

Economic Inequality and Political Representation

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I examine the differential responsiveness of U.S. senators to the preferences of rich and poor constituents. My analysis includes broad summary measures of senators' roll call voting behavior as well as specific votes on the minimum wage, civil rights, government spending, and abortion. In every instance, senators appear to be much more responsive to the opinions of affluent constituents than to the opinions of constituents with modest incomes. On average, my estimates suggest that constituents at the 75th percentile of the income distribution have almost three times as much influence on senators' general voting patterns as those at the 25th percentile, and several times as much influence on specific salient roll call votes. The preferences of constituents near the top of the income distribution are even more influential, while those in the bottom fifth receive little or no weight, especially from Republican senators. In the domain of ideology the disproportional influence of affluent constituents seems partly attributable to their greater propensity to vote and to contact senators and their staffs; in the domain of abortion the impact of income does not seem to be mediated by turnout, contacting, or political knowledge, and may reflect the dependence of elected officials on campaign contributions from pro-choice and pro-life activists.

Economic Inequality and Political Representation¹

One of the most basic principles of democracy is the notion that every citizen's preferences should count equally in the realm of politics and government. But there are a variety of good reasons to believe that preferences are *not* counted equally by policy-makers in real political systems. Wealthier and better-educated citizens are more likely than the poor and less-educated to have well-formulated and well-informed preferences, significantly more likely to turn out to vote, much more likely to have direct contact with public officials, and vastly more likely to contribute money and energy to political campaigns – all characteristic differences that seem likely to produce greater responsiveness from elected politicians.

Economic and political developments in the contemporary United States have probably exacerbated long-standing inequalities in political influence. On one hand, the shape of the income distribution has changed markedly in the past two decades, with substantial gains in real income among those at the top outpacing much more modest gains in the middle and lower classes. For example, the average real income of the wealthiest one-fifth of American families increased by more than \$50,000 (more than 50 percent) between 1980 and 2000, while the average real income of the poorest one-fifth increased by less than \$1,000 (about six percent).² At the same time, the political resources and behaviors that seem likely to be associated with unequal influence in the political process have themselves, if anything, become more unequally distributed. For

¹ The research reported here was supported by a grant from the Russell Sage Foundation to the Princeton Working Group on Inequality. An earlier version of the analysis was presented at the Annual Meeting of the American Political Science Association, Boston, August 2002, and in colloquia at the University of Pennsylvania and Harvard University. I am grateful to those audiences – and especially to Christopher Achen, R. Douglas Arnold, Robert Bernstein, Benjamin Bishin, Christopher Jencks, and Ronald Weber – for helpful comments and suggestions, and to Gabriel Lenz for organizing the data for my analysis.

² These figures are calculated from the historical income data available at the U.S. Census Bureau's website, <http://www.census.gov/income/>, Table F-3.

example, the much-noted decline in electoral participation in the U.S. since the 1960s has been disproportionately concentrated among relatively poor and uneducated citizens.

Political scientists have devoted a great deal of energy to documenting disparities between rich and poor citizens in political resources and participation (for example, Verba, Nie, and Kim 1978; Wolfinger and Rosenstone 1980; Verba, Schlozman, and Brady 1995). That work seems to be inspired in significant part by the presumption that participation has important consequences for representation. As Verba, Schlozman, and Brady (1995, 14) put it, “inequalities in activity are likely to be associated with inequalities in governmental responsiveness.” It is striking, though, how little political scientists have done to *test* that presumption. For the most part, scholars of political participation have treated actual patterns of governmental responsiveness as someone else’s problem.

Meanwhile, statistical studies of political representation dating back to the classic analysis of Miller and Stokes (1963) have found strong connections between constituents’ policy preferences and their representatives’ policy choices in Congress (for example, Achen 1978; Bartels 1991; Stimson, MackKuen, and Erikson 1995). However, those studies have almost invariably treated constituents in an undifferentiated way, using simple averages of opinions in a given district or at a given point in time to account for representatives’ policy choices.³ Thus, they shed little or no light on the fundamental issue of political equality.

My aim here is to provide a more nuanced analysis of political representation in which the weight attached to constituents’ views in the policy-making process is allowed to depend upon those constituents’ politically relevant resources and behaviors – primarily upon their incomes, and secondarily upon a variety of other resources and behaviors that might mediate the relationship between income and political representation, including partisanship, political information, electoral turnout, and contact with public officials.

³ A rare exception is Rivers’ (n.d.) unpublished analysis of differential responsiveness to the views of political independents by comparison with incumbent- or opposition-party identifiers.

For incidental reasons of data availability, my research focuses on the responsiveness of U.S. senators in the late 1980s and early 1990s to the views of their constituents. Using both summary measures of senators' voting patterns and specific roll call votes on the minimum wage, civil rights, government spending, and abortion, I find that senators are vastly more responsive to the views of affluent constituents than to constituents of modest means. For example, constituents at the 75th percentile of the income distribution appear to have almost three times as much influence as those at the 25th percentile on senators' overall voting patterns, and several times as much influence on specific roll call votes. Constituents near the top of the income distribution have even more influence, while those near the bottom have little or none.

Model, Data, and Estimation

The basic model I use to examine political responsiveness is a regression model of the form

$$\{1\} \quad Y_k = \sum_{i \in k} [(\alpha + \beta W_i) X_i] / N_k + \gamma Z_k + \varepsilon_k,$$

where Y_k is an observed roll call vote (or summary of roll call votes) cast by senator k , N_k is the number of survey respondents from senator k 's state for whom data are available, X_i represents the opinion of a specific survey respondent i , $(\alpha + \beta W_i)$ is the weight attached to respondent i 's opinion (which may vary as a function of respondent i 's income level W_i), Z_k is a dummy variable indicating senator k 's party affiliation, ε_k is a stochastic term representing other influences on representative k 's legislative behavior, and α , β , and γ are constant parameters to be estimated.

The key parameters of the representative relationship in equation {1} are α , which reflects undifferentiated responsiveness to constituency preferences, and β , which reflects differential responsiveness to the preferences of affluent constituents.⁴ If we find, as we suspect, that β is greater than zero in this model, the implication is that money

⁴ On "responsiveness" as one important aspect of the relationship between representatives and their constituents, see Achen (1978).

talks in the representative process – that the preferences of less affluent constituents are systematically discounted on Capitol Hill.

The regression model in equation {1} is not intended to be a realistic causal model of legislative behavior. Obviously, a good many factors influence senators' roll call votes in addition to the senators' own partisanship and the policy preferences of their constituents. Nevertheless, the relationship between constituency opinion and legislative behavior in a reduced-form model of this sort is an important feature of the representative process in any democratic political system (Achen 1978), regardless of whether that relationship is produced by conscious political responsiveness on the part of legislators, selective retention of like-minded legislators by voters, shared backgrounds and life experiences, or other factors.

My data on constituency opinion come from the Senate Election Study conducted in 1988, 1990, and 1992 by the National Election Studies (NES) research team.⁵ The Senate Election Study was a national survey of 9,253 U.S. citizens of voting age interviewed by telephone in the weeks just after the November 1988, 1990, and 1992 general elections. Although some details of the sample design and questionnaire varied across the three election years, the basic design remained unchanged and a substantial core of questions was repeated in similar form in all three years. In the absence of any marked changes in constituency opinion across the three election years, I simply combine the responses from all three years to produce more precise estimates of state opinion.

An important virtue of the Senate Election Study design, for my purpose here, is that the sample was stratified to produce roughly equal numbers of respondents in each of the 50 U.S. states. Thus, whereas most national surveys include large numbers of respondents in populous states but too few respondents to produce reliable readings of opinion in less populous states, the Senate Election Study included at least 150 (and an average of 185) respondents in each of the 50 states.⁶ In addition, whereas most

⁵ Data and documentation are available from the NES website, <http://www.umich.edu/~nes>.

⁶ Erikson, Wright, and McIver (1993) and Park, Gelman, and Bafumi (2002) have pooled data from multiple surveys to provide more reliable estimates of state-level opinion, in the latter case with extensive post-stratification to mitigate problems with the samples employed in commercial telephone surveys.

commercial surveys include very few questions about specific political issues, the Senate Election Study included questions on general ideology, abortion, aid to blacks, and a variety of other issues.⁷ It also included a good deal of information about characteristics of respondents that might account for differences in their political influence, including not only income but also turnout and other forms of political participation, knowledge of senators and Senate candidates, and the like.

As is commonly the case with telephone surveys, the Senate Election Study sample significantly underrepresented young people, racial and ethnic minority groups, and the less-educated. Since these sample biases are especially problematic in a study of economic inequality, I post-stratified the sample within each state on the basis of education, race, age, sex, and work status. The post-stratification is described in the Appendix, and the resulting sample weights are employed in all my subsequent calculations. The resulting estimates of constituency opinion in each state for general ideology and abortion, unweighted and weighted by income, appear in Table A4 in the Appendix.

I use these data on constituents' opinions to account for the roll call votes of senators on a variety of issues that reached the Senate floor during the period covered by the Senate Election Study: the 101st (1989-90), 102nd (1991-92) and 103rd (1993-94) Congresses. I examine both summary measures of senators' ideological positions (Poole-Rosenthal W-NOMINATE scores) and their votes on salient roll calls related to the specific constituency opinions tapped in the Senate Election Study.

An obvious difficulty in estimating the parameters of the regression model in equation {1} is that the two key explanatory variables are, by their very construction,

⁷ My analysis here draws primarily on the ideology and abortion items, with a passing look at aid to blacks. Eventually, I hope to employ the battery of questions in the Senate Election Study asking respondents whether they would like to see increases or decreases in federal spending on a variety of specific programs, including "improving and protecting the environment," "public schools," "social security," "food stamps," "fighting the disease AIDS," "child care," "fighting the war on drugs," "defense spending," and "medical care." These items seem especially well-suited to a study of representation because they tap several of the specific issues that were voted on by Congress (and thus by individual senators representing the survey respondents) in these years. The extent to which legislators recognize and respond to issue-specific constituency opinion at this level of detail has received relatively little empirical attention; however, see Bartels (1991) on defense spending and Richardson (1997) on environmental policy.

strongly correlated. Each senator is assumed to be responsive both to unweighted constituency opinion ($\sum_{i \in k} X_i / N_k$, with parameter α) and to income-weighted constituency opinion ($\sum_{i \in k} W_i X_i / N_k$, with parameter β). But the same opinion X_i appears in both these expressions; constituents with conservative (liberal) unweighted opinions will also tend to have conservative (liberal) income-weighted opinions. At the individual level, the correlation between unweighted and income-weighted ideology in the Senate Election Study is .85. Aggregating the data to produce average unweighted and income-weighted opinions for each state exacerbates this problem; the correlation between unweighted and income-weighted state ideology is .94. As always, when two explanatory variables in a regression analysis are this highly correlated it will be quite difficult to distinguish their separate effects.

The strong correlation between unweighted opinion and income-weighted opinion at the state level is especially problematic in this instance because it is partly real and partly an artifact of sampling error in the original opinion data. Measurement error is likely to be a less serious problem here than in many previous analyses of constituency opinion, because the sample size within each state is relatively large.⁸ The estimated reliability of the aggregated state ideology variable is .81 – reassuring by the standards of most empirical work in political science. However, the fact that the measurement errors in unweighted and income-weighted opinion are themselves strongly correlated ($R=.86$) provides additional scope for biases beyond those arising in the textbook case in which only a single explanatory variable is measured with error, or in the slightly more realistic case in which measurement errors in the various explanatory variables in a regression model are uncorrelated (Achen 1983; 1985).

