

# **SUPPLEMENTAL MATERIALS:**

## **ARE VOTERS BETTER REPRESENTED?**

John D. Griffin  
University of Notre Dame  
*John.Griffin@nd.edu*

Brian Newman  
Pepperdine University  
*Brian.Newman@pepperdine.edu*

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### Additional Analyses

This section outlines additional analyses referred to in the text. First, a reviewer requested that we re-estimate the models reported in Table 1, controlling for various state demographic characteristics that are related to nonvoting, including the percentage of the state that was African American, percent racial minority, the state per capita income, and the median state age, all in 1990. As shown in Table R-1, even when controlling for these factors, voters' preferences are reflected in Senators' roll call votes, but nonvoters' preferences are not.

**Table R-1: Effect of Voter and Nonvoter Ideology on Senator Roll Call Voting**

	(1)	(2)
Voter Ideology	.65* [.09]	---
Nonvoter Ideology	-.16 [.10]	---
Voter Ideology – Nonvoter Ideology	---	.42* [.08]
Republican	.65* [.02]	.66* [.02]
State Percent African American	-.23 [.28]	.01 [.29]
State Percent Racial Minority	.95* [.28]	.79* [.29]
State Per Capita Income	-.01* [.01]	-.03* [.01]
State Median Age	.01 [.01]	-.01 [.01]
Constant	-2.6* [.69]	.38 [.29]
R <sup>2</sup>	.81	.79
N	248	248

Cell entries are OLS estimates. Bracketed entries are standard errors.

\* denotes  $p < .05$ .

Table R-2 reports estimation results which test alternative interpretations of the findings in Table 1. The text following Table 1 in the main body summarizes the results of these estimations. The results first indicate that our findings are not merely an artifact of citizens responding to their Senators' roll call votes (see column 2). When modeling only votes from Senators' first terms, effectively purging the model of reciprocal effects, voter ideology predicts roll call voting, but nonvoter ideology does not. We should note that, as in Table 1, the nonvoter ideology coefficient in column 1 is negative, so accounting for measurement error makes the estimate even more strongly negative. In addition, since we use ideology measures pooled until the study before a Senator's first term, which is different across Senators, we cannot estimate the reliability of the ideology measures. However, we estimated several errors-in-variables regressions assuming different reliability levels for nonvoter ideology ( $.4 \leq r \leq .8$ ) and found that Senators were always only responsive to voters.

In addition, the results in columns 3 and 4 indicate that our results are not just an artifact of Senators' greater responsiveness to their co-partisans. First, as column 3 shows, even among each Senator's co-partisans, voters are better represented. In fact, like nonvoters at large, Senators do not respond to their nonvoting constituents at all, even when they identify with the Senators' party. Since Senators from the same state but different parties will have different co-partisans, we cannot measure the reliability of the co-partisan ideology measures. To probe our results' sensitivity to measurement error, we estimated several errors-in-variables regressions assuming different reliability levels for co-partisan nonvoter ideology ( $.5 \leq r \leq .8$ ) and found that Senators only responded to co-partisan voters across this spectrum.

Second, we modeled co-partisan and voter ideology together to see whether what appears to be responsiveness to voters is really just responsiveness to co-partisans (the correlation

between voter ideology and co-partisan ideology is .58). Although co-partisan ideology is strongly related to Senator voting scores, voter ideology remains significantly related to Senator voting scores as well (see column 4). Note that the model in column 4 excludes Senator party. Since Republicans (Democrats) will have conservative (liberal) co-partisans, party and co-partisan ideology are highly correlated ( $r = .90$ ). When controlling for party, co-partisan ideology has no additional effect (see column 5). Whether controlling for Senator party or not, the most important finding for our purposes is voter ideology's continued significance. Senators seem to be responding to voter ideology, not just the ideology of their co-partisans.

