issue addressed in this paper, surely individuals with an interest, particularly those confronted with the threat of violent crime and the need for self-defense, should intuitively "know" the effects of a change in gun-control policy on their safety, and express this knowledge through the political process, even if they cannot quantify these effects. The contribution of this paper is to offer an alternative, yet complementary, means of testing the link between gun-control laws and the prevalence of violent crime by examining how senators from states with vastly different rates of violent crime voted on the Brady Bill.

Some of the important findings are these: (1) senators from states with high rates of violent crime were not differentially likely to vote for the Brady Bill and, if anything, were more likely to vote *against* the Brady Bill; (2) senators from states where hunters form a strong interest group were more likely to vote *against* the Brady Bill; (3) senators receiving relatively large campaign contributions from the National Rifle Association (NRA) were more likely to vote *against* the Brady Bill; and (4) democrats and politically "liberal" senators were more likely to vote *for* the Brady Bill. These findings are important because they identify and measure the effectiveness of important political interests that influence U.S. gun-control policy. Of particular significance, these findings corroborate the results of other studies finding no link between gun-control laws and reductions in violent crime by their implication that many citizens of highly violent states viewed the Brady Bill as either ineffective or as a potential impediment to self-defense.

The paper is outlined as follows. The following section provides a brief review of the legislative history and contents of the Brady Bill. Section three provides an analysis of the constituent characteristics that should have influenced senatorial voting on the Brady Bill, paying special attention to the theories and evidence on the efficacy of guns as means of self-defense and a deterrent to crime. The results of empirical tests of the significance and impact of these constituent characteristics and other political variables on senatorial votes are presented and discussed in section four. After briefly considering why the pro-gun lobby lost, the conclusion offers some final thoughts on the effectiveness of the Brady Bill and the future of gun-control legislation.

II. The Brady Bill

On November 30, 1993, President Bill Clinton signed the Brady Bill (PL 103-159), ending a long and controversial fight for the first piece of federal gun-control legislation in 25 years. The House approved the bill by a 238-189 margin on November 10, and the Senate followed suit 10 days later by a 63-36 vote. House Judiciary chairman, Jack Brooks (D-Texas) facilitated passage by separating the Brady bill from the omnibus crime bill (HR 3131), which he realized had far less chance of passage. (A Brady bill had died in 1992 as part of an omnibus crime package.)

The primary provision of the bill is a five-day waiting period for the purchase of handguns. Advocates of the bill argued the waiting period would help prevent "heat of the moment" shootings as well as allow police to conduct background checks on buyers to prevent the sale of handguns to convicted felons. The five-day waiting period is to be replaced within five years by a computerized system that would allow instant background checks of potential buyers. Secondary provisions of the bill are an increase in the licensing fees of gun dealers and a requirement that police be notified of multiple gun purchases.⁴

III. Constituent Interests and Gun Control

To elucidate the political pressures constituents may bring to bear on their legislators, I now turn to a discussion of the utility of guns for self-defense, recreation, and cultural identification.⁵

A. Guns as instruments of violence or tools of self-defense

Individual opinions on gun-control policy are certain to vary, at least in part, depending upon an individual's assessment of the effects of such policies on violent crime. Three effects are possible: (1) the gun-control law may effectively reduce crime, or (2) the gun-control law may have an insignificant impact on crime, or (3) the gun-control law may effectively increase crime by reducing victims' capacity for self-defense. If an individual believes the net effect of crime reduction from gun control exceeds any increased threat of victimization, support of gun control is rational. On the other hand, an individual who believes gun control impedes self-defense and does not reduce violent crime will rationally oppose gun control. The beliefs of citizens, as expressed through the voting of their legislators, is explored in the following section. However, insight into what constituent preferences might be can be gained by examining theoretical, anecdotal, survey, and statistical evidence on the efficacy of handguns as not only tools of self-defense, but also as effective deterrents to crime.

To begin, the theoretical positive link between gun availability and gun violence is suspect simply because correlation need not imply causation. The high levels of gun ownership in the United States may be the *result* of crime-weary citizens arming themselves against perceived and real dangers.⁶ Of course, the causality may run both ways, but an assumption of unilateral causality from guns to crime overlooks a hypothesis of equal validity. Indeed, some researchers, examining game theory and the likelihood that the criminal tendencies of some segment of the population may depend upon the effectiveness of deterrence, conclude that guns may be an important means of self-defense.⁷

Theoretical evidence, however, can only go so far towards determining the efficacy of guns as a deterrent to crime or citizens' beliefs about the effectiveness of gun control as a means of reducing crime or inhibiting defensive capabilities. Fortunately, additional evidence is revealed in anecdotes and surveys.

For example, after a 1966-67 Orlando, Florida program trained 6,000 women in firearm safety, Orlando's rape rate dropped an astounding 88 percent the following year and did not rise to pre-program levels until 1972.⁸ Similarly, a 1982 ordinance requiring gun ownership in Kennesaw, Georgia reduced the burglary rate by 89 percent. Other programs to effectively arm ordinary citizens have yielded similar results.⁹

At an individual level, the effectiveness of handguns to thwart a criminal attack is uncertain. Much conventional wisdom, advice from criminal justice practitioners, and advocacy from pro-control supporters encourages potential crime victims to comply with criminals' demands. Nevertheless, Ziegenhagen and Brosnan (1985) conclude that "victim compliance is no guarantee of safety from physical injury" (p. 687). Analyzing data from 3,679 robbery attempts, they find that without resistance, most crime victims suffer loss of property, though not injury. However, when potential victims do resist, they are less likely to suffer either property loss or injury. And potential victims who resist by using or brandishing a weapon escape injury and property loss over 65 percent of time and suffer injury or property loss only 28 percent of the time. Kates (1991) argues that resistance may be particularly valuable to those threatened by repeated attacks.

Survey data from gun users corroborate these findings. Of the 20-25 percent of U.S.

households owning handguns, approximately 40 percent give self-defense as the primary reason.¹⁰ And intent often translates into use. Citing evidence from anti-gun organizations, Kates reports estimates of 645,000 defensive uses of handguns per year in the United States.¹¹ Further, these uses are usually successful, since “(e)vidence suggests that handgun armed defenders succeed in repelling criminals, however armed, in eighty-three to eighty-four percent of the cases” (p. 143). In a vast survey of the gun literature, Reynolds and Caruth (1992) cite evidence of approximately 1 million defensive uses of handguns per year in the U.S. These defensive uses kill an estimated 2,000 to 3,000 criminals and injure another 9,000 to 17,000, with few accidental shootings or occasions when criminals seize the gun and turn it on the victim.