In an attempt to gauge the effect of strongly correlated measurement errors on the results of my analysis, I repeated nine of the regression analyses reported in the body of the paper using an instrumental variables estimator, which is less efficient than ordinary regression analysis but produces consistent parameter estimates in spite of any

⁸ For example, the average state sample in the Senate Election Study is about 15 times as large as the average congressional district sample in Miller and Stokes's (1963) pioneering analysis of congressional representation. On the implications of measurement error in Miller and Stokes's analysis, see Achen (1978; 1985).

(correlated or uncorrelated) measurement errors in the explanatory variables. The results of the instrumental variables estimation, which are reported in Table A5 in the Appendix, are generally quite similar to the results of the corresponding ordinary regression analyses – except for being a good deal less precise. Thus, I rely throughout the body of the paper on ordinary regression and probit analyses, but note that better data and further sensitivity testing may modify the conclusions derived from those analyses.

Ideological Representation

My first set of analyses relates the general ideological postures of senators to the ideological views of their constituents as measured by the liberal/conservative scale in the NES Senate Election Study survey.⁹ The 7-point scale is recoded to range from –1 to +1, with negative values reflecting liberal opinion and positive values reflecting conservative opinion. The balance of opinion on the –1 to +1 scale is conservative in every state, ranging from .023 in Massachusetts to .398 in Alabama.

The regression parameter estimates in the first column of Table 1 reflect the impact of these constituency opinions on the roll call votes of senators in the 101st Congress (1989-90), as summarized by Poole and Rosenthal's (1997) first-dimension W-NOMINATE scores.¹⁰ The second and third columns of the table present parallel

⁹ “We hear a lot of talk these days about liberals and conservatives. Think about a ruler for measuring political views that people might hold, from liberal to conservative. On this ruler, which goes from one to seven, a measurement of one means very liberal political views, and a measurement of seven would be very conservative. Just like a regular ruler, it has points in between, at 2, 3, 4, 5, or 6. Where would you place yourself on this ruler, remembering that 1 is very liberal and 7 is very conservative, or haven't you thought much about this?” Respondents who “haven't thought much about this” were asked a follow-up question: “If you had to choose, would you consider yourself a liberal or a conservative?” I coded respondents who answered “liberal,” volunteered “moderate” or “middle of the road,” or answered “conservative” to the follow-up question at 1.5, 4, and 6.5, respectively, on the original 7-point scale. I imputed ideological positions for respondents who refused to place themselves on either the original question or the follow-up question (7.5% of the total sample) on the basis of demographic variables and state and year indicators.

¹⁰ Data and documentation are available from Keith Poole's website, <http://voteview.uh.edu/>. I use W-NOMINATE scores rather than the more familiar D-NOMINATE or DW-NOMINATE scores because the W-NOMINATE scores are estimated separately for each Congress, avoiding any danger of artificial consistency or redundancy in the results of my separate analyses of voting patterns in three successive Congresses. In practice, however, the various NOMINATE scales are

estimates for the 102nd Congress (1991-92) and 103rd Congress (1993-94), respectively, while the final column presents a weighted average of parameter estimates and standard errors for each Congress (weighted, in each case, by the precision of the corresponding parameter estimate).¹¹ In each case, the regression model includes unweighted constituency opinion, income-weighted constituency opinion (that is, the mean value of **Opinion** × **Income** for the survey respondents in a given state), and a dummy variable for Republican senators. (Separate regressions for Republican and Democratic senators are presented in the second and third panels of the table.) Since the W-NOMINATE scores range (roughly) from -1 for the most liberal member of each Senate to +1 for the most conservative member, positive coefficients in Table 1 indicate positive responsiveness to constituency opinion and more conservative voting patterns for Republican senators than for Democratic senators with similar constituencies.

*** **Table 1** ***

Not surprisingly, the voting patterns of Republican and Democratic senators do differ substantially – by about half the total length of the W-NOMINATE scale. Over and above these partisan differences, there is a systematic relationship between senators’ voting patterns and the ideological views of their constituents. What is most notable, however, is that senators’ voting patterns are only weakly, and in two of the three Congresses negatively, related to unweighted constituency opinion. The consistent positive relationship between constituency opinion and senators’ ideologies appears in the second row of the table, which reports the estimated effects of constituency opinion

very highly intercorrelated (and, for that matter, highly correlated with most other general measures of legislative voting patterns). On the calculation and specific properties of the W-NOMINATE scores, see Poole and Rosenthal (1997, 249-251).

¹¹ The precision of each parameter estimate is simply the squared reciprocal of the standard error reported in Table 1. By attaching greater relative weight to the most precise estimates, the weighted average appropriately distinguishes between more and less informative data in summarizing the implications of the various separate analyses. In this case, since the parameter estimates from the 103rd Congress are slightly more precise than those from the 101st and 102nd Congresses, they figure slightly more heavily in the weighted averages. The differences in precision are somewhat greater in the separate results for Democratic senators reported at the bottom of Table 1, and significantly greater in some of the subsequent tables.

weighted by income; the *t*-statistics for the three separate estimates range from 1.7 to 2.9. Taken as a whole, these results suggest quite strongly that senators respond to income-weighted constituency opinions rather than treating all constituents equally.

The patterns of differential responsiveness implied by these parameter estimates are illustrated in Figure 1, which shows the estimated weights attached to the ideological views of constituents at different income levels in each of the three Congresses covered by the analysis in Table 1. The income scale runs from zero to \$118,855 (the maximum imputed family income in the NES Senate Election Study data); the marks at zero, \$20,000, \$30,000, \$44,192, and \$77,375 represent the 1st, 25th, 50th, 75th, and 99th percentiles of the individual-level distribution of imputed family income; the mean imputed family income (\$33,214) is also indicated on the horizontal axis.

***** Figure 1 *****

If senators were equally responsive to constituents' views regardless of income, the lines in Figure 1 would be horizontal. The upward slopes in the figure imply that senators attach a good deal more weight to the opinions of affluent constituents than to the opinions of constituents with modest incomes. The slope for the 103rd Congress is noticeably less steep than for the other two Congresses (reflecting the noticeably smaller parameter estimate for the **Opinion × Income** interaction in Table 1); but even that slope implies that constituents at the 75th percentile of the income distribution received more than twice as much Senate representation as those at the 25th percentile. The results for the 101st and 102nd Congresses suggest that constituents at the 75th percentile of the income distribution received more than three times as much representation as those at the 25th percentile, while the views of the bottom five percent (with family incomes below about \$8,600) received no weight at all.

The W-NOMINATE scores analyzed in Table 1 are summary measures of senators' ideological postures on the whole range of issues brought to the Senate floor in each two-year period. Table 2 presents parallel analyses of four specific roll call votes on salient issues that reached the Senate floor during the period covered by my analysis: a 1989 vote to increase the federal minimum wage, a 1990 cloture vote on an amendment strengthening the Civil Rights Act, a 1991 vote on a Budget Act waiver to shift \$3.15

billion in budget authority from the Defense Department to domestic programs, and a 1992 cloture vote on removing the “firewall” between defense and domestic appropriations. (More detailed descriptions of these roll call votes are presented in Table A7 in the Appendix.) As it happens, a “yea” vote on each of these roll calls represented a liberal ideological position; however, I reverse the coding of the votes so that, as before, the expected signs on the parameter estimates for Republican senators and conservative constituencies are positive.¹²

***** Table 2 *****

Since the dependent variable in each column of Table 2 – a “nay” or “yea” vote on a specific roll call – is dichotomous, I used probit analysis rather than ordinary regression. Since the scale on which probit coefficients are estimated is essentially arbitrary, I normalized the results for each roll call to produce a coefficient of 1.0 on Republican party affiliation.¹³ This normalization is intended to make the probit results more nearly comparable across roll calls. Coincidentally, it produces probit coefficients that are roughly similar in magnitude to the ordinary regression coefficients reported in Table 1.

The results for specific salient roll call votes in Table 2 are even more striking than the results for general ideology in Table 1. All four estimates of the impact of unweighted constituency preferences are negative, with *t*-statistics ranging from $-.6$ to -2.2 . All four estimates of the impact of income-weighted constituency preferences are positive, with *t*-statistics ranging from 1.1 to 2.8. Moreover, the magnitude of differential responsiveness implied by these parameter estimates is even greater than in Table 1. The estimated weights attached by senators to the views of constituents with various income levels for each roll call vote in Table 2 are presented graphically in Figure 2.

¹² Senate support for the conservative position on these four roll calls ranged from 37 votes on the minimum wage to 69 votes on the 1991 budget waiver.

¹³ Conventional probit results can be recovered simply by dividing each of the parameter estimates and standard errors in Table 2 by the estimated value of σ (the standard deviation of the stochastic disturbances in the underlying probit relationship) in the same column of the table.

***** Figure 2 *****

These results suggest that constituents at the 75th percentile of the income distribution received more than three times as much representation as those at the 25th percentile on the budget waiver vote, almost five times as much on the budget cloture vote, about 16 times as much on the minimum wage, and 73 (!) times as much on civil rights.¹⁴ In each case, poor constituents seem to have received little or no representation. Obviously, all of these calculations must be treated as suggestive, given the considerable imprecision of the parameter estimates on which they are based. Nevertheless, the consistency and magnitude of the differences in estimated weights attached to the opinions of constituents at different income levels on four different roll call votes provide substantial additional evidence that economic inequality has important political consequences.

Social Issues: The Case of Abortion

The results presented in Tables 1 and 2 provide strong evidence of differential responsiveness by senators to the views of rich and poor constituents. However, there is some reason to wonder whether economic inequality might be less consequential in the domain of social issues, which tend to be “easier” than ideological issues (in the sense of Carmines and Stimson 1980) and less directly tied to economic interests. More prosaically, there is also some reason to worry that the consistency of the results presented in Tables 1 and 2 reflects some idiosyncratic feature of the constituency ideology data in the Senate Election Study.

The civil rights vote analyzed in Table 2 is something of a hybrid in this respect, since it clearly taps both general ideology (the federal government’s role in preventing

¹⁴ The results for the vote on raising the minimum wage reflect the political plight of poor constituents in especially poignant form. They suggest that senators responded negatively (or, more plausibly, not at all) to the opinions of constituents in the bottom 15 percent of the income distribution (with family incomes below about \$18,000). Thus, the views of the people most directly affected by minimum wage legislation seem to have been completely ignored by their elected representatives, even in the process of approving a minimum wage increase.

discrimination) and the partially distinct issue of race.¹⁵ Since the Senate Election Study included a specific question on government aid to blacks, I computed unweighted and income-weighted estimates of state opinion on that issue and used them in an analysis of senators' civil rights votes paralleling the analysis reported in Table 2.¹⁶ In the analysis combining senators from both parties, racial opinions proved to be slightly less useful than general ideology in accounting for senators' roll call votes; however, the results do provide some modest additional evidence of differential responsiveness, with a *t*-statistic of 1.0 on income-weighted opinion.¹⁷ In separate analyses for Republican and Democratic senators, racial opinions proved to be *more* useful than general ideology – a point I return to in the next section.

A more extensive analysis of representation in the domain of social issues requires focusing on an issue that figured more prominently on the legislative agenda than civil rights did in the late 1980s and early 1990s. The obvious choice is abortion. Here, I examine four key roll call votes touching on various controversial aspects of abortion policy: requiring parental notification prior to abortions performed on minors, overturning the Bush administration's "gag rule" on abortion counseling, prohibiting federal funding of most abortions, and criminalizing efforts to obstruct access to abortion

¹⁵ On the relationship between racial issues and general ideology, see Carmines and Stimson (1989) and Poole and Rosenthal (1997, 109-112).

¹⁶ "Some people feel that the government in Washington should make every effort to improve the social and economic position of blacks. Others feel that the government should not make any special effort to help blacks because they should help themselves. Where would you place yourself on a scale from one to seven where a measurement of one means you feel the government should make every effort to support blacks and seven means you feel the government should not make any special effort to help blacks because they should help themselves?" I recoded responses to this question to range from -1 (government effort) to +1 (help themselves). I imputed opinions for respondents who answered "don't know" or refused to answer (5.0% of the sample) on the basis of demographic variables and state and year indicators.