**Table R-2: Addressing Alternative Explanations for Voter Overrepresentation**

<i>GSS Data</i>	<i>1974-1990</i>	<i>Pre-First Term</i>	<i>1974-2000</i>		
<i>Roll Call Data</i>	<i>1990-2002 Mean</i>	<i>1984-2002 First Term</i>	<i>1974-2000 Mean</i>		
	(1)	(2)	(3)	(4)	(5)
Voter Ideology	.38* [.10]	.61* [.16]	---	.41* [.10]	.65* [.09]
Nonvoter Ideology	-.02 [.10]	.19 [.16]	---	-.43* [.11]	-.12 [.10]
Republican	.72* [.03]	.63* [.05]	.25* [.06]	---	.56* [.07]
Co-partisan Ideology	---	---	---	.73* [.03]	.10 [.08]
Co-partisan Voter Ideology	---	---	.42* [.07]	---	---
Co-partisan Nonvoter Ideology	---	---	.02 [.06]	---	---
Constant	-1.90* [.33]	-4.20* [.69]	-1.98* [.25]	-3.09* [.35]	-2.95* [.31]
R <sup>2</sup>	.82	.75	.74	.72	.78
N	142	91	248	248	248

Cell entries are OLS estimates. Bracketed entries are standard errors. \* denotes  $p < .05$ .

Next, as stated in note 12, we ran a parallel analysis using measures of voter and nonvoter ideology from the SES (see Table R-3). We use SES data to model roll call behavior in the Congress immediately following each wave of the survey (1988 data for the 101<sup>st</sup> Senate, 1990 for the 102<sup>nd</sup>, and 1992 for the 103<sup>rd</sup>). Note that we use W-NOMINATE scores to measure Senator roll call behavior in these estimations. W-NOMINATE coordinates are compiled using each Senator's votes in a given year, and thus are appropriate for these year-by-year analyses. As when using GSS data, voter ideology predicts roll call behavior, but nonvoter ideology does not. These consistent results across two datasets strongly suggest that Senators respond more to voters than nonvoters when casting roll call votes.

**Table R-3: SES Models of Senator Responsiveness to Voters and Nonvoters**

<i>Senate</i>	<i>101<sup>st</sup></i>		<i>102<sup>nd</sup></i>		<i>103<sup>rd</sup></i>	
Voter Ideology	.32*	---	.31*	---	.23*	---
	[.07]		[.07]		[.05]	
Nonvoter Ideology	.00	---	.01	---	.01	---
	[.05]		[.06]		[.03]	
Voter Ideology – Nonvoter Ideology	---	.10*	---	.12*	---	.05
		[.05]		[.05]		[.03]
Republican	.92*	.91*	.97*	.96*	1.00*	1.02*
	[.05]	[.05]	[.05]	[.05]	[.04]	[.05]
Constant	-2.0*	-.54*	-2.1*	-.65*	-1.70*	-.68*
	[.34]	[.03]	[.40]	[.03]	[.27]	[.03]
R <sup>2</sup>	.81	.77	.81	.79	.86	.84
N	100	100	102	102	101	101

Standard errors in brackets. \* denotes  $p < .05$ . Number of Senators may exceed 100 due to replacement.

In addition to looking at overall patterns of voting, we examined whether specific votes Senators cast on abortion policy are more responsive to voter preferences. These analyses provide additional evidence that Senators disproportionately respond to voters' preferences. We

examined roll call votes that the National Right to Life Committee (NRLC) and Congressional Quarterly identified as Key Votes on abortion (full vote descriptions available from authors). We estimated probit models of these roll call votes as a function of mean voter and nonvoter abortion attitudes (NRLC's website only identified key votes as far back as the 105<sup>th</sup> Congress). These attitudes were measured by averaging GSS responses to six abortion questions: whether abortion should be permitted to protect the health of a mother, if a mother is married and does not want more children, in the case of rape, if a mother cannot afford the child, if the child has a birth defect, and if a mother would be a single parent (Brace et al. 2002). For CQ votes, we used parallel questions from the SES (available from authors on request). To be sure cause (abortion attitudes) precedes effect (Senators' votes) we averaged the responses from 1973-1996 to model votes in the 105<sup>th</sup> Congress, from 1973-1998 for the 106<sup>th</sup> Congress, from 1973-2000 for the 107<sup>th</sup> Congress, and from 1973-2002 for the 108<sup>th</sup> Congress. We distinguished voter from nonvoter abortion attitudes by using self-reports of presidential election turnout; both are reliable state-level measures (reliability coefficients ranged from .94 to .95 for voters and .90 to .91 for nonvoters). The NRLC coded all roll calls so the most conservative position is 1 and the other 0, and we coded the abortion items to make higher values most conservative, so positive parameter estimates indicate positive responsiveness. We control for party affiliation whenever possible.