Kleck (1995) argues that the rising stock of handguns in the U.S. is a response to rising crime and that “(m)ost handguns are owned for defensive reasons” (p. 13). Using data on total guns, Kleck estimates 2.5 million defensive uses per year and that deterrence is a motive for ownership for approximately one third of gun owners.¹²

Further, surveys of criminals reveal that they perceive gun ownership as a valid threat against crime. Over half of surveyed felons say they worry more about an armed victim than about the police and that an armed store owner is less likely to be robbed.¹³ Thirty-four percent of felons report worry about being shot at and an equal percentage say they have been confronted by an armed victim with the result being either too much fear to carry out the crime, or being fired upon, or injury or capture.¹⁴

Numerous studies analyze the statistical relationship between gun prevalence and crime. Kleck and Patterson (1993) review these studies as well as their own study, and find that “(h)omicide (gun, nongun, and total), gun assault, and rape rates all had significant positive coefficients in the gun prevalence equations,” supporting “the hypothesis that some violence rates encourage the acquisition of firearms for self-defense” (p. 272). In sum, theoretical, anecdotal, survey, and statistical evidence indicate that many constituents find guns an effective means of self-defense, and therefore may lobby their legislators to vote against gun-control legislation.

C. Guns and recreation

A second motive for gun ownership is recreation. Wright (1984), citing evidence from a 1978 Decision Making Information study for the NRA, reports that 54 percent of gun owners say hunting is the most important reason for ownership. However, only 9 percent of handgun owners cite hunting as the most important reason. Target shooting and collection are other important motives for gun ownership.

D. Guns and culture

Pro-control advocates are fond of criticizing a gun “subculture.” That this subculture exists is hardly questionable, as many clearly identifiable traits indicate whether or not a given individual is likely to be a gun owner. Specifically, an older male, with a high income and an interest in hunting, raised in the rural South with a Protestant background is most likely to be a gun owner.¹⁵ These “segments of the population . . . have the lowest rates of violent behavior,”¹⁶ and consequently are unlikely to view gun control as necessary to deter crime. If anything, gun control is a threat to their cultural identity. The presence of a gun subculture provides indirect evidence that the recent rise in gun ownership is a response to rising crime. Because members of the gun subculture have owned guns since the country’s origin, the rise in gun ownership “since the mid-1960s” must be

“attributable to concerns about crime.”¹⁷

IV. An Empirical Analysis of Senatorial Votes on the Brady Bill

Standard arguments supporting the Brady Bill assert that waiting periods reduce violent crime, especially crimes committed in the “heat of the moment.” If this assertion is correct, legislator’s constituents, especially those subject to violent crime, should express their preferences in support of the Brady Bill. In turn, their legislators can be expected to cast votes in favor of the Brady Bill. On the other hand, if constituents consider gun control a threat to their self-defensive capabilities, recreational opportunities, or cultural identity, they will lobby their legislators to vote against gun control.

A. The model

To test the effects of constituent interests on senators’ votes on the Brady Bill, I have estimated an econometric model, based on the assumption that legislators do reflect their constituents’ interests when voting. The model identifies significant constituent interests and measures their influence by estimating the effects these interests had on the probability that a given senator voted for or against the Brady Bill.

The single-equation model is given below¹⁸:

$$\text{BRADY} = a_0 + a_1\text{VCRIME} + a_2\text{RURAL} + a_3\text{HUNTREV} + a_4\text{POLICE} + a_5\text{NRA} + a_6\text{HCI} + a_7\text{PARTY} + a_8\text{ADARESID} + E. \quad (1)$$

Variables are defined as follows:

- (1) BRADY: A given senator’s vote on the Brady Bill, coded one if the senator voted in favor of the Brady Bill and zero if the senator voted against the bill
- (2) VCRIME: Violent crimes per 100,000 of population in a given senator’s state¹⁹
- (3) RURAL: Rural population per 1,000 of total population in a given senator’s home state
- (4) HUNTREV: Hunting license revenues per thousand of population in a given senator’s home state
- (5) POLICE: State and local government full-time equivalent police employment per thousand of population in a given senator’s home state
- (6) NRA: NRA contributions received by a given senator, in real terms, from 1987 to 1992²⁰
- (7) HCI: Handgun Control Inc. contributions received by a given senator, in real terms, from 1987 to 1992
- (8) PARTY: A given senator’s political party affiliation coded one if the senator is a Democrat and zero if the senator is a Republican
- (9) ADARESID: The residuals from a regression of each senator’s rating from the Americans for Democratic Action against all independent variables in equation (1) and other socio-economic variables.²¹

All data are for 1992 or the year closest to 1992 for which data are available. Descriptive statistics for each variable (and additional variables used later in the paper) are presented in Table 1²², and an appendix lists data sources.²³

The equation provides an estimate of the probability that a given senator will vote for the Brady Bill, given all constituent interests modeled. This equation is examined below.

The VCRIME variable measures the citizenry’s exposure to violent crime in a given senator’s

state. If citizens exposed to high rates of violent crime believed the Brady Bill would help to reduce that crime, then senators from high crime state should be differentially likely to vote in favor of the Brady Bill, (i.e., a_1 is predicted to be positive). On the other hand, if citizens believed the Brady Bill would have no effect on violent crime or might inhibit possibilities for self defense, senators from high crime states would not be differentially likely to vote for the Brady Bill and would likely vote against it.

Other measures of constituent characteristics should also affect senators' votes. RURAL may reflect the prevalence of a "gun culture" in a given state. If so, a high share of state population that is rural should make a given senator less likely to vote for the Brady Bill, all else equal, so a_2 should be negative. HUNTREV proxies the economic impact of hunting in a state. Because over half of gun owners and nine percent of handgun owners cite hunting as the most important reason for gun ownership,²⁴ and because hunters may not perceive a link between gun ownership and violent crime, hunters may be opposed to gun control of any kind. Therefore, senators from states where hunting is an important business and hobby may be less likely to vote for the Brady Bill, and a_3 is predicted to be negative.