¹⁷ The fit of the model was slightly poorer than in Table 2, as measured by either the log likelihood (-23.36 versus -23.07) or the pseudo-R² value (.648 versus .653). The parameter estimates (and standard errors) for unweighted and income-weighted opinion were .23 (1.64) and .051 (.050), respectively.

clinics.¹⁸ (More detailed descriptions of these roll calls are presented in Table A7 in the Appendix.)

The probit parameter estimates relating individual senators' votes on these four roll calls to the opinions of their constituents on the abortion issue are shown in Table 3. I measure constituency opinion in each state using the abortion question in the NES Senate Election Study survey.¹⁹ The 3-point scale is coded to range from -1 to $+1$, with negative values reflecting pro-life opinion and positive values reflecting pro-choice opinion.²⁰ Because a "yea" vote represented the pro-choice position on each of the roll calls analyzed in Table 3, both the opinion variables and the indicator variable for Democratic partisan affiliation are expected to have positive effects on the probability of casting a "yea" vote.

***** Table 3 *****

Each of the four abortion roll call votes analyzed in Table 3 provides additional evidence of differential responsiveness by senators to the views of affluent constituents. The estimated effect of income-weighted abortion preferences is positive in every case, with t -statistics ranging from 1.0 to 2.5; the estimated effect of unweighted preferences is

¹⁸ Senate support for the pro-choice position on these four roll calls ranged from 40 votes in support of public funding to 73 votes in favor of overturning the abortion counseling ban.

¹⁹ "Do you think abortions should be legal under *all* circumstances, only legal under *certain* circumstances, or *never* legal under any circumstance?" I coded these responses $+1$, 0 , and -1 , respectively. I imputed opinions for respondents who answered "don't know" or refused to answer (4.8% of the sample) on the basis of demographic variables and state and year indicators. In 1990 and 1992 (but not in 1988), the Senate Election Study also included questions on two narrower aspects of abortion policy related to the specific roll call votes analyzed here, parental consent and public funding of abortions; however, senators' votes were less closely related to their constituents' responses to those more specific questions than to constituency opinion as measured by the general question about circumstances in which abortions should be legal.

²⁰ Mean unweighted and income-weighted abortion opinions for each state appear in Table A4 in the Appendix. Given my coding of the response options in the NES abortion question, the estimated balance of opinion is pro-choice in all but four states (Kentucky, Mississippi, West Virginia, and Louisiana). The correlation between conservatism and pro-choice opinion at the individual level is $-.23$, and the corresponding correlation between state-level conservatism and pro-choice opinion is $-.68$.

negative for three of the four roll calls. The implications of these estimates for differential responsiveness to the views of constituents with various income levels for each roll call vote are presented graphically in Figure 3.

***** Figure 3 *****

The apparent distribution of political influence is more nearly equal on the issue of public funding of abortions than on the other specific issues represented in Figure 3; but even for that vote constituents at the 75th percentile of the income distribution seem to have received about 70 percent more weight than constituents at the 25th percentile. At the opposite extreme, constituents at the 75th percentile seem to have received 77 (!) times as much weight as those at the 25th percentile on the vote to criminalize obstructing access to abortion clinics. And again, given the assumption of linear income weights in all of my analyses, the implied disparities in responsiveness for richer and poorer constituents are even greater than for middle-class constituents, with those near the bottom of the income distribution receiving little or no representation and those near the top receiving a great deal.²¹ These results make it clear that differential responsiveness is not limited to ideological issues or to the specific measure of general ideological opinion in the Senate Election Study; even on abortion – a social issue with little or no specifically economic content – economic inequality appears to have profound implications for political representation.

Partisan Differences in Representation

My analysis thus far provides a good deal of evidence that senators are more responsive to the opinions of affluent constituents than of middle-class and poor constituents. In this section, I examine the extent to which inequalities in political representation are correlated with senators' partisanship. Given the distinct class bases of

²¹ For example, the patterns of responsiveness summarized in Figure 3 suggest that the views of a constituent at the 99th percentile of the income distribution (\$77,375) received from 2.2 to 5.6 times as much weight as the views of a middle-income constituent (\$30,000), while constituents with family incomes below about \$15,000 (about 15 percent) have negative estimated weights for two of the four abortion votes.

the parties' electoral coalitions, one might expect Republican senators to be especially sensitive to the opinions of affluent constituents and Democrats to attach more weight to the opinions of poor constituents. On the other hand, votes, campaign contributions, and the various other political resources associated with higher income are presumably equally valuable to politicians of both parties; thus, Democrats as well as Republicans may be especially responsiveness to the views of resource-rich constituents, notwithstanding the historical association of the Democratic Party with the political interests of the working class and poor.²²

I examine partisan differences in representation by repeating all of my analyses separately for senators within each party. The results of these analyses for Republicans and Democrats, respectively, are reported in the middle and bottom panels of Tables 1, 2, and 3. Not surprisingly, the intra-party parameter estimates are a good deal less precise than those for the entire Senate, simply because the sample size for each analysis is about half as large.²³ Nevertheless, the differential responsiveness of senators from both parties to affluent constituents appears fairly clearly in these analyses. For Republicans, the *t*-statistics for the eleven distinct **Opinion × Income** estimates range from .8 to 2.8 and average 1.7. For Democrats, the *t*-statistics for the ten distinct **Opinion × Income** estimates range from .2 to 2.2 and average 1.2.²⁴

The patterns of differential responsiveness implied by these parameter estimates are presented in Figures 4, 5, and 6 for W-NOMINATE scores, ideological roll call votes,

²² On the marked differences in the economic fortunes of low-income families under Democratic and Republican presidents since World War II – and the contribution of Republican presidents to the growing income gap between rich and poor – see Bartels (2002).

²³ For Republicans, an additional problem is that the observed variance in constituency ideology is about 40 percent less than for the Senate as a whole, making it correspondingly harder to estimate the impact of constituency ideology with precision. For Democrats, on the other hand, the intra-party variance in constituency ideology is *greater* than for the Senate as a whole – a reflection of the fact that Democrats still represented Alabama, Arkansas, West Virginia, Georgia, and other quite conservative southern states in the period covered by my analysis.

²⁴ The three defectors from the Democratic position on the abortion counseling ban represented the two states with the strongest pro-life income-weighted abortion views, Kentucky and Louisiana. Thus, the failure of the probit model to produce meaningful parameter estimates in this instance provides indirect support for the hypothesis of differential responsiveness.

and abortion roll call votes, respectively. In each case, the figure displays estimates of differential responsiveness comparable to those displayed in Figures 1, 2, and 3, but only for the weighted averages reported in Tables 1, 2, and 3 rather than for the separate estimates for single Congresses or roll call votes.²⁵

***** Figures 4, 5, and 6 *****

Clearly, the party-specific slopes in all three figures are markedly steeper for Republicans than for Democrats. Estimated responsiveness by Democrats is approximately proportional to income; the views of a constituent at the 25th percentile of the income distribution (with a family income of about \$20,000) appear to receive about 45, 26, and 43 percent as much weight as the views of a constituent at the 75th percentile (with a family income of about \$44,000). In one case the corresponding percentage for Republicans is 3 percent, and in another case the percentage cannot be calculated because the estimated responsiveness for a constituent at the 25th percentile is *negative*. (Indeed, these estimates imply negative responsiveness by Republican senators to 21 percent of their constituents on ideological roll calls and 27 percent on abortion roll calls; the corresponding proportions for Democratic senators are 13 percent and 3 percent.)

At the upper end of the income distribution, constituents in the 99th percentile (with family incomes of about \$77,000) appear to have from three to more than six times as much influence on Republican senators as constituents with median incomes (about \$30,000). Again, the corresponding calculations for Democratic senators suggest a good deal of differential responsiveness, but much less than for Republicans: the views of constituents in the 99th percentile of the income distribution appear to get 2.2, 3, and 2.3 times as much weight as the views of median-income constituents in Figures 4, 5, and 6.

The distinction between Republicans and Democrats evident in Figures 4, 5, and 6 is reinforced by my reanalysis of votes on the civil rights roll call using racial policy views in place of general ideology. For Republican senators, the results of that analysis

²⁵ In addition to minimizing the proliferation of figures, focusing on the weighted averages helps to mitigate the imprecision of the individual estimates in the intra-party analyses reported in Tables 1, 2, and 3.

(not shown) are qualitatively similar to those reported in Table 2, with constituents at the 75th percentile of the income distribution receiving several times as much weight as those at the 25th percentile.²⁶ However, for Democratic senators the estimated pattern of responsiveness is markedly different: the racial opinions of poor constituents actually seem to receive *more* weight from Democratic senators than the views of affluent constituents do.²⁷ The key parameter estimate (for income-weighted racial opinion) is quite imprecise, with a *t*-statistic of -1.2 ; nevertheless, this result is striking in providing the *only* example I have found (in some 50 distinct regression analyses) of a negative parameter estimate on income-weighted constituency opinion.²⁸

The results summarized in Figures 4, 5, and 6 differ in their implications for the comparative responsiveness of Republicans and Democrats to constituency opinion. In Figure 4, Republicans appear to be more responsive to the views of middle-class constituents, while Democrats are more responsive only to the bottom 15 percent (those with family incomes less than about \$14,000). In Figure 5, both parties appear to be equally responsive to constituents with average incomes, while Republicans are more responsive to those with above-average incomes and Democrats are more responsive to those with below-average incomes. In Figure 6, Democrats appear to be more responsive to the views of middle-class constituents, while Republicans are more responsive only to the top 20 percent (those with family incomes greater than about \$54,000). It would be a mistake to make too much of these differences, given the considerable imprecision of the statistical estimates on which they are based; nevertheless, they are suggestive of

²⁶ The parameter estimates (and standard errors) are -3.24 (2.58) and $.191$ (.093) for unweighted and income-weighted racial opinions, respectively.

²⁷ The parameter estimates (and standard errors) are 21.02 (17.15) and $-.600$ (.500) for unweighted and income-weighted racial opinions, respectively.

²⁸ Not surprisingly, given the sharp difference between Republicans and Democrats in apparent patterns of responsiveness, racial opinions do a markedly better job of accounting for roll call votes within each party than general state ideology does. For Republicans, the log likelihood is -16.01 (versus -18.89) and the pseudo- R^2 value is $.24$ (versus $.10$). For Democrats, the log likelihood is -2.41 (versus -4.12) and the pseudo- R^2 value is $.52$ (versus $.18$).

potentially interesting differences in the two parties' representational priorities and performance.

Why are Affluent Constituents Better Represented?

Having found that senators are significantly more responsive to the views of affluent constituents than of those with lower incomes, I turn in this section to a brief consideration of the bases of that disparity. Are the affluent better represented because they are more knowledgeable about politics? Because they are more likely to vote? Because they are more likely to communicate their views to elected officials?

My analysis of the bases of differential responsiveness focuses on four specific characteristics of constituents that might mediate the effect of income in the political process: partisan agreement or disagreement with specific elected officials, election turnout, contact with senators and their staffs, and political knowledge.²⁹ My focus on partisanship as a potential mediating factor reflects the possibility that senators are more (or less) responsive to the views of their partisan core constituencies than of their broader geographical constituencies (Fenno 1978). Turnout should matter to the extent that representatives are disciplined by a desire to get reelected (Bartels 1998). Contact with elected officials and their staffs provides potentially important signals regarding both the content and the intensity of constituents' political views (Verba, Schlozman, and Brady 1995). Finally, political knowledge is potentially relevant because better-informed constituents are more likely to have crystallized preferences on specific political issues and more likely to be able to monitor the behavior of their representatives (Converse 1990; Delli Carpini and Keeter 1996).