Voter opinion affected Senator voting in positive and statistically significant ways in 11 of 28 roll calls (see Table R-4). By comparison, Senators were responsive to nonvoter preferences only twice. Stated differently, Senators were *more often* responsive to voters' preferences concerning abortion, but were *not always* responsive even to voters' preferences. Thus, in many instances, Senators' votes on specific measures respond to voter opinion more than nonvoter opinion.

**Table R-4: Effect of Voter and Nonvoter Opinion on Key Senate Abortion Votes, 1989-2003**

<i>Roll Call Description, Date, and Number</i>	<i>Voter Opinion</i>	<i>Nonvoter Opinion</i>	<i>Republican</i>	<i>Constant</i>	<i>N</i>
<i>Using SES Measures</i>					
<b>101<sup>st</sup> Senate</b>					
Abortion/Parental Notification October 12, 1990	3.11* [1.20]	-0.33 [0.98]	1.59* [0.31]	-5.66* [2.05]	95
<b>102<sup>nd</sup> Senate</b>					
Fetal Tissue Research March 31, 1992	2.89* [1.24]	.16 [1.04]	1.76* [0.38]	-7.36* [2.29]	100
Abortion Counseling October 1, 1992	3.92* [1.32]	0.55 [1.09]	2.16* [0.44]	-10.18* [2.56]	99
<b>103<sup>rd</sup> Senate</b>					
Abortion Clinic Access May 12, 1994	1.64 [1.07]	-.02 [0.85]	2.02* [0.37]	-4.53* [2.25]	99
<i>Using GSS Measures</i>					
<b>105<sup>th</sup> Senate</b>					
Foreign Population Assistance February 25, 1997, Roll Call 13	15.25* [6.50]	5.33 [4.12]	3.90* [0.88]	-34.44* [9.37]	88
Partial Birth Abortion Ban May 20, 1997, Roll Call 71	6.72 [3.76]	-0.46 [3.29]	2.22* [0.41]	-11.07* [3.84]	88
Child Health Insurance Program June 25, 1997, Roll Call 129	2.91 [3.62]	4.17 [3.29]	1.86* [0.34]	-12.08* [3.78]	88
Military Medical Facilities July 10, 1997, Roll Call 167	9.21 [6.05]	7.01 [4.17]	3.86* [0.83]	-28.22* [8.98]	87
Federal Employees' Health Insurance July 22, 1997, Roll Call 190	.19 [3.81]	4.43 [3.41]	2.32* [0.37]	-9.74* [3.76]	87
Fetal Tissue Research September 4, 1997, Roll Call 215	1.09 [3.26]	4.18 [3.06]	---	-7.52* [2.68]	86
State Department Authorization April 28, 1998, Roll Call 105	11.57 [6.34]	4.45 [4.15]	4.01* [0.88]	-28.04* [9.37]	88
Military Medical Facilities June 25, 1998, Roll Call 176	16.51* [8.21]	5.39 [4.39]	4.61* [1.18]	-36.99* [12.37]	82
Partial Birth Abortion - Veto Override September 18, 1998, Roll Call 277	6.72 [3.76]	-0.46 [3.29]	2.29* [0.41]	-11.07* [3.84]	88
Child Custody Protection Act	.92	3.07	3.46*	-10.84	87