The effect of POLICE is ambiguous. If constituents consider police protection effective, senators from states with high levels of police protection may face little pressure to vote for or against the Brady Bill, regardless of constituent views of the effectiveness of gun control. On the other hand, in states with relatively little police protection, citizens who believe gun control works will lobby their senators to vote for the Brady Bill, while those who believe gun control is ineffective or an impediment to self-defense will lobby against the bill. However, consideration of individual citizens alone ignores the lobbying efforts of police. Public statements given by many chiefs of police, police organizations, and police unions indicate that police forces take active positions in the fight for gun control.²⁵ For example, Washington, D.C. Metropolitan Police Department chief, Fred Thomas, and New York City's police commissioner, Raymond Kelly, strongly supported the Brady Bill, with Kelly saying that "(g)un control laws, the stricter the better, are critical [to reduce violent crime]."²⁶ Further, both the Fraternal Order of Police and the National Association of Police Organizations favored the Brady Bill.²⁷ Nevertheless, Ayoub calls these statements and positions into question by arguing that unlike police chiefs and commissioners, whose public statements may reflect political appointments and realities, the majority of "street cops" believe gun control does nothing to reduce crime and that guns are an effective defense against crime. The sign on a_4 is uncertain.

The importance of campaign contributions to political outcomes is well recognized, so NRA and HCI are included in the model, with the sign of a_5 expected to be negative and the sign of a_6 expected to be positive.²⁸ With over 3 million members and over \$2.5 million spent on congressional races in 1992,²⁹ the NRA has long been recognized as a potent political force.³⁰ Its rival organization, HCI, is smaller, with only 360,000 members in 1993, but still an important political force, whose president, Richard Aborn, considered the Brady Bill "a national referendum on public support for a more comprehensive gun control debate."³¹

Finally, political affiliation and ideology are considered. Since the Democratic Party is known to generally favor gun control, PARTY is included in the model, and a_7 is expected to be positive, especially if party affiliation reflects a constituency's preferences not fully captured by the state average statistics. PARTY also proxies for the effects of party control, loyalty, and discipline, which may have been especially important, given a Democratic president who firmly supported the Brady

Bill. The variable ADARESID is designed to capture any ideological preference not reflected in constituent characteristics. If a senator's ADA rating is greater than predicted by PARTY and other variables reflecting constituent interests, that senator is more "liberal" than his constituents and is predicted to be more likely to vote for the Brady Bill (i.e., α_8 is expected to be positive).³²

B. The results

The results of the empirical estimate are shown in Table 2. Before examining these results, three notes are in order. First, the empirical model is estimated using logit regression because the dependent variable is qualitative. Second, the results are presented for two equations, one with the POLICE variable and one with the POLICE variable omitted. The second equation is presented because of multicollinearity between POLICE and VCRIME, though the estimates of the two equations are fundamentally the same.³³ Finally, because the coefficient is not equivalent to the derivative in logit regression, the derivative of each variable (noted as the partial effect) is presented in an adjacent column.³⁴

The predictive power of the model is high as evidenced by the significance of the likelihood ratio test, the R-square value, and the fraction of senatorial votes forecasted correctly.³⁵ The model clearly identifies many of the factors that influenced senatorial votes on the Brady Bill and provides reasonable measures of their effects.

Turning to the variable of primary interest, VCRIME, we find that senators from states with high rates of violent crime were *not* more likely to vote for the Brady Bill. Though the coefficient is significant at only the relatively weak 10 percent level for a one-tail test, the negative sign indicates that senators from states with high rates of violent crime were *less* likely to vote for the Brady Bill. And when the POLICE variable is omitted, the coefficient becomes significant at the 10 percent level for a *two*-tail test. The partial effects suggest that an increase in the violent crime rate of 100 violent crimes per 100,000 of population reduced the probability a senator voted for the Brady Bill by about 0.05.

The importance of hunters as an interest group is evident, with the coefficient on HUNTREV being negative and significant in both regressions. An additional \$1,000 per capita in hunting license revenues reduced the likelihood a senator would vote for the Brady Bill by almost 0.05.

Campaign contributions, at least those given by the NRA, are clearly important determinants of senatorial votes. The coefficient on NRA contributions is negative and significant in both regressions, and the partial effect indicates that an additional \$1,000 contribution to a senator's campaign yielded the NRA an increased likelihood of a vote for its position (against the Brady Bill) of at least 0.035. Senators clearly do respond to NRA contributions. The partial effect of HCI contributions appears even larger than that of NRA contributions, indicating an additional \$1,000 contribution from HCI yielded this pro-control lobby an increased likelihood of a vote for the Brady Bill of approximately 0.07. This relatively high effect indicates that HCI contributions are more effective than NRA contributions, and perhaps that HCI allocates its funds more efficiently; however, the efficacy of HCI contributions is called into question by the insignificance of the coefficients.

Political party affiliation and ideology are apparently very important determinants of senatorial votes on gun control. The power of the Democratic Party's position in favor of the Brady Bill is evidenced by the partial effect showing that, all else equal, a Democratic senator was more likely to support the Brady Bill by a factor of at least 0.36. Similarly, senators with a more liberal

ideology than their constituents were more likely to vote for the bill.³⁶

The negative coefficients on RURAL are consistent with the presence of a “gun culture” in less densely populated areas, but the variable is only marginally significant in the first estimate and insignificant in the second. The POLICE variable is also insignificant, perhaps reflecting the conflicting views and interests captured in this variable.³⁷

To test the robustness of these results, I re-estimated the equation, replacing the rate of violent crime with the murder rate and the rate of murders *by handguns*.³⁸ Because these results are nearly identical to those reported in Table 2, they are not fully reported.³⁹ However, the coefficients on the crime measures reveal that an increase in the murder rate of one per 100,000 of population reduced the likelihood a senator voted for the Brady Bill by at least 0.03, and an increase in the rate of murder by handgun by one per 100,000 reduced the likelihood of voting for the Brady Bill by approximately 0.05 to 0.06. These results offer no support to the hypothesis that senators from states with high rates of violent crime are differentially likely to support a national waiting period for purchases of handguns. To the contrary, the evidence presented indicates that these senators were *less* likely to support a national waiting period, reflecting the preferences of constituents who perceived the Brady Bill as at best ineffective and at worst an impediment to crime deterrence and self-defense.⁴⁰

V. A Closer Look at NRA Campaign Contributions

The effects of campaign contributions on any political outcome, including gun control, is the subject of much debate and controversy. Rather than enter that debate, I present a positive analysis of how the NRA determines contributions to (and against) senatorial candidates by estimating the following model:

$$pBRADY = B_0 + B_1VCRIME + B_2RURAL + B_3HUNTREV + B_4POLICE + B_5HCI + B_6PARTY + B_7ADARESID + E. \quad (2)$$

$$pNRA = d_0 + d_1pBRADY + d_2pBRADYSQ + d_3MARGIN + E. \quad (3)$$

In equation (2), predicted values of the probability a senator will vote for the Brady Bill ($pBRADY$) are estimated using all the variables in equation (1) except NRA contributions.⁴¹ Then in equation (3), predicted NRA contributions are modeled as a function of the probability a senator will vote for the Brady Bill, the squared probability a senator will vote for the Brady Bill ($pBRADYSQ$), and the senator’s margin of victory in the last election ($MARGIN$).⁴²