For each of these characteristics, I constructed weighted versions of the constituency opinions tapped in the Senate Election Study comparable to the income-weighted opinions included as explanatory variables in Tables 1, 2, and 3. I estimated the effects of these weighted opinions using an elaborated version of the basic regression

²⁹ The measure of political knowledge employed here is based on the ability of survey respondents to recall the names and party affiliations of their incumbent senators. Details regarding the construction, distribution, and relationship with income of the partisanship, turnout, contact, and knowledge weights are provided in the Appendix.

model in equation {1}. If the disparities in responsiveness evident in Tables 1, 2, and 3 are attributable to differences between rich and poor constituents in political information or participation, including direct measures of information or participation in my analyses should capture those effects. For example, if senators are more responsive to the views of affluent constituents because affluent constituents are more likely to vote, including turnout-weighted constituency opinion in analyses paralleling those presented in Tables 1, 2, and 3 should drive the (direct) effect of income-weighted opinion to zero. Conversely, if we continue to find disparities in representation between rich and poor even after controlling for differences in political participation, the implication is that the effect of income works through mechanisms other than differential participation – or perhaps that money matters in its own right (for example, through responsiveness of elected officials to potential campaign contributors).

The results of my elaborated analysis of the bases of differential responsiveness are presented in Table 4 for senators' W-NOMINATE scores in the 101st, 102nd, and 103rd Congresses. Many of the parameter estimates are unhappily imprecise, but that is not surprising given the fact that the regression models from which they are derived include six different, but highly correlated, variants on the same basic constituency opinion measure. Notwithstanding a good deal of resulting uncertainty about the effects of the various weighted opinion measures, three patterns seem to emerge fairly clearly and consistently from Table 4.

***** Table 4 *****

First, the effect of income-weighted preferences is a good deal weaker in Table 4 than in Table 1, with the weighted average of the separate estimates for the three Congresses reduced by about 45 percent. Thus, the mediating variables included in Table 4 seem to account for a good deal (though by no means all) of the differential responsiveness to affluent constituents evident in Table 1.

The two specific characteristics of constituents that seem to have discernible effects on the ideological responsiveness of senators are partisanship and turnout. The parameter estimates for **Opinion × Partisanship** imply, rather surprisingly, that senators

are less responsive to constituents of their own party than to those of the opposing party; the *t*-statistics for this difference in the three Congresses range from -1.6 to -2.1 . The parameter estimates for **Opinion \times Turnout** are less surprising, suggesting that senators pay more attention to the views of constituents who vote than of those who stay home on Election Day. Both of these effects, although imprecisely estimated, are probably substantial by comparison with the unmediated effect of income. For example, a comparison of the weighted average effects for **Opinion \times Turnout** and **Opinion \times Income** suggests that voting produces almost as much additional responsiveness as moving from the 10th percentile to the 90th percentile of the income distribution. Contact may have some additional impact on responsiveness, but it is hard to discern in Table 4; the parameter estimates are positive for all three Congresses, but never as large as their standard errors. The estimated effects of knowledge are all close to zero.

Table 5 reports the results of a parallel analysis of ideological representation based on the four specific roll call votes in Table 2. These results are broadly consistent with those in Table 4. As in Table 4, including the various potential mediating characteristics reduces the apparent effect of income-weighted opinion substantially (by about 40 percent on average). Also as in Table 4, incumbent-party partisanship has a large, fairly consistent negative effect on responsiveness, while turnout and contact have smaller and less consistent positive effects.

***** Table 5 *****

Finally, Table 6 reports the results of a parallel analysis of mediated responsiveness based on the four abortion roll call votes in Table 3. In this case, the effect of **Opinion \times Partisanship** is consistently positive, suggesting that senators are especially responsive to the views of their core constituents on controversial abortion votes. None of the other potential mediating factors has a discernible effect, though they are so imprecisely estimated that their true effects could be substantial.

***** Table 6 *****

The results presented in Table 6, in contrast to those presented in Tables 4 and 5, suggest that the impact of income on representation is virtually unaffected by the incorporation of partisanship, turnout, contact, and knowledge as potential mediating factors. Income-weighted opinion continues to have a consistent positive effect on senators' abortion votes, with *t*-statistics ranging from 1.3 to 2.5. Moreover, the magnitude of differential responsiveness to affluent constituents on each roll call vote is virtually identical in Tables 3 and 6. These results suggest that, in the domain of abortion, income has a quite direct impact on political representation. The views of affluent constituents receive special weight, while the views of politically active and politically knowledgeable constituents do not. It is tempting to account for these results, and for differential responsiveness to the views of partisan core constituents, by supposing that senators casting potentially controversial abortion votes attend primarily to the views of potential campaign contributors, with Democrats catering to pro-choice contributors and Republicans to pro-life contributors. However that may be, it seems clear that much additional work will be necessary to pinpoint the bases of unequal political representation. In the domain of abortion, even more than in the domain of ideology, the simple assumption that affluent constituents are better represented because they know more and participate more is insufficient to account for observed patterns of differential responsiveness.

Conclusion

My analysis suggests that senators are vastly more responsive to the views of affluent constituents than to constituents of modest means. The magnitude of this difference varies from issue to issue, and many of the separate estimates fail to satisfy conventional standards of “statistical significance.” Nevertheless, the consistency of the difference across a variety of political issues, opinion measures, and model specifications is quite impressive, and the magnitude of the disparities in responsiveness to rich and poor constituents implied by my results is even more impressive.

A familiar yardstick in empirical analyses of economic inequality is the 90-10 ratio – that is, the ratio of incomes or other resources at the 90th percentile of the income distribution to those at the 10th percentile. I have been unable to calculate 90-10 ratios

for most of the disparities in political representation documented here, for the simple reason that the estimated levels of political responsiveness for constituents at the 10th percentile of the income distribution are, in most cases, negative. Indeed, my results suggest that constituents in the bottom fifth of the income distribution get little or no representation on most issues, especially from Republican senators.

I have presented a variety of more limited comparisons of responsiveness to the views of constituents at the 75th and 25th percentiles of the income distribution, but even these are sometimes quite sensitive to very small values of estimated responsiveness to the opinions of lower middle-class constituents. For the broadest measures of legislative behavior, Poole-Rosenthal W-NOMINATE scores summarizing all the floor votes cast by senators of both parties in a two-year period, my estimates suggest that constituents at the 75th percentile of the income distribution (with family incomes of about \$44,000, in 1990 dollars) got almost three times as much representation as those at the 25th percentile (with family incomes of about \$20,000). For specific controversial roll calls, the 75-25 responsiveness ratios range from 1.7 to 77 (with a geometric average of 9). And, given my assumption throughout of linear income effects, the implied disparities in responsiveness to the views of constituents in the long right tail of the income distribution are much greater than those reflected in the 75-25 responsiveness ratios.³⁰

These disparities are especially troubling because of the potential for a debilitating feedback cycle linking the economic and political realms: increasing economic inequality may produce increasing inequality in political responsiveness, which in turn produces public policies increasingly detrimental to the interests of poor citizens, which in turn produces even greater economic inequality, and so on. If that is the case, shifts in the income distribution triggered by exogenous technological forces may in time become augmented, entrenched, and immutable.

Obviously, much additional research would be necessary to document the impact of unequal representation on the contours of actual public policy. While there is good

³⁰ Whereas the 75th percentile of the income distribution in the Senate Election Study data corresponds to a family income of \$44,195, the 99th percentile corresponds to a family income of \$77,375, and the highest imputed income is \$118,855. Thus, in absolute terms, the implied disparities in responsiveness between the top of the income distribution and the 75th percentile are larger than the disparities between the 75th percentile and the bottom of the distribution.

reason to suspect that declining resources among poor and less-educated citizens translate into less effective representation of their interests, to the best of my knowledge no existing research demonstrates a clear link between economic inequality and broad patterns of government policy-making. In light of the results presented here, the political implications of growing economic inequality would seem to warrant vigorous, detailed investigation.

The mechanisms by which economic inequality gets reproduced in the realm of politics also cry out for more sustained attention from political scientists. The simple assumption that the rich are more influential than the poor because they are more likely to vote and more likely to have direct contact with government officials receives some modest support in my analysis, but seems far from being the whole story. The even simpler assumption that the rich are more influential than the poor because money dominates the contemporary American political process receives somewhat stronger, albeit indirect, support in my analysis. However, the role of money in the political process has more often been the focus of sensationalism and hand-wringing than of careful empirical investigation.

Despite the significant limitations of my data and the crudeness of my analysis, the findings presented here suggest a very strong connection between economic inequality and political representation. Perhaps, as Dahl (1989, 324) has claimed, “In an advanced democratic country the economic order would be understood as instrumental not merely to the production and distribution of goods and services but to a much larger range of values, including democratic values.” However that may be, the economic order of the contemporary United States seems to pose a serious obstacle to realizing the democratic value of political equality.

Appendix

This Appendix provides descriptions of my post-stratification of the Senate Election Study survey data; my procedure for imputing family income levels to survey respondents; my estimates of state conservatism and abortion opinion; an assessment of the impact of measurement error in state opinions on the results of my analysis; my procedure for weighting opinions by partisanship, turnout, contact, and knowledge; and the specific roll call votes employed in my examination of differential responsiveness to constituency opinion.

Post-Stratification

The telephone sample generated for the NES Senate Election Study significantly underrepresented young people, racial and ethnic minority groups, and the less-educated. For example, the average state sample (weighted by population) had 13.5% without high school diplomas and 6.9% blacks in the survey; the corresponding averages derived from 1990 Census Bureau figures were 23.7% and 9.6%, respectively. In order to mitigate the impact of these problems on my analysis of representation, I post-stratified the sample within each state to reproduce Census Bureau figures on the population distributions of education, race and ethnicity, age, sex, and work status.

The strata employed in my post-stratification are shown in Table A1, along with the national average weights for each stratum. (The actual weights applied to the data were calculated separately for respondents in each state.) Because published state-level census data consist of marginal distributions for each characteristic rather than their joint distribution, I stratified the Senate Election Study data successively on the basis of each characteristic in the order shown. That is, I first stratified the survey data on the basis of education (bolstering the sample proportions of relatively uneducated respondents), then checked to see whether the resulting weighted data accurately reflected the census distribution of race and ethnicity in each state. Since they did not, I stratified the weighted data on the basis of race and ethnicity (bolstering the sample proportions of blacks and Hispanics), then checked to see whether the resulting weighted data accurately reflected the census distribution of age in each state, and so on. The weights

employed in my subsequent analysis reflect the product of these four successive conditional post-stratifications.

***** Table A1 *****

Income Imputation

The Senate Election Study recorded respondents' family incomes in six categories in 1988 and 1990 and seven categories in 1992. Incomes were not recorded for 697 respondents (7.5%) and were only partially reported for an additional 307 respondents (3.3%).³¹

I imputed real incomes (in 1990 dollars) for all respondents by regressing reported incomes for the 8,556 non-missing respondents on a series of demographic variables, plus dummy variables for years and states. The results of this regression are reported in Table A2. I then adjusted the imputed incomes (fitted values from the regression plus random errors) to make them consistent with respondents' fully or partially reported categorical responses. For example, a respondent whose imputed income was \$25,000 but whose actual response was "less than \$20,000, more than \$10,000" was recoded to \$20,000, while a respondent whose imputed income was \$55,000 but whose actual response was "more than \$60,000" was recoded to \$60,000.