September 22, 1998, Roll Call 282	[4.90]	[4.06]	[0.53]	[5.56]	
<b>106<sup>th</sup> Senate</b>					
Military Facility Ban	3.32	11.11*	4.20*	-26.47*	88
May 26, 1999, Roll Call 148	[6.42]	[5.64]	[0.90]	[10.59]	
Federal Employee Health Insurance	-3.62	13.05*	2.88*	-17.42*	86
July 1, 1999, Roll Call 197	[4.62]	[4.76]	[0.48]	[5.49]	
Roe v. Wade Endorsement	2.70	8.56	3.57*	-21.28*	87
October 21, 1999, Roll Call 336	[5.72]	[4.78]	[0.70]	[8.11]	
Roe v. Wade Endorsement	3.09	8.42	3.56*	-21.63*	86
October 21, 1999, Roll Call 337	[5.79]	[4.77]	[0.71]	[8.18]	
Fetal Tissue	8.07	7.95	4.08*	-28.52*	85
October 21, 1999, Roll Call 338	[6.51]	[5.10]	[.90]	[10.24]	
Partial Birth Abortion Act	3.06	6.36	2.60*	-15.81*	85
October 21, 1999, Roll Call 340	[3.76]	[3.50]	[0.56]	[4.66]	
Military Medical Facility Ban	9.10	5.10	4.08*	-25.89*	87
June 20, 2000, Roll Call 134	[6.18]	[4.25]	[0.90]	[10.45]	
<b>107<sup>th</sup> Senate</b>					
Military Medical Facilities	2.71	4.22	---	-9.68*	81
June 21, 2002, Roll Call 160	[3.09]	[2.93]		[2.99]	
<b>108<sup>th</sup> Senate</b>					
Partial Birth Abortion – Boxer Motion	14.41*	-1.69	3.61*	-21.99*	86
March 12, 2003, Roll Call 47	[6.11]	[4.63]	[0.70]	[6.99]	
Harkin Amendment	12.20*	2.40	2.93*	-24.38*	86
March 12, 2003, Roll Call 48	[5.97]	[4.77]	[0.57]	[7.46]	
Partial Birth – Feinstein Substitute	30.66*	-4.26	4.28*	-40.85*	83
March 12, 2003, Roll Call 49	[10.99]	[5.13]	[1.12]	[12.72]	
Partial Birth Abortion - Passage	13.23*	-0.82	2.60*	-19.63*	85
March 13, 2003, Roll Call 51	[4.70]	[3.75]	[0.57]	[5.09]	
Military Medical Facilities	12.02	1.87	3.51*	-24.16*	87
May 22, 2003, Roll Call 192	[6.36]	[5.04]	[0.66]	[8.32]	
Mexico City Policy	29.33*	1.77	5.91*	-52.35*	84
July 9, 2003, Roll Call 267	[10.46]	[6.56]	[1.64]	[16.28]	
Partial Birth Abortion	10.10*	0.63	2.40*	-17.30*	86
October 21, 2003, Roll Call 402	[4.18]	[3.58]	[0.53]	[4.54]	

Cell entries are probit coefficients. Standard errors in brackets. \* denotes  $p < .05$ .

Finally, as alluded to in the text on the selection hypothesis, we modeled the five measures of Senator ideology as a function of voter ideology, nonvoter ideology, and Senator party. If Senator ideology mediates the effect of voter ideology, voter ideology must be related to Senator ideology. As Table R-5 shows, this is true for four of five Senator ideology measures.

**Table R-5: Effect of Voter Ideology on Senator Ideology**

<i>Senator Ideology</i>	<i>SES</i>	<i>CBS/NYT</i>	<i>Levitt</i>	<i>Roll Call</i>	<i>HHS</i>
Voter Ideology	0.51* [0.22]	4.43* [1.63]	11.57* [2.27]	3.00* [1.00]	2.65 [1.94]
Nonvoter Ideology	0.19 [0.22]	-0.21 [1.59]	-2.61 [2.04]	-0.3 [0.90]	2.17 [1.93]
Republican	0.82* [0.08]	3.83* [0.58]	4.66* [0.64]	3.42* [0.33]	5.37* [0.69]
Constant	1.18 [0.74]	-14.57* [4.96]	-43.72* [9.39]	-8.82* [2.98]	-21.60* [6.35]
R <sup>2</sup>	0.64	0.55	0.66	0.72	0.51
N	82	57	50	61	80

Standard errors in brackets. \* denotes  $p < .05$ .