This model tests hypotheses about how the NRA allocates contributions. One argument is that the NRA should first determine a senator’s likely vote before determining what contribution, if any, to make to that senator’s campaign.⁴³ Contribution dollars should be most effective when given to candidates who are vacillating in their voting decision (i.e., candidates with $pBRADY$ values of approximately 0.5). Dollars contributed to candidates known to staunchly oppose gun control (candidates with $pBRADY$ values approaching zero) and candidates known to staunchly favor gun control (candidates with $pBRADY$ values approaching one) are unlikely to affect voting behavior. Hence, NRA contributions, if wisely allocated, should be highest for undecided candidates and low or zero for those candidates with known and firm positions. (Inclusion of the $pBRADYSQ$ variable allows determination of whether or not the NRA follows this strategy.)

Nevertheless, Langbein (1993) argues just the opposite on grounds that the NRA is a “membership group” that must respond to constituents’ preferences, especially on highly visible issues, to reward legislators who vote the NRA’s position and to withhold contributions from those

who do not. If Langbein's hypothesis is correct, NRA contributions should be a monotonically increasing function of pBRADY. In an analysis of the Firearms Owners Protection Act, Langbein finds that although the NRA did allocate some funds to pro-control House representatives, the vast majority of NRA contributions went to representatives securely in the NRA camp. If d_1 is positive and significant and d_2 is insignificantly different from zero, Langbein's hypothesis is supported. On the other hand, if d_1 is positive and significant and d_2 is negative and significant, the first hypothesis is supported.

In addition, contributions should be greater, all else equal, for candidates in close races, where additional funds may have a significant impact on the outcome of the race.⁴⁴

Ordinary Least Squares and Tobit estimates of equation (3) are shown in Table 3, where VCRIME is used as the crime variable to estimate a senator's probability of voting for the Brady Bill.⁴⁵ The estimates provide strong support for the first hypothesis presented. The positive and significant estimate of d_1 , and the negative and significant estimate of d_2 , indicate that when mapped against the probability of voting for the Brady Bill, NRA contributions follow an inverted-U pattern. Solving for the contribution-maximizing value of pBRADY yields a value of 0.35 for the OLS estimate and 0.37 for the Tobit estimate. Though these estimates are not exactly 0.5, they are close to the center of the political spectrum and may reflect the NRA's efforts to concentrate on candidates moderately opposed to gun control. The predictive power of equation (2) and the significance of the estimate of d_2 suggest the finding is not spurious. Perhaps the NRA changed strategies for the Brady Bill vote relative to the Firearms Owners Protection Act votes of seven years earlier. At a minimum, this result indicates that additional research into the allocation of funds by the NRA is needed.

Finally, every 10 percentage point difference in the victor's margin over his opponent reduced contributions by approximately \$640 to \$1,369, depending upon the estimate. The NRA clearly distinguishes close races, where contributions matter most, from races that are settled or races that could only be affected by enormous contributions.⁴⁶ As a whole, these results provide evidence that the NRA is a rational and efficient allocator of campaign funds.

VI. Why Did the Pro-Gun Lobby Lose?

The central task of this paper has been to determine and measure the factors that influenced senatorial votes on the Brady Bill. The Brady Bill vote is special, not only because it marked the most important gun-control vote since 1986, but also because the pro-gun forces (NRA) lost. Unfortunately, the analysis reveals little about the forces leading to passage of the Brady Bill, though it does yield valuable insight into the factors that worked (unsuccessfully) against its passage. Clearly, Democratic party affiliation and "liberal" ideology played pivotal roles in passing the Brady Bill, with Democratic party affiliation alone raising the probability of a vote for the Brady Bill by over 0.36. (To contrast, a \$1,000 contribution from the NRA reduced the probability of a vote for the Brady Bill by less than 0.04.) The Democratic party variable may capture the influence of politically active, pro-gun interests that are not identified in state average statistics. And the positive and significant coefficient on ADARESID may suggest that some senators voted in favor of the Brady Bill to impose their views of how to fight crime or how to form a "better society," even if their views differed from those of a majority of their constituents. Future political battles over gun control are virtually assured and will provide other examples to determine the important interests that drive political outcomes on this important and controversial issue.

VII. Politics and the Future of Gun Control

Predicting the future of the gun-control movement in the United States is hazardous. Early indications are that the Brady Bill is of dubious effectiveness. As reported in *Business Week*, the impending passage of the Brady Bill spurred countless Americans to *buy* guns. Legislation to ban some types of assault weapons produced an identical effect,⁴⁷ leading to the ironic result that legislation designed to reduce gun purchases may, in the short run, increase them. In addition, claims by President Clinton during the 1996 campaign that the Brady Bill had prevented 60,000 to 100,000 “felons, fugitives and stalkers” from obtaining handguns are clearly false.⁴⁸

Indeed, the climate may be shifting against control. Fear of crime is spurring many states to pass laws permitting citizens to carry concealed weapons. A crime-weary public, led in part by women, are supporting this legislation in the name of crime deterrence and self-defense. And, evidence from Florida and academic researchers indicates that concealed-carry laws do not increase gun violence.⁴⁹

Consistent with the ideas expressed in this paper, public opinion, reflected through elected legislators, will determine the ultimate outcome of gun-control legislation in the United States. So long as crime rates soar and ordinary citizens believe guns are an effective means of protection, the constitutional rights of gun owners will be, in large part, preserved.