***** Table A2 *****

The average imputed incomes produced by this procedure for each of the original response categories in each year are reported in Table A3. The main effect of the imputation, aside from including the respondents for whom income was not reported, is to compress the income distribution somewhat. For example, the average imputed income of respondents in the "less than \$10,000" category in 1990 is \$8,026, while the average imputed income of respondents in the "more than \$60,000" category is

³¹ Income levels were ascertained using a series of branching questions. Partial responses (for example, "Less than \$20,000 (DK or NA if under or over \$10,000)") were recorded for respondents who opted out before being placed in one of the six or seven final income categories.

\$63,766.³² The standard deviation of imputed income for the entire sample is \$18,682, about 20 percent less than the corresponding standard deviation of reported incomes for the non-missing respondents.

***** Table A3 *****

Estimated State Opinion

My estimates of unweighted and income-weighted state ideology and abortion opinions (and the standard errors of those estimates) appear in Table A4. Ideology is coded to range from -1 (in a state where every respondent in the Senate Election Study was very liberal) to +1 (in a state where every respondent was very conservative); the observed values range from .023 in Massachusetts to .398 in Alabama. Abortion is coded to range from -1 (in a state where every respondent opposed legal abortions under any circumstances) +1 (in a state where every respondent supported legal abortions without qualification); the observed values range from -.145 in Kentucky to .375 in Nevada.

***** Table A4 *****

The estimates of state ideology in Table A4 may usefully be compared with those produced from other sources by Erikson, Wright, and McIver (1993) and Park, Gelman, and Bafumi (2002). Erikson, Wright, and McIver cumulated data from 122 CBS News/*New York Times* surveys conducted between 1976 and 1988, while Park, Gelman, and Bafumi employed seven CBS News/*New York Times* surveys conducted in the nine days preceding the 1988 presidential election. The estimates of state conservatism derived from the Senate Election Study are strongly correlated with both Erikson, Wright, and McIver's estimates ($R=.59$) and Park, Gelman, and Bafumi's ($R=.60$); the correlation between those two estimates is slightly less strong ($R=.49$).

³² Imputed real incomes in each category are generally somewhat higher in 1988 and somewhat lower in 1992 than in 1990 because the real value of each nominal income level declined with inflation.

The availability of independent measures of state ideology makes it possible to assess the impact of measurement error on the estimates of responsiveness derived from the constituency opinion data in the Senate Election Study. Since the Erikson-Wright-McIver and Park-Gelman-Bafumi estimates are strongly correlated with true constituency opinion – but uncorrelated with the measurement error in the estimates derived from the Senate Election Study – they are well-suited to serve as instrumental variables in regression analyses of the sort reported in Table 1.³³ Table A5 provides a comparison of the key results of the ordinary least squares analyses in Table 1 and parallel instrumental variables analyses employing the Erikson-Wright-McIver and Park-Gelman-Bafumi estimates as instruments for state ideology (and these estimates multiplied by mean state income as instruments for income-weighted ideology).³⁴

***** Table A5 *****

The most obvious difference between the ordinary least squares results and the instrumental variables results is that the latter are much less precise, with standard errors about 90 percent larger in the regressions for senators of both parties, 52 percent larger in the regressions for Republicans only, and 115 percent larger in the regressions for Democrats only. However, notwithstanding that imprecision, most of the coefficients are remarkably similar. The estimated effects of income-weighted opinion differ by less than .01, on average, with the ordinary least squares results sometimes lower and sometimes higher than the corresponding instrumental variables results; the weighted averages of the estimated effects across the three Congresses never differ by as much as ten percent. The estimated effects of unweighted opinion are more variable, but even these differences are small by comparison with the standard errors of the coefficients, and the only hint of a systematic difference is in the estimated effects of unweighted opinion on Republican

³³ Most standard econometrics textbooks address the use of instrumental variables to estimate regression models with measurement error in explanatory variables. Fuller (1987, 50-59, 148-163) provides a more detailed treatment.

³⁴ The purging regressions employing all four of these instrumental variables (plus senators' party affiliation, which appears as a control variable in the regression analyses reported in Table 1) produce R^2 values of .65 for unweighted ideology and .59 for income-weighted ideology.

senators: the ordinary least squares estimates for all three Congresses are negative, whereas the instrumental variables estimates for all three Congresses are positive.³⁵

Taken as a whole, the comparisons in Table A5 suggest that measurement error in constituency opinion has only a modest effect on my estimates of responsiveness – and that any attempt to circumvent that measurement error through the use of instrumental variables would probably hurt (by increasing the imprecision of the estimates) more than it would help (by reducing bias). Nevertheless, the inferential implications of highly correlated measurement errors in my various unweighted and weighted measures of constituency opinion deserve more systematic investigation.

Partisanship, Turnout, Contact, and Knowledge

The analyses presented in Tables 4, 5, and 6 include measures of constituency opinion weighted by partisanship, turnout, contact, and knowledge in addition to the unweighted and income-weighted constituency opinions included in Tables 1, 2, and 3. **Partisanship** is the standard NES party identification question, with responses recoded to range from zero for strong partisans of the opposite party to 1 for strong partisans of the senator’s own party.³⁶ **Turnout** is coded 1 for respondents who reported voting in the current election and zero for those who reported not voting or did not answer. **Contact** is a four-point scale derived from respondents’ reports of having met with senators or

³⁵ The instrumental variables estimates for the effect of party, not shown in Table A5, are virtually identical to those reported in Table 1. The estimated intercepts vary to accommodate the differences in estimated effects of unweighted opinion, and their standard errors are about 50 percent larger than the ordinary least squares standard errors reported in Table 1.

³⁶ Thus, unlike the other constituency opinion measures included in my analysis, **Opinion × Partisanship** takes different values for Democratic and Republican senators in the same state.

members of their staffs.³⁷ **Knowledge** is a scale measuring respondents' ability to name their senators and identify which party they represent.³⁸

The partisanship, turnout, contact, and knowledge items are all rescaled to range from zero to one. Descriptive statistics for turnout, contact, and knowledge are presented in Table A6, along with regression results relating each of those characteristics to imputed family income. Given the way these characteristics are coded in my analysis, the mean level of turnout is about twice the mean level of knowledge, which in turn is about twice the mean level of contact. (The contact and knowledge variables also have smaller standard deviations than the turnout variable.)

***** Table A6 *****

Not surprisingly, turnout, contact, and knowledge are all clearly related to income. (With 9,253 observations, the *t*-statistics in the regressions range from 17 to 25.) In absolute terms, income appears to have a bigger effect on turnout than on contact. However, once the differences in the mean values of these variables are taken into account, contact and knowledge appear to be more sensitive than turnout to income differences. For example, the parameter estimates in Table A6 suggest that a constituent at the 75th percentile of the family income distribution (\$44,192) was 17 percent more likely to vote than a constituent at the 25th percentile (\$20,000), but 48 percent more likely to have contact with a senator or member of a senators' staff and 56 percent more

³⁷ "U.S. Senators can have contact with the people from their state in many ways. I will read a list of some of these ways. Think of [NAME], who has been a U.S. Senator in Washington. Have you met [him/her] personally? ... Have you talked to a member of [his/her] staff or to someone in [his/her] office?" I assign one point for having met each senator and one point for having talked to a member of each senator's staff.

³⁸ "And how about the two U.S. Senators from your state. Do you happen to remember what their names were? . . . What is [NAME]'s party affiliation?" I assign one point for knowing each senator's name and one point for knowing each senator's party affiliation. In the case of senators running for reelection, I average the results for the senator and his or her opponent. This measure of political knowledge seems especially appropriate for an analysis of Senate representation. In 1992 (only), the Senate Election Study also included questions tapping respondents' ability to identify Dan Quayle, Al Gore, Tom Foley, and William Rehnquist. A general knowledge measure constructed from responses to those items turned out to be even less useful than the more specific measure employed in Tables 4, 5, and 6.

knowledgeable. Thus, the apparent sensitivity of senators to contact-weighted constituency opinion in Tables 4 and 5 reflects particular responsiveness to a small, markedly affluent stratum of their constituencies.

Roll Call Votes

The analyses in Tables 2, 3, 5, and 6 are based on senators' votes on eight salient issues that reached the Senate floor during the 101st, 102nd, or 103rd Congresses. I selected these votes from among the "key votes" featured in *Congressional Quarterly* and the *Almanac of American Politics*; my selection was made primarily on the basis of subject matter, but I avoided lopsided roll calls and those on which either party was unanimous. For each roll call, I counted senators who paired or announced in favor as "yea" votes and those who paired or announced against as "nay" votes; senators who paired without taking a position, voted "present," or did not vote are excluded from my analysis. Descriptions of the eight votes are presented in Table A7.

***** Table A7 *****

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Table 1: Constituency Opinion and Senators' Ideology

Ordinary least squares regression coefficients (with standard errors in parentheses)
for Poole-Rosenthal W-NOMINATE scores

	101st Congress	102nd Congress	103rd Congress	Weighted Average
BOTH PARTIES				
Unweighted Opinion	-.66 (.73)	-.63 (.73)	.01 (.67)	-.40 (.71)
Opinion × Income	.077 (.027)	.073 (.027)	.041 (.024)	.062 (.026)
Republican	.92 (.04)	.97 (.05)	1.00 (.04)	.96 (.04)
Intercept	-.85 (.06)	-.93 (.06)	-.90 (.05)	-.89 (.06)
std err of reg	.223	.225	.204	
adjusted R²	.82	.83	.86	
N	100	102	101	
REPUBLICANS				
Unweighted Opinion	-1.17 (1.41)	-1.01 (1.47)	-.38 (1.45)	-.86 (1.44)
Opinion × Income	.108 (.053)	.100 (.055)	.089 (.054)	.099 (.054)
Intercept	-.01 (.14)	-.04 (.14)	-.09 (.14)	-.05 (.14)
std err of reg	.272	.279	.267	
adjusted R²	.17	.11	.17	
N	45	44	44	
DEMOCRATS				
Unweighted Opinion	-.27 (.74)	-.35 (.73)	.29 (.53)	-.02 (.63)
Opinion × Income	.059 (.027)	.059 (.027)	.021 (.019)	.040 (.023)
Intercept	-.83 (.05)	-.90 (.05)	-.84 (.04)	-.85 (.05)
std err of reg	.177	.178	.128	
adjusted R²	.39	.34	.32	
N	55	58	57	

Table 2: Constituency Ideology and Roll Call Votes

Rescaled probit coefficients (with standard errors in parentheses)
for conservative positions on roll call votes

	Minimum Wage	Civil Rights	Budget Waiver	Budget Cloture	Weighted Average
BOTH PARTIES					
Unweighted Opinion	−4.29 (1.93)	−3.52 (1.94)	−2.22 (3.22)	−1.16 (2.05)	−2.97 (2.11)
Opinion × Income	.234 (.084)	.179 (.082)	.226 (.122)	.086 (.078)	.171 (.086)
Republican	1.00 (.19)	1.00 (.19)	1.00 (.24)	1.00 (.14)	1.00 (.18)
Intercept	−1.23 (.33)	−1.05 (.32)	−.79 (.28)	−.69 (.19)	−.85 (.25)
σ	.291	.276	.655	.370	
log likelihood	−26.87	−23.07	−41.95	−32.08	
pseudo-R²	.59	.65	.28	.53	
N	100	100	97	99	
REPUBLICANS					
Unweighted Opinion	−3.99 (2.24)	−3.22 (2.17)	−10.50 (7.62)	−6.10 (4.29)	−4.12 (2.63)
Opinion × Income	.214 (.094)	.173 (.091)	.509 (.318)	.293 (.180)	.215 (.110)
Intercept	−.18 (.23)	−.07 (.22)	.26 (.67)	.16 (.38)	−.06 (.27)
log likelihood	−20.65	−18.89	−9.21	−9.26	
pseudo-R²	.13	.10	.15	.15	
N	45	45	42	43	
DEMOCRATS					
Unweighted Opinion	−5.72 (4.40)	−4.71 (4.94)	−.23 (3.59)	.53 (2.39)	−1.20 (3.26)
Opinion × Income	.314 (.209)	.217 (.213)	.158 (.134)	.022 (.090)	.105 (.125)
Intercept	−1.52 (.77)	−1.06 (.66)	−.78 (.29)	−.64 (.20)	−.74 (.28)
log likelihood	−6.09	−4.12	−31.95	−21.79	
pseudo-R²	.29	.18	.16	.05	
N	55	55	55	56	