References

- Ayoob, Massad F. (1981). The Experts Speak Out: The Police View of Gun Control. Second Amendment Foundation: 1-21.
- Bender, Bruce, and Lott, John R. Jr. (1996). Legislator Voting and Shirking: A Critical Review of the Literature. *Public Choice* 87: 67-100.
- Benson, Bruce L. (1984). Guns for Protection and other Private Sector Responses to the Fear of Rising Crime. In *Firearms and Violence: Issues of Public Policy*. Edited by Don B. Kates, Jr. Cambridge, Massachusetts: Ballinger Publishing Company, 225-258.
- Blackman, Paul H. (1990). Law Enforcement Lobbying and Policymaking on Gun Control. *Journal of Firearms and Public Policy* 3 (Summer): 29-56.
- Blackman, Paul H. and Gardiner, Richard E. (1986). The N.R.A. and Criminal Justice Policy: The Effectiveness of the National Rifle Association as a Public Interest Group. Institute for Legislative Action. National Rifle Association: 1-22.
- Bovard, James. (1996). Clinton's Gun Hoax. *Wall Street Journal* (September 17): A18(1).
- Carson, R.T. and Oppenheimer, J.A. (1984). A Method of Estimating the Personal Ideology of Political Representatives. *American Political Science Review* 78 (March): 163-178.
- DeFronzo, James. (1979). Fear of Crime and Handgun Ownership. *Criminology* 17 (November): 331-339.
- Eskridge, Chris W. (1986). Zero-Order Inverse Correlations between Crimes of Violence and Hunting Licenses in the United States. *Sociology and Social Research* 71 (October): 55-57.
- Geisel, Martin S., Roll, Richard, and Wettick, R. Stanton Jr. (1969). The Effectiveness of State and Local Regulation of Handguns: A Statistical Analysis. *Duke Law Journal* 4: 242-272.
- Goff, Brian L., and Grier, Kevin B. (1993). On the (Mis)measurement of Legislator Ideology and Shirking. *Public Choice*. 76: 5-20.
- Green, Gary S. (1987). Citizen Gun Ownership and Criminal Deterrence: Theory, Research, and Policy. *Criminology* 25: 63-81.
- Grier, Kevin B., and Munger, Michael C. (1993). Comparing Interest Group PAC Contributions to House and Senate Incumbents, 1980-86. *Journal of Politics*. 55 (August): 615-643.
- Home on the Range. (1994). *The Economist* (March 26): 23-24, 28.
- Idelson, Holly. (1993). Gun Rights and Restrictions: The Territory Reconfigured. *Congressional Quarterly* (April

- 24): 1021-1026.
- Kates, Don B. Jr. (1991). The Value of Civilian Handgun Possession as a Deterrent to Crime or a Defense Against Crime. *American Journal of Criminal Law* 18: 113-167.
- Kelly, Raymond. (1993). Toward a New Intolerance: Gun Control and Community Policing. *Vital Speeches* 59 (March 15): 332(3).
- Kime, Roy Caldwell. (1993). IACP's Deep Involvement in the Legislative Process. *The Police Chief* 60 (October): 14(1).
- Kleck, Gary. (1995). Guns and Violence: An Interpretive Review of the Field. *Social Pathology* 1 (January): 12-47.
- Kleck, Gary, and Patterson, E. Britt. (1993). The Impact of Gun Control and Gun Ownership Levels on Violence Rates. *Journal of Quantitative Criminology* 9: 249-287.
- Kopel, David B. (1993). Peril or Protection? The Risks and Benefits of Handgun Prohibition. *Saint Louis University Public Law Review* 12: 285-359.
- Langbein, Laura. (1993). PACs, Lobbies, and Political Conflict: The Case of Gun Control. *Public Choice*. 77: 551-572.
- Langbein, Laura, and Lotwis, Mark A. (1990). The Political Efficacy of Lobbying and Money: Gun Control and the U.S. House, 1986. *Legislative Studies Quarterly*. 15 (August): 413-440.
- Lott, John R., and Mustard, David B. (1997). Crime, Deterrence, and Right-to-Carry Concealed Handguns. *Journal of Legal Studies*. 26: 1-68.
- Magaddino, Joseph P. and Medoff, Marshall H. (1984). An Empirical Analysis of Federal and State Firearm Control Laws. In *Firearms and Violence: Issues of Public Policy*. Edited by Don B. Kates, Jr. Cambridge, Massachusetts: Ballinger Publishing Company, 225-258.
- Martin, Justin. (1994). Johnny Rushes to Get His Gun. *Fortune* 129 (January 10): 16(1).
- McAneny, Leslie. (1993). Americans Tell Congress: Pass Brady Bill, Other Tough Gun Laws. *The Gallup Poll Monthly* (March): 2(4).
- Polsby, Daniel D. (1986). Reflections on Violence, Guns, and the Defensive Use of Lethal Force. *Law and Contemporary Problems* 49: 89-111.
- President Signs 'Brady' Gun Control Law. (1993). *1993 Congressional Quarterly Almanac*: 300-303.
- Reynolds, Morgan O. and Caruth, W.W. III. (1992). Myths about Gun Control. National Center for Policy Analysis. NCPA Policy Report No. 176: 1-34.
- Shiflett, Dave. (1995). Have Gun, Will Eat Out. *Wall Street Journal* (February 28): A20(1).
- Smart, Tim, Yang, Catherine, and Seemuth, Mike. (1993). Ready, Aim . . . *Business Week* (December 27): 34-35.
- Witkin, Gordon. (1994). New Support for Concealed Weapons: Fear of Crime Inspires Liberalized Laws. *U.S. News & World Report* 117 (November 28): 56(3).
- Wright, James D. (1984). The Ownership of Firearms for Reasons of Self-Defense. In *Firearms and Violence: Issues of Public Policy*. Edited by Don B. Kates, Jr. Cambridge, Massachusetts: Ballinger Publishing Company, 301-327.
- Ziegenhagen, Eduard A. and Brosnan, Dolores. (1985). Victim Response to Robbery and Crime Control Policy. *Criminology* 23: 675-695.

Appendix: Data Sources

- Votes on Brady Bill: *1993 Congressional Quarterly Almanac*, p. 51-S.
- Political Party: *1993 Congressional Quarterly Almanac*, p. 51-S.
- ADA Ratings: *Almanac of American Politics*, various issues.
- Electoral Margins: *Almanac of American Politics*, various issues.
- Consumer Price Index: *1996 Economic Report of the President*, Table B-56, p. 343.
- Violent Crime Rate: *Crime State Rankings 1994: Crime in the 50 United States*, Kathleen O'Leary Morgan, Scott Morgan, and Neal Quitno, editors. Morgan Quitno Corp., 1994, p. 283.
- Murder Rate: *Crime State Rankings 1994: Crime in the 50 United States*, Kathleen O'Leary Morgan, Scott Morgan, and Neal Quitno, editors. Morgan Quitno Corp., 1994, p. 289.
- Murder with Handgun Rate: *Crime State Rankings 1994: Crime in the 50 United States*, Kathleen O'Leary Morgan, Scott Morgan, and Neal Quitno, editors. Morgan Quitno Corp., 1994, p. 295.
- Rural Population: *Crime State Rankings 1994: Crime in the 50 United States*, Kathleen O'Leary Morgan, Scott

Morgan, and Neal Quitno, editors. Morgan Quitno Corp., 1994, p. A5.
 State Population: *Crime State Rankings 1994: Crime in the 50 United States*, Kathleen O'Leary Morgan, Scott Morgan, and Neal Quitno, editors. Morgan Quitno Corp., 1994, p. A1 for 1992 figures, p. A2 for 1990 figures.

Hunting License Revenues: *Gale State Rankings Reporter*, Table 87, p. 49.

State and Local Government Full-Time Equivalent Police Employment: *Sourcebook of Criminal Justice Statistics 1994*, Table 1.27, pp. 34-38.

NRA Contributions: Federal Election Commission, Committee Index of Candidates Supported/Opposed (D)

HCI Contributions: Federal Election Commission, Committee Index of Candidates Supported/Opposed (D)

Name	N	Mean	Std. Dev.	Minimum	Maximum
BRADY	98	0.633	0.485	0.000	1.000
VCRIME	98	565.35	288.82	85.30	1,207.2
MURDER	98	7.038	3.856	0.600	17.400
MUHGUN	96	3.282	2.408	0.000	10.380
RURAL	98	315.92	146.50	73.56	678.51
HUNTREV	98	\$3,604	\$4,935	\$92	\$27,893
POLICE	98	2.646	0.453	1.667	3.968
NRA	98	\$3,725	\$7,427	-\$28,718	\$51,136
HCI	98	\$491	\$1,289	-\$56	\$6,886
PARTY	98	0.551	0.500	0.00	1.00
ADA	98	52.01	33.92	2.50	99.00
MARGIN	98	22.94	20.60	0.00	100.00

Variable Name	Coefficient/ (t-statistic)	Partial Effect	Coefficient/ (t-statistic)	Partial Effect
VCRIME	-0.00222 (-1.420)	-0.00045	-0.00280 (-1.974) *	-0.00055
RURAL	-0.00348 (-1.319)	-0.00070	-0.00275 (-1.090)	-0.00054
HUNTREV	-0.000245 (-2.356) **	-0.000049	-0.000247 (-2.473) **	-0.000049
POLICE	-0.880 (-0.824)	-0.177		
NRA	-0.000188 (-2.259) **	-0.000038	-0.000183 (-2.251) **	-0.000036

HCI	0.000359 (0.784)	0.000072	0.000341 (0.743)	0.000067
PARTY	1.854 (2.649) **	0.373	1.850 (2.644) **	0.364
ADARESID	0.847 (2.612) **	0.170	0.840 (2.632) **	0.165
CONSTANT	6.0219 (1.935) *		3.833 (2.499) **	
L.R. Test	58.616***		57.940***	
R-square	0.455		0.450	
Percent Correct	85.7		86.7	
N	98		98	

* Significant at the 10 percent level or greater for a two-tail test.

** Significant at the 5 percent level or greater for a two-tail test.

*** Significant at the 1 percent level or greater for a one-tail test.

Table 3. Regression Results with NRA Contributions as the Dependent Variable	
Variable Name	Coefficient / (t-statistic)
pBRADY	17,460 (1.931) *
PBRADYSQ	-24,940 (-3.050) ***
MARGIN	-64.05 (-1.941) *
CONSTANT	6,773 (3.345) ***
Adj. R-square = 0.237	
F-statistic = 11.028	

* Significant at the 10 percent level or greater for a two-tail test.

*** Significant at the 1 percent level or greater for a two-tail test.

Table 3A. Regression Results with NRA Contributions as the Dependent Variable

	OLS	Tobit
Variable	Coefficient/ (t-statistic)	Regression Coefficient/ (asymptotic normal statistic)
pBRADY	17,460 (1.931)*	35,138 (2.988)***
pBRADYSQ	-24,940 (-3.050)***	-48,110 (-4.282)***
MARGIN	-64.05 (-1.941)*	-136.94 (-2.770)***
CONSTANT	6,773 (3.345)***	5,713 (2.242)**
Adj. R-square = 0.237		
F-statistic = 11.028		

* Significant at the 10 percent level or greater for a two-tail test.

** Significant at the 5 percent level or greater for a two-tail test.

*** Significant at the 1 percent level or greater for a two-tail test.

Table 4. Regression Results with Murder Rate as Independent Variable

Variable Name	Coefficient/ (t-statistic)	Partial Effect	Coefficient/ (t-statistic)	Partial Effect
MURDER	-0.149 (-1.576)	-0.03006	-0.180 (-1.993) *	-0.03569
RURAL	-0.00257 (-0.981)	-0.00052	-0.00113 (-0.505)	-0.00022
HUNTREV	-0.000251 (-2.357) **	-0.000051	-0.000245 (-2.469) **	-0.000049
POLICE	-1.062 (-1.058)	-0.214		
NRA	-0.000179 (-2.108) **	-0.000036	-0.000177 (-2.144) **	-0.000035
HCI	0.000352 (0.771)	0.000071	0.000320 (0.703)	0.000063

PARTY	1.846 (2.674) ***	0.372	1.808 (2.634) **	0.358
CONSTANT	5.994 (1.918) *		3.001 (2.439) **	
L.R. Test	59.072		57.949	
R-square	0.458		0.450	
Percent Correct	85.7		84.7	
N	98		98	

* Significant at the 10 percent level or greater for a two-tail test.

** Significant at the 5 percent level or greater for a two-tail test.

*** Significant at the 1 percent level or greater for a two-tail test.

Variable Name	Coefficient/ (t-statistic)	Partial Effect	Coefficient/ (t-statistic)	Partial Effect
MUHGUN	-0.223 (-1.410)	-0.0469	-0.284 (-1.849) *	-0.0582
RURAL	-0.00369 (-1.361)	-0.00077	-0.00181 (-0.799)	-0.00037
HUNTREV	-0.000254 (-2.258) **	-0.000053	-0.000243 (-2.389) **	-0.000050
POLICE	-1.305 (-1.296)	-0.274		
NRA	-0.000178 (-2.111) **	-0.000037	-0.000176 (-2.148) **	-0.000036
HCI	0.000340 (0.736)	0.000071	0.000293 (0.652)	0.000060
PARTY	1.954 (2.737) ***	0.410	1.904 (2.686) ***	0.390
ADARESID	0.762 (2.359) **	0.160	0.734 (2.353) **	0.150
CONSTANT	6.515 (2.038) **		2.732 (2.373) **	
L.R. Test	58.413		56.717	
	0.460		0.447	
Percent Correct	83.3		85.4	
N	96		96	

* Significant at the 10 percent level or greater for a two-tail test.