Table 3: Constituency Opinion and Abortion Roll Call Votes

Rescaled probit coefficients (with standard errors in parentheses)
for pro-choice positions on roll call votes

	Parental Notification	Counseling Ban	Public Funding	Clinic Access	Weighted Average
BOTH PARTIES					
Unweighted Opinion	-.53 (2.05)	-2.09 (1.78)	.62 (2.27)	-1.42 (1.79)	-1.05 (1.93)
Opinion × Income	.082 (.054)	.136 (.054)	.058 (.058)	.072 (.048)	.087 (.053)
Democrat	1.00 (.19)	1.00 (.19)	1.00 (.21)	1.00 (.18)	1.00 (.19)
Intercept	-1.07 (.22)	-.65 (.17)	-1.31 (.25)	-.42 (.16)	-.74 (.19)
σ	.576	.443	.629	.496	
log likelihood	-43.95	-30.24	-46.53	-38.31	
pseudo-R²	.34	.47	.30	.37	
N	96	99	99	99	
REPUBLICANS					
Unweighted Opinion	-1.02 (3.18)	-4.14 (2.11)	.15 (3.88)	-1.46 (1.98)	-2.16 (2.40)
Opinion × Income	.099 (.081)	.174 (.062)	.079 (.095)	.057 (.053)	.102 (.066)
Intercept	-1.12 (.30)	-.59 (.18)	-1.40 (.39)	-.31 (.18)	-.62 (.21)
log likelihood	-16.84	-21.92	-14.49	-28.54	
pseudo-R²	.18	.26	.17	.03	
N	42	43	44	44	
DEMOCRATS					
Unweighted Opinion	-.06 (2.70)		1.03 (2.84)	-11.27 (8.88)	-.09 (3.05)
Opinion × Income	.065 (.074)	*	.043 (.074)	.574 (.365)	.064 (.080)
Intercept	-.03 (.19)		-.27 (.20)	-.16 (.42)	-.15 (.22)
log likelihood	-27.06		-31.95	-6.95	
pseudo-R²	.12		.13	.40	
N	54	56	55	55	

* Democratic split on counseling ban (53-3) perfectly classified by **Opinion × Income**

Table 4: Bases of Differential Responsiveness

Ordinary least squares regression coefficients (with standard errors in parentheses)
for Poole-Rosenthal W-NOMINATE scores

	101st Congress	102nd Congress	103rd Congress	Weighted Average
Unweighted Opinion	.25 (1.10)	-.18 (1.08)	.60 (.95)	.26 (1.03)
Opinion × Income	.054 (.030)	.042 (.030)	.012 (.027)	.034 (.029)
Opinion × Partisanship	-2.30 (1.22)	-1.91 (1.21)	-2.19 (1.05)	-2.14 (1.15)
Opinion × Turnout	1.03 (1.07)	1.60 (1.07)	1.85 (.97)	1.52 (1.03)
Opinion × Contact	1.58 (1.89)	1.50 (1.85)	.60 (1.69)	1.18 (1.80)
Opinion × Knowledge	.08 (1.43)	.21 (1.43)	-.42 (1.30)	-.07 (1.38)
Republican	1.10 (.10)	1.12 (.10)	1.18 (.09)	1.14 (.10)
Intercept	-.93 (.09)	-.98 (.09)	-.96 (.07)	-.96 (.08)
std err of reg	.219	.220	.199	
adjusted R²	.82	.83	.87	
N	100	102	101	

Table 5: Bases of Differential Responsiveness on Ideological Roll Calls

Rescaled probit coefficients (with standard errors in parentheses)
for conservative positions on roll call votes

	Minimum Wage	Civil Rights	Budget Waiver	Budget Cloture	Weighted Average
Unweighted Opinion	-1.52 (3.37)	-.79 (3.41)	-.59 (5.12)	7.03 (3.37)	1.31 (3.60)
Opinion × Income	.171 (.088)	.043 (.103)	.163 (.144)	.035 (.096)	.099 (.101)
Opinion × Partisanship	-3.11 (3.67)	-5.43 (3.99)	-5.69 (6.49)	-13.50 (4.51)	-6.53 (4.28)
Opinion × Turnout	.77 (3.07)	3.29 (3.77)	4.26 (5.02)	1.29 (3.42)	1.96 (3.59)
Opinion × Contact	8.20 (5.55)	6.65 (6.84)	-1.02 (8.68)	5.15 (5.65)	5.65 (6.28)
Opinion × Knowledge	-4.77 (3.72)	2.33 (4.01)	1.85 (6.81)	-1.90 (4.40)	-1.24 (4.30)
Republican	1.21 (.33)	1.52 (.42)	1.52 (.64)	2.20 (.50)	1.51 (.42)
Intercept	-1.26 (.36)	-1.20 (.41)	-1.03 (.46)	-1.37 (.35)	-1.24 (.39)
σ	.276	.238	.648	.329	
log likelihood	-24.25	-17.30	-41.16	-25.50	
pseudo-R²	.63	.74	.29	.63	
N	100	100	97	99	

Table 6: Bases of Differential Responsiveness on Abortion Roll Calls

Rescaled probit coefficients (with standard errors in parentheses)
for pro-choice positions on roll call votes

	Parental Notification	Counseling Ban	Public Funding	Clinic Access	Weighted Average
Unweighted Opinion	-2.19 (3.68)	-6.34 (3.28)	-3.91 (4.23)	-5.45 (3.27)	-4.68 (3.54)
Opinion × Income	.090 (.056)	.131 (.053)	.077 (.061)	.073 (.049)	.093 (.054)
Opinion × Partisanship	3.35 (4.17)	5.60 (4.18)	5.24 (4.44)	4.11 (3.78)	4.53 (4.11)
Opinion × Turnout	-.68 (3.38)	3.06 (3.20)	.07 (3.58)	3.40 (3.19)	1.60 (3.32)
Opinion × Contact	2.69 (5.21)	3.87 (5.15)	.51 (5.27)	7.69 (4.89)	3.84 (5.12)
Opinion × Knowledge	-.37 (3.78)	-1.81 (4.05)	4.10 (3.87)	-3.64 (3.80)	-.43 (3.87)
Democrat	.88 (.23)	.94 (.22)	.81 (.26)	.94 (.22)	.90 (.23)
Intercept	-1.03 (.25)	-.71 (.21)	-1.35 (.28)	-.50 (.20)	-.82 (.23)
σ	.574	.427	.618	.477	
log likelihood	-43.50	-28.01	-45.22	-35.37	
pseudo-R²	.35	.51	.32	.42	
N	96	99	99	99	

Table A1: Sample Post-Stratification

Strata and (national average) weights for successive post-stratifications of Senate Election Study survey data

	Strata and Average Weights				
Education	No High School <u>Diploma</u> 1.759		High School <u>Graduate</u> .901		College <u>Graduate</u> .831
Race/Ethnicity	<u>Black</u> 1.401		<u>Hispanic</u> 1.373		<u>White; Other</u> .953
Age	<u>18-24</u> 1.280	<u>25-34</u> .904	<u>35-44</u> .981	<u>45-64</u> 1.062	<u>65 and older</u> .881
Sex and Work Status	Female, <u>Working</u> 1.075		Female, <u>Not Working</u> .762		Male, <u>Working</u> 1.140
					Male, <u>Not Working</u> .958

Table A2: Income Imputation

Ordinary least squares regression coefficients (with standard errors in parentheses); sample post-stratified within states by education, race, age, sex, and work status

Age (in years)	-831 (145)
√Age	10,799 (1,901)
Education (in years)	771 (99)
High School Diploma	6,118 (668)
College Degree	11,760 (627)
Black	-4,147 (799)
Hispanic	-4,589 (1,010)
Female	-495 (799)
Working	7,264 (780)
Working Female	-3,221 (953)
Union Household	3,045 (606)
Married	10,103 (467)
1990	-787 (532)
1992	-1,002 (554)
State Fixed Effects	yes
	Adjusted R ² = .28 Std err of reg = 19,896 N=8,556

Table A3: Average Imputed Income by Response Category

Family income in 1990 dollars; sample post-stratified within states by education, race, age, sex, and work status

	1988	1990	1992
Less than \$10,000	\$8,657 (N=299)	\$8,026 (N=228)	\$6,757 (N=205)
\$10,000-\$19,999	\$19,320 (N=545)	\$16,851 (N=525)	\$16,555 (N=407)
\$20,000-\$29,999	\$29,109 (N=651)	\$26,497 (N=674)	\$24,679 (N=561)
\$30,000-\$39,999	\$38,839 (N=504)	\$35,574 (N=573)	\$33,236 (N=407)
\$40,000-\$59,999	\$50,533 (N=462)	\$48,177 (N=596)	\$45,319 (N=509)
\$60,000-\$80,000 (More than \$60,000 in 1988, 1990)	\$68,487 (N=290)	\$63,766 (N=406)	\$59,753 (N=197)
More than \$80,000 (1992 only)	---	---	\$75,236 (N=210)
Less than \$20,000	\$12,980 (N=10)	\$14,533 (N=25)	\$12,285 (N=13)
Less than \$30,000	\$17,934 (N=57)	\$19,246 (N=36)	\$17,508 (N=31)
More than \$30,000	\$46,657 (N=36)	\$43,724 (N=48)	\$42,393 (N=24)
More than \$40,000	\$54,221 (N=7)	\$48,384 (N=16)	\$67,814 (N=4)
NA	\$32,511 (N=284)	\$28,768 (N=222)	\$29,454 (N=191)

Table A4: Estimated State Ideologies and Abortion Opinions

Estimated unweighted and income-weighted mean constituency opinions from NES Senate Election Study (with standard errors in parentheses); sample post-stratified within states by education, race, age, sex, and work status

	Conservative Ideological Opinion		Pro-Choice Abortion Opinion	
	Unweighted Opinion	Opinion × Income	Unweighted Opinion	Opinion × Income
AL (N=205)	.398 (.036)	10.26 (1.32)	.040 (.043)	4.10 (1.65)
AK (N=192)	.095 (.038)	4.19 (1.42)	.319 (.046)	16.49 (1.76)
AZ (N=173)	.111 (.040)	3.62 (1.49)	.337 (.048)	11.26 (1.86)
AR (N=174)	.374 (.040)	10.99 (1.47)	.020 (.047)	3.18 (1.83)
CA (N=183)	.046 (.039)	1.07 (1.42)	.327 (.046)	13.73 (1.78)
CO (N=206)	.124 (.037)	4.73 (1.38)	.253 (.044)	13.24 (1.72)
CT (N=170)	.056 (.041)	1.58 (1.51)	.258 (.048)	15.41 (1.88)
DE (N=196)	.108 (.038)	3.83 (1.39)	.257 (.045)	11.03 (1.74)
FL (N=161)	.254 (.042)	8.87 (1.53)	.146 (.049)	7.64 (1.91)
GA (N=177)	.339 (.038)	9.67 (1.41)	.061 (.045)	3.79 (1.76)