** Significant at the 5 percent level or greater for a two-tail test.

*** Significant at the 1 percent level or greater for a two-tail test.

Endnotes

I thank professors Joseph Olson and Donald B. Kates for inviting me to participate in a conference on the second amendment sponsored by Academics for the Second Amendment in Orlando, Florida in October 1995. I thank Academics for the Second Amendment for supporting

my participation in this conference. I also thank Donald J. Boudreaux, David Laband, Joe McGarrity, and Daniel Sutter for helpful comments on an earlier draft. I am responsible for any remaining errors.

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1. See "Home on the Range," *The Economist*, March 26, 1994, p. 23.
 2. For research indicating that gun-control laws can reduce crime, see Geisel, Roll, and Wettick (1969), who estimate that if the gun-control laws of New Jersey had been applied nationally in 1965, 2,000 to 3,000 lives would have been saved. On the other hand, Magaddino and Medoff (1984) find that neither state nor federal gun-control laws reduce crime. Perhaps the best study is by Kleck and Patterson (1993) who find "most gun restrictions appear to exert no significant negative effect on total violence rates" (p. 275). The most important contribution since Kleck and Patterson has been by Lott and Mustard's (1997) detailed study of concealed-carry laws. They conclude that laws permitting concealed carry are highly effective deterrents to violent crime.
 3. Bender and Lott (1986) provide a thorough review of this literature.
 4. For additional details on the legislative background and political wrangling that led to passage of the Brady Bill, see "President Signs 'Brady' Gun Control Law," *1993 Congressional Quarterly Almanac*, pp. 300-303.
 5. Survey evidence reveals great temperance by Americans on questions of gun control. For example, *Gallup* reported that 88 percent of Americans, including 57 percent of gun owners, supported the Brady Bill. (See *The Gallup Poll Monthly*, March 1993, n330, p. 2(4).) Nevertheless, these same polls "demonstrate no decline since the 1950s in Americans' desire to own guns." (See Tim Smart, Catherine Yang, and Mike Seemuth, "Ready, Aim . . ." *Business Week*, December 27, 1993, pp. 34-35.) Similarly, *The Economist* reports that "[f]ully 80% of Americans (including about 60% of the 3.3 million members of the NRA) now favour some sort of restrictions on guns; [yet] fewer than 30% support a ban." (See "Home on the Range," *The Economist*, March 26, 1994, pp. 24, 28.)
 6. See Benson (1984) for a thorough discussion of this point.
 7. See, for example, Polsby (1986) and Green (1987).
 8. See Green (1987), who cites this evidence originally reported by Kleck and Bordua.
 9. For additional details, see Green (1987), pp. 72-76 and Kates (1991), pp. 153-155. For an account of the effects of handgun confiscation, see Kopel's (1993) discussion of the Jamaican experience, where crime rates rose dramatically.
 10. See Wright (1984).
 11. This estimate is based on the 1980 U.S. population, implying a significant underestimate of current defensive handgun use.
 12. Not all researchers agree with these findings. For example, DeFronzo (1979) concludes that fear of crime does not cause handgun ownership. This finding is difficult to interpret, however, because DeFronzo also concludes that handgun ownership reduces fear of crime. Apparently, handgun purchasers are not motivated by a fear of crime *before* their purchase, but gain considerable peace of mind *after* their purchase.
 13. See Reynolds and Caruth's (1992) citation of the seminal work by Wright and Rossi.
 14. See Kates (1991), p. 144.
 15. See Kleck (1995) for additional details.
 16. See Kleck (1995) p. 14. For evidence that hunting license rates are uncorrelated or negatively correlated with rates of violent crime, see Eskridge (1986).
 17. See Kleck (1995), p. 14.
 18. Editor's Note: The equations in this paper are normally written with Greek letters (alpha, beta, etc.). The printed version of this article uses the nearest English letter equivalent. For example, a lowercase "a" is used for alpha, an uppercase "B" for beta, etc.
 19. Violent crimes include murder, forcible rape, robbery, and aggravated assault.
 20. The figure includes contributions to and expenditures on behalf of a given senator. Independent expenditures against a senator are entered as negative amounts.
 21. The ADA is an interest group promoting traditionally "liberal" causes. High ADA ratings indicate a senator is to the "left" of the political center.
 22. Some researchers question the use of state average characteristics as determinants of senatorial voting on grounds that different senators from the same state may serve different constituencies. That different senators from the same state can display markedly different political preferences and voting patterns is readily observed. Goff and Grier (1993) find evidence that more diverse states are likely to elect senators with different political preferences and voting patterns, as

measured by differences in their ADA scores. Nevertheless, the most statistically significant determinant of differences in ADA scores is political party affiliation. Goff and Grier find that when senators from the same state are of the same political party, the difference between their ADA scores narrows by 22-24 points. Since political party alone indicates the constituency served and accounts for much of the measured differences in senatorial voting patterns, the estimates reported in this paper should not be adversely affected by inclusion of state averages for other variables.

23. As shown in Table 1, data are for 98 observations. Senator Dorgan (D-ND) is omitted because he did not vote on the Brady Bill, and Senator Matthews (D-TN), who filled the seat held by Al Gore, is omitted because no ADA data are available.

24. See Wright (1984).

25. See Blackman (1990) for a thorough discussion of police lobbying on gun control legislation.

26. See Kime (1993) and Kelly (1993).

27. See Idelson (1993). Langbein and Lotwis document that the Fraternal Order of Police, National Sheriffs Association, National Troopers Coalition, and the International Association of Chiefs of Police opposed the Firearms Owners Protection Act.

28. NRA membership by state is a logical variable to include in the model; however, the NRA denied my request for these data.

29. See Idelson (1993).

30. Blackman and Gardiner (1986) provide an interesting and thorough discussion of *why* the NRA has had such remarkable political success.

31. See Idelson (1993), p. 1026.

32. This procedure for determining ideology was pioneered by Carson and Oppenheimer (1984) and has been widely employed, despite some criticisms. See Bender and Lott (1996), pp. 69-73 and pp. 79-80.

33. The zero-order correlation coefficient between POLICE and VCRIME is 0.531.

34. Because the logit model is nonlinear, the derivative (partial effect) of any independent variable is not constant and is calculated as $ap(1-p)$, where a is the estimated coefficient and p is the forecasted value of the dependent variable. The derivative (partial effect) presented in the tables is calculated using a value of \bar{p} that is calculated with all independent variables at their means.