HI (N=152)	.118 (.044)	5.63 (1.63)	.271 (.052)	10.95 (2.03)
ID (N=223)	.208 (.036)	5.70 (1.32)	.187 (.042)	7.13 (1.64)
IL (N=182)	.055 (.039)	2.12 (1.44)	.181 (.046)	9.07 (1.80)
IN (N=193)	.183 (.038)	6.04 (1.40)	.094 (.045)	2.34 (1.75)
IA (N=200)	.218 (.038)	5.96 (1.40)	.172 (.045)	4.32 (1.75)
KS (N=202)	.192 (.038)	6.09 (1.39)	.053 (.045)	2.61 (1.73)
KY (N=199)	.239 (.037)	7.08 (1.36)	-.145 (.044)	-.96 (1.69)
LA (N=182)	.304 (.039)	8.26 (1.43)	-.042 (.046)	-.61 (1.78)
ME (N=215)	.176 (.037)	5.08 (1.35)	.279 (.043)	10.85 (1.68)
MD (N=165)	.047 (.041)	1.14 (1.50)	.178 (.048)	8.53 (1.87)
MA (N=176)	.023 (.040)	-.09 (1.49)	.296 (.048)	13.40 (1.86)
MI (N=202)	.171 (.037)	6.03 (1.38)	.112 (.044)	3.96 (1.72)
MN (N=202)	.120 (.038)	4.72 (1.39)	.120 (.045)	4.20 (1.73)
MS (N=185)	.288 (.037)	6.43 (1.37)	-.126 (.044)	-.02 (1.71)
MO (N=172)	.121 (.040)	4.29 (1.48)	.110 (.048)	5.62 (1.85)
MT (N=192)	.088 (.039)	3.07 (1.44)	.244 (.046)	6.55 (1.79)
NE (N=185)	.227 (.040)	7.65 (1.47)	.118 (.047)	4.20 (1.84)
NV (N=183)	.169 (.039)	6.58 (1.44)	.375 (.046)	14.96 (1.79)
NH (N=184)	.174 (.040)	5.89 (1.47)	.343 (.047)	14.92 (1.83)
NJ (N=169)	.094 (.040)	4.07 (1.49)	.319 (.048)	14.12 (1.85)
NM (N=184)	.174 (.038)	4.90 (1.42)	.172 (.046)	6.79 (1.77)
NY (N=151)	.148 (.043)	4.06 (1.60)	.354 (.052)	14.40 (2.00)
NC (N=212)	.254 (.035)	7.31 (1.30)	.146 (.042)	5.23 (1.61)
ND (N=175)	.233 (.040)	6.63 (1.48)	.032 (.048)	1.89 (1.85)
OH (N=169)	.112 (.041)	3.70 (1.50)	.087 (.048)	3.63 (1.87)
OK (N=212)	.292 (.036)	8.61 (1.34)	.132 (.043)	4.04 (1.68)
OR (N=190)	.126 (.039)	3.55 (1.44)	.324 (.046)	11.95 (1.79)
PA (N=162)	.259 (.042)	6.40 (1.54)	.060 (.049)	4.33 (1.92)
RI (N=171)	.122 (.041)	4.11 (1.50)	.296 (.048)	12.28 (1.87)
SC (N=193)	.237 (.037)	8.63 (1.35)	.085 (.044)	4.23 (1.69)
SD (N=206)	.180 (.037)	5.13 (1.38)	.059 (.044)	3.07 (1.72)
TN (N=210)	.267 (.036)	7.48 (1.31)	.050 (.042)	2.44 (1.64)
TX (N=180)	.290 (.039)	8.70 (1.45)	.109 (.047)	2.33 (1.80)
UT (N=171)	.151 (.041)	4.66 (1.52)	.118 (.049)	4.91 (1.89)
VT (N=162)	.167 (.042)	3.73 (1.56)	.322 (.050)	12.39 (1.94)
VA (N=155)	.265 (.042)	8.24 (1.55)	.106 (.050)	7.85 (1.94)
WA (N=160)	.158 (.043)	3.28 (1.57)	.322 (.050)	12.88 (1.95)
WV (N=212)	.358 (.036)	8.42 (1.34)	-.068 (.043)	-.55 (1.67)
WI (N=173)	.172 (.040)	5.20 (1.48)	.105 (.048)	3.08 (1.84)
WY (N=205)	.246 (.037)	7.11 (1.38)	.083 (.044)	3.28 (1.72)

Table 1: Constituency Opinion and Senators' Ideology

Ordinary least squares regression coefficients (with standard errors in parentheses)
for Poole-Rosenthal W-NOMINATE scores

	101st Congress	102nd Congress	103rd Congress	Weighted Average
BOTH PARTIES				
Opinion (Poorest Third)	-.28 (.57)	-.42 (.55)	.02 (.53)	-.22 (.55)
Opinion (Middle Third)	2.76 (.72)	2.74 (.71)	2.32 (.67)	2.59 (.70)
Opinion (Richest Third)	3.74 (.97)	3.80 (.95)	1.98 (.90)	3.12 (.94)
Republican	.92 (.04)	.96 (.04)	1.00 (.04)	.96 (.04)
Intercept	-.86 (.06)	-.94 (.06)	-.90 (.05)	-.90 (.06)
std err of reg	.215	.213	.200	
adjusted R²	.83	.84	.87	
N	100	102	101	
REPUBLICANS				
Opinion (Poorest Third)	-.58 (1.00)	-.60 (1.03)	-.10 (1.08)	-.44 (1.03)
Opinion (Middle Third)	4.73 (1.51)	4.43 (1.53)	3.76 (1.44)	4.29 (1.49)
Opinion (Richest Third)	3.77 (1.87)	4.19 (1.90)	3.86 (1.98)	3.94 (1.91)
Intercept	-.05 (.12)	-.09 (.12)	-.07 (.12)	-.07 (.12)
std err of reg	.259	.263	.263	
adjusted R²	.22	.21	.20	
N	45	44	44	
DEMOCRATS				
Opinion (Poorest Third)	.29 (.63)	-.04 (.58)	.30 (.44)	.20 (.52)
Opinion (Middle Third)	1.66 (.74)	1.93 (.71)	1.67 (.55)	1.74 (.64)
Opinion (Richest Third)	3.83 (.98)	3.68 (.96)	1.07 (.71)	2.46 (.84)
Intercept	-.84 (.05)	-.92 (.05)	-.84 (.04)	-.86 (.05)
std err of reg	.169	.167	.125	
adjusted R²	.45	.42	.35	
N	55	58	57	

Table 2: Constituency Ideology and Roll Call Votes

Rescaled probit coefficients (with standard errors in parentheses)
for conservative positions on roll call votes

	Minimum Wage	Civil Rights	Budget Waiver	Budget Cloture	Weighted Average
BOTH PARTIES					
Opinion (Poorest Third)	-2.01 (1.27)	-2.28 (1.45)	-2.35 (2.55)	-1.99 (1.71)	-2.12 (1.54)
Opinion (Middle Third)	5.49 (2.55)	3.57 (2.44)	7.82 (3.39)	4.00 (2.43)	4.85 (2.61)
Opinion (Richest Third)	8.93 (2.92)	6.98 (3.04)	12.59 (4.50)	5.06 (2.97)	7.72 (3.17)
Republican	1.00 (.22)	1.00 (.18)	1.00 (.24)	1.00 (.15)	1.00 (.18)
Intercept	-1.30 (.36)	-1.04 (.30)	-.80 (.26)	-.75 (.19)	-.88 (.25)
σ	.246	.273	.621	.351	
log likelihood	-23.52	-21.66	-39.59	-30.15	
pseudo-R²	.64	.67	.32	.56	
N	100	100	97	99	
REPUBLICANS					
Opinion (Poorest Third)	-1.61 (1.38)	-2.84 (1.67)	-10.27 (7.89)	-5.81 (4.47)	-2.44 (1.76)
Opinion (Middle Third)	5.58 (3.05)	6.19 (3.64)	-6.31 (14.98)	-3.57 (8.47)	4.91 (3.91)
Opinion (Richest Third)	8.12 (3.14)	8.89 (3.56)	37.31 (22.43)	21.11 (12.68)	9.18 (3.83)
Intercept	-.31 (.22)	-.21 (.26)	1.21 (1.14)	.69 (.65)	-.18 (.28)
log likelihood	-18.23	-15.62	-6.26	-6.26	
pseudo-R²	.24	.26	.42	.42	
N	45	45	42	43	
DEMOCRATS					
Opinion (Poorest Third)	-5.13 (4.94)	1.22 (3.69)	-.88 (2.95)	-1.16 (2.22)	-1.06 (2.92)
Opinion (Middle Third)	9.42 (9.95)	-.62 (3.93)	8.16 (3.70)	5.49 (3.44)	4.80 (3.94)
Opinion (Richest Third)	17.25 (10.76)	1.83 (5.94)	8.53 (4.96)	.07 (3.56)	3.53 (4.75)
Intercept	-1.98 (1.19)	-.73 (.36)	-.74 (.27)	-.69 (.20)	-.73 (.26)
log likelihood	-4.75	-4.81	-30.86	-20.41	
pseudo-R²	.45	.04	.19	.11	
N	55	55	55	56	

Table A5: The Effect of Measurement Error

on Estimated Ideological Responsiveness

Ordinary least squares and instrumental variables regression coefficients
(with standard errors in parentheses) for Poole-Rosenthal W-NOMINATE scores

	Unweighted Opinion		Opinion × Income	
	Ordinary Least Squares	Instrumental Variables	Ordinary Least Squares	Instrumental Variables
BOTH PARTIES				
101st Congress	−.66 (.73)	−.27 (1.35)	.077 (.027)	.076 (.052)
102nd Congress	−.63 (.73)	−.66 (1.35)	.073 (.027)	.085 (.053)
103rd Congress	.01 (.67)	.02 (1.23)	.041 (.024)	.044 (.048)
Weighted Average	−.40 (.71)	−.28 (1.30)	.062 (.026)	.067 (.051)
REPUBLICANS				
101st Congress	−1.17 (1.41)	.71 (2.14)	.108 (.053)	.099 (.083)
102nd Congress	−1.01 (1.47)	.44 (2.26)	.100 (.055)	.114 (.086)
103rd Congress	−.38 (1.45)	.50 (2.09)	.089 (.054)	.079 (.080)
Weighted Average	−.86 (1.44)	.55 (2.16)	.099 (.054)	.096 (.083)
DEMOCRATS				
101st Congress	−.27 (.74)	−.67 (1.58)	.059 (.027)	.080 (.062)
102nd Congress	−.35 (.73)	−.39 (1.50)	.059 (.027)	.063 (.059)
103rd Congress	.29 (.53)	.66 (1.08)	.021 (.019)	.008 (.042)
Weighted Average	−.02 (.63)	.07 (1.31)	.040 (.023)	.039 (.051)

Table A6: Turnout, Contact, and Knowledge

Descriptive statistics and ordinary least squares parameter estimates (with standard errors in parentheses) for regressions on imputed family income; sample post-stratified within states by education, race, age, sex, and work status

	Turnout	Contact	Knowledge
Descriptive Statistics			
Mean	.694	.145	.283
Standard Deviation	.461	.249	.364
Regressions on Income			
Income (in \$1000s)	.00436 (.00025)	.00228 (.00014)	.00500 (.00020)
Intercept	.550 (.010)	.069 (.005)	.117 (.007)
std err of reg	.453	.245	.352
adjusted R ²	.03	.03	.07

Table A7: Descriptions of Roll Call Votes

<p>Minimum Wage. HR2. Minimum Wage Restoration Act. Vote on final passage. April 12, 1989. 62-37.</p>
<p>Civil Rights. S2104. Civil Rights Act of 1990. To invoke cloture on the Kennedy (D-MA) amendment restoring and strengthening civil rights laws banning discrimination in employment and for other purposes. July 17, 1990. 62-38 (60 required to invoke cloture).</p>
<p>Budget Waiver. HR2707. Fiscal 1992 Labor, Health and Human Services, and Education Appropriations. Harkin (D-IA) motion to waive the Budget Act, to rescind \$3.148 billion in budget authority from unobligated balances in Defense Department accounts and transfer the budget authority to domestic programs including Head Start, Low-Income Home Energy Assistance, State Legalization Impact Assistance Grants, and Pell Grants. September 10, 1991. 28-69 (60 required to waive).</p>

Budget Cloture. S2399. Eliminate Budget Firewalls/Cloture. To invoke cloture on the motion to proceed to the bill to modify the 1990 Budget Enforcement Act to knock down the walls that prohibit the shifting of funds between defense and domestic appropriations.

March 26, 1992. 50-48 (60 required to invoke cloture).

Parental Notification. HR5257. Fiscal 1991 Labor, Health and Human Services, Education, and Related Agencies Appropriations. Harkin (D-IA) motion to table the Armstrong (R-CO) amendment to the committee amendment to HR 5257 requiring notification of a parent or legal guardian prior to an abortion on a minor.

October 12, 1990. 48-48.

Counseling Ban. S323. Family Planning Amendments/Veto Override. Passage, over President Bush's veto, of the bill to reauthorize Title X of the Public Health Service Act for five years; the bill would overturn the administration's "gag rule" and thus allow abortion counseling at federally funded family planning clinics.

October 1, 1992. 73-26 (66 required to override).

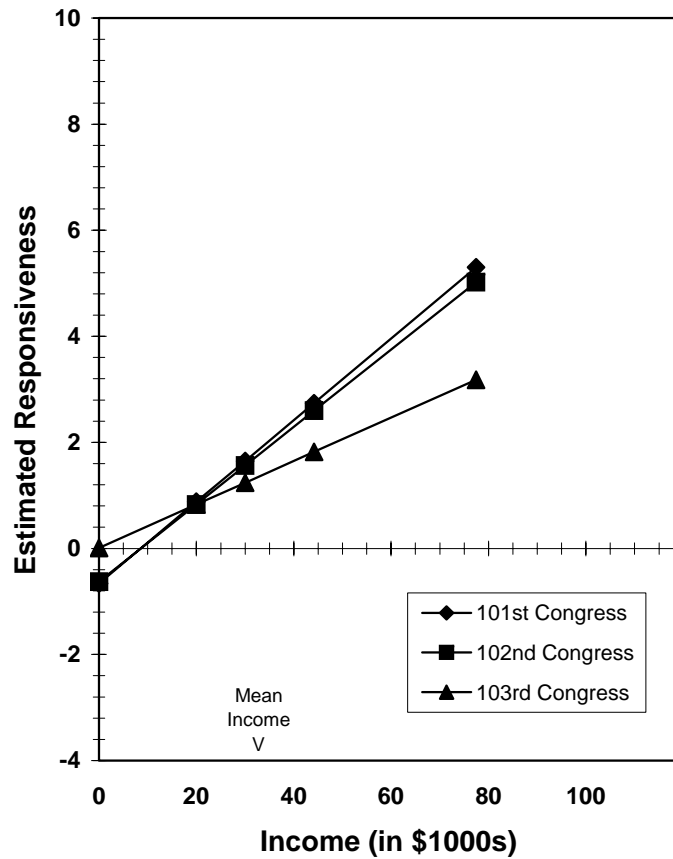
Public Funding. HR2518. Fiscal 1994 Labor, Health and Human Services, and Education Appropriations. Committee amendment to strike the Hyde amendment provisions included in the House bill that prohibit federal funds from covering abortions except in cases of rape, incest or when the life of the woman is endangered.

September 28, 1993. 40-59.

Clinic Access. S636. Abortion Clinic Access/Conference Report. Adoption of the conference report to establish federal criminal and civil penalties for people who use force, the threat of force or physical obstruction to block access to abortion clinics.

May 12, 1994. 69-30.

**Figure 1: Differential Responsiveness
(Poole-Rosenthal W-NOMINATE Scores)**



**Figure 2: Differential Responsiveness
on Ideological Roll Call Votes**

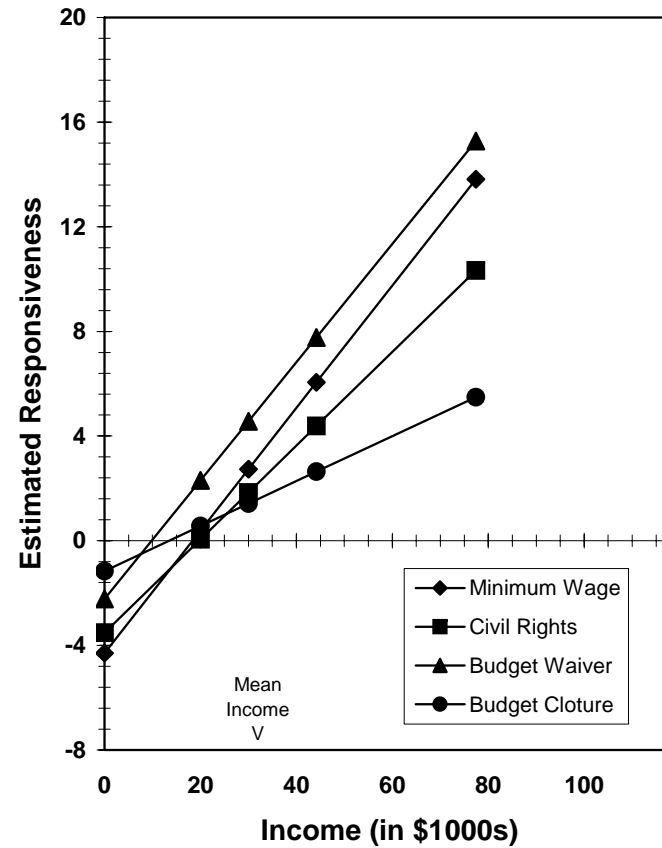


Figure 3: Differential Responsiveness on Abortion Roll Call Votes

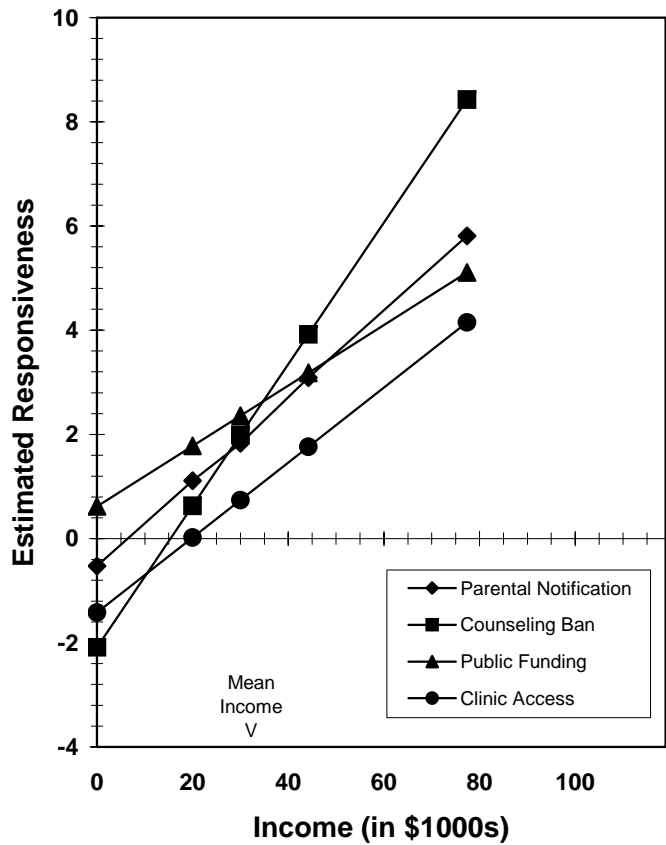


Figure 4: Party-Specific Responsiveness (Poole-Rosenthal W-NOMINATE Scores)

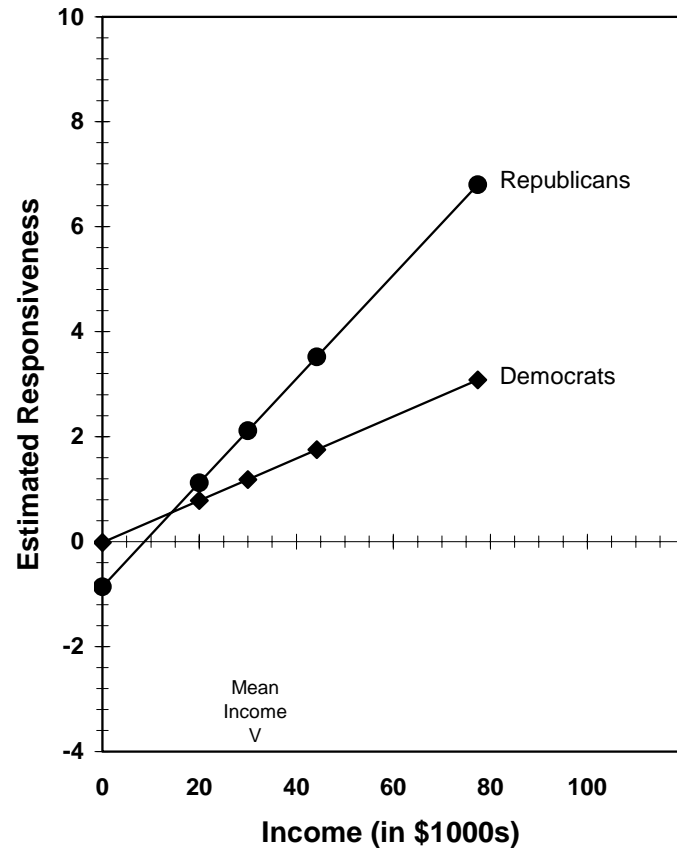


Figure 5: Party-Specific Responsiveness on Ideological Roll Call Votes

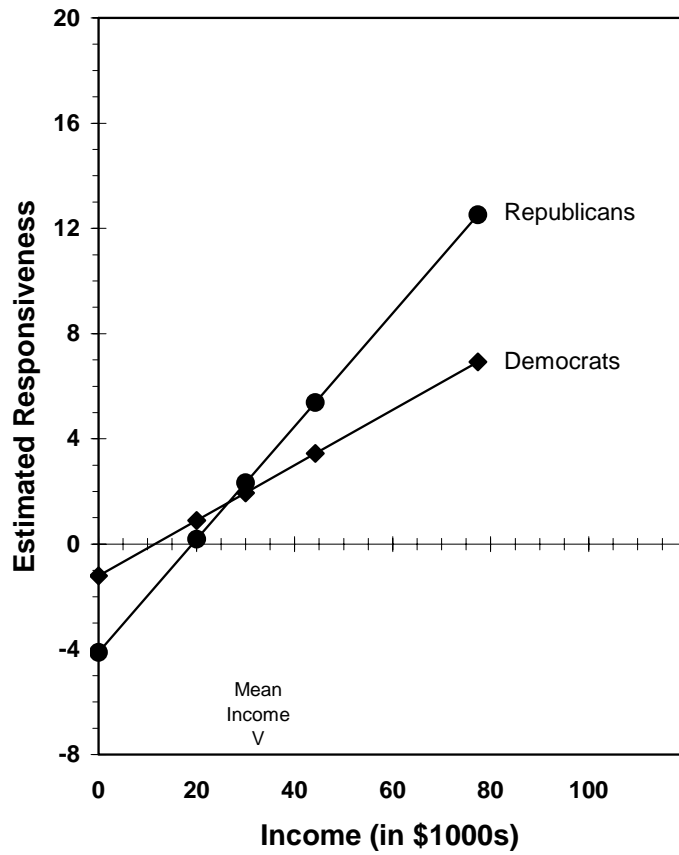


Figure 6: Party-Specific Responsiveness on Abortion Roll Call Votes