35. The likelihood ratio test is calculated as $2[L(a) - L(0)]$ where $L(\cdot)$ designates the likelihood function. The reported R-square is the McFadden R-square and is calculated as

$1 - [L(a)/L(0)]$.

36. The reported partial coefficient cannot be interpreted linearly. Because ADA ratings are constrained to values between zero and 100, they must be converted to decimal form and transformed to $\ln(\text{ADA}/(1-\text{ADA}))$ before estimation by OLS. To convert forecasted values of the transformed variable into actual ADA ratings, e must be raised to the power of the forecasted transformed variable and this value must be set equal to $\text{ADA}/(1-\text{ADA})$. For example, if the forecasted value of the transformed variable is zero, solving for the actual ADA rating yields a value of 0.50 (or 50). The effect of the residuals upon the dependent variable depends upon actual and forecasted values of ADA, but the relationship is not linear. For example, if the forecasted value of the transformed variable is zero, but the actual value of the transformed variable is one, the senator's forecasted ADA rating is 50, but his actual ADA rating is 73. Thus, a senator with an ADA rating 23 points above his forecast is more likely to vote for the Brady Bill by a factor of approximately 0.16. However, if the predicted value of the transformed variable is one (so the predicted ADA rating is 73), but the actual transformed variable is two, the forecasted ADA rating is 88, meaning that an ADA rating only 15 points above its forecasted value is sufficient to raise the probability a senator voted for the Brady Bill by 0.16. Consequently, the effect of the ADA residuals on the probability a senator will vote for the Brady Bill is not a linear function.

37. These results are broadly consistent with those reported by Langbein and Lotwis in their analysis of House votes on the 1986 Firearms Owners Protection Act. Specifically, Langbein and Lotwis find that district population density, a crime proxy, and *state* rates of violent crime (note that examining *representative* votes using *state* data is problematic) are insignificant. Their examination of campaign contributions reveals that both NRA and HCI contributions are significant, the later finding being inconsistent with the results reported in this paper. However, like me, they find that the coefficient on HCI contributions is greater than that of NRA contributions. With respect to ideology, Langbein and Lotwis find that Congressional Quarterly's Conservative Coalition scores are significant, though they find party affiliation insignificant. These results are consistent with my own since I find ADA residuals to be significant. Further, since I enter party

affiliation in the equation for the ADA residuals, my measure of ideology is not intermingled with party, as is the case with the Langbein-Lotwis estimates, where collinearity between party and Conservative Coalition scores is likely high. To capture a “hunting gun culture,” Langbein and Lotwis use several constituent characteristics, such as percent of population living in rural areas, median income levels, and percent of population that are veterans, which are significant. Although my rural population variable is insignificant, the hunting revenue variable is significant. Finally, the Langbein-Lotwis finding that police contacts with representatives were effective is contrary to my finding that the number of police per capita does not affect voting.

38. The sample for the regression using murders by handguns (MUHGUN) is only 96 because Maine did not report murders by category of weapon. Consequently, the observations for Senator Mitchell (D) and Senator Cohen (R) are omitted from this estimate.

39. The complete results may be obtained from the author upon request.

40. Many opponents of the Brady Bill perceived it as inconsequential in and of itself, but saw it as a first step down a “slippery slope” towards more stringent gun-control measures.

41. Even with NRA contributions omitted, equation (2) predicts well, correctly forecasting the votes of 79 of 98 senators.

42. Grier and Munger (1993) model corporate, labor union, and trade association contributions to members of congress in the House and Senate. They find that for senators, seniority is never significant and that committee assignments are rarely significant. In unreported regressions, I add membership on the Senate Judiciary Committee, which handles crime bills, and seniority to equation (3). Neither variable is significant.

43. The model is recursive. The predicted vote from equation (2) (which omits NRA contributions) is used in equation (3) to forecast the NRA contribution received by each senator.

Arguably, equations (1) and (3) should be estimated simultaneously by two-stage least squares regression or some other estimation technique that accommodates systems of equations, if votes are a function of contributions and contributions are, in turn, a function of votes. Nevertheless, a simultaneous technique is inappropriate if, as I argue, contributions are a function of *predicted* votes rather than *actual* votes. That is, contributions determine *actual* votes, but *predicted* votes determine contributions. Since actual and predicted votes are not the same, the equations should not be estimated simultaneously. Indeed, all NRA contributions were received before 1993 (some dating back to 1988), casting doubt on any simultaneous determination of *past* contributions by 1993 senatorial votes.

Langbein and Lotwis also assume a unidirectional relation between campaign contributions and votes, and argue that because they “examine the impact of prevote contributions on the vote and assume that events occurring after cannot cause events occurring before, we do not use simultaneous equation techniques for parameter estimation” (p. 435).

Like Langbein and Lotwis, I argue unidirectional causality is correct not only because contributions preceded votes but also because it is unlikely that contributions could be a reward for prior votes. The last federal gun-control legislation, the Firearms Owners Protection Act, passed seven years earlier, and at that time 38 of the 98 senators in this sample were not even in the Senate. A “Brady Bill” was part of the 1992 omnibus crime package, but was not voted on separately, so an analysis of the 1992 crime bill would not yield a “pure” vote on its Brady Bill component.

Finally, simultaneous estimation is problematic for two reasons. First, the logit model is nonlinear and two-stage least squares regression is linear. Second, the variable pBRADY is a monotonically increasing function of NRA contributions, but NRA contributions may not be a monotonically increasing function of pBRADY. For all these reasons, equation (1) is estimated as a single equation.

44. Blackman and Gardiner (1986) note the NRA is especially likely to support “friends who need particular help in tight races” (p. 9).

45. Since contributions *against* a senator are included in the model, the OLS estimates may be appropriate. On the other hand, the NRA spent money against only three (winning) senators, and 41 senators received nothing from the NRA, indicating the Tobit analysis may be more appropriate. As shown in Table 3, the results are qualitatively identical, regardless of the estimation method, though the (absolute values of the) coefficients are greater with the Tobit estimate.

46. Grier and Munger find MARGIN to be a significant determinant of union contributions, but not a significant determinant of corporate or trade association contributions.

47. See Martin (1994).

48. See Bovard (1996) for details.

49. See Witkin (1994) and Shiflett (1995) for details of Florida’s experience with concealed-carry laws. Academic researchers Lott and Mustard present evidence that if all states had concealed-carry laws, 1,500 murders, 4,000 rapes,

11,000 robberies, and 60,000 aggravated assaults would be prevented each year.