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Understanding Cross-Pressured Legislative Voting: The ACESA Vote

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Abstract

This paper looks at the major cross-pressures facing Representatives, and how these can affect their behavior when voting on environmental legislation. This was done by conducting a roll call analysis of the American Clean Energy and Security Act, using a multi-variate logit regression analysis of eight independent variables. Results showed that the non-renewable energy production of one’s district can dampen the effect of party-line voting behavior, in addition to the significant effect of public ideology and a Representative’s own environmental preferences. However, this lessening of party influence was seen more commonly in Democrats than Republicans, and production levels of renewable energy proved to be insignificant in affecting voting behavior. These findings reveal the importance of non-ideological self interests in voting behavior, show an optimistic level of policy responsiveness, and highlight the unique challenge of passing legislation to combat climate change.
On any given roll call vote, a member of the House of Representatives is facing pressures from a wide variety of sources. Her constituency, fellow party members, and personal ideology can influence her final decision to vote “yes” or “no”. Occasionally, there are cases where these influences are in tension with one another, leading the cross-pressured Representative to decide which influence presents the most political weight.

When voting on environmental legislation, there are many cases when these cross-presures become stronger. In regards to legislation on renewable energy, a Representative from Idaho will be torn between the state’s high production of renewable electricity and their strong conservative tradition, just as a Representative from Rhode Island will face friction between the state’s large use of fossil fuels and strong liberal tradition, which usually takes the pro-environmental stance.

In 2009, during the 111th Congress, a bill called the American Clean Energy and Security Act (ACESA) was introduced to the House. It was called a “landmark bill” by the League of Conservation Voters, as it was the first time Congress attempted to make a comprehensive effort to curb climate change. Main provisions of the bill included a requirement to have 20% of electricity production come from renewable sources by 2020, higher targets for reducing emissions of carbon dioxide from carbon dioxide and other greenhouse gases, and a cap-and-trade system to be used to limit greenhouse gasses. It was passed by a vote of 219-212, the first time either chamber of Congress had successfully passed a bill attempting to curb climate change, even though it went on to be defeated in the Senate. When voting on the bill in the House, 44 Democrats and 8 Republicans did not vote their party line.
A roll call analysis on this bill can lead to better understanding of a pressing and important issue. Problems from pollution and climate change threaten food production, national security, citizen’s health, and in the long-term and dire predictions, apocalyptic disasters. Unlike bills before it, ACESA was unique due to its extensive plan to address these pressing issues, and by better understanding the voting on this bill, we can ensure bills of a similar nature can be passed in the future. Congress has the power to move the nation towards a more sustainable model, and for the good of everyone it is important to comprehend their thinking process when voting on far-reaching environmental measures, such as ACESA.

It is also the case that this bill was voted on in a highly partisan climate, and therefore, those who did not vote with their party must have had a strong reason for doing so. This speaks to a broader question of when and under what circumstances one voting influence can overpower another. In determining what caused these Representatives to defect, there is a possibility of locating an influence that will only grow in importance if we move away from a highly polarized system.

1. Literature Review

In determining the influences on Representatives voting on environmental legislation, there is a large body of work to build from. Broad categories, such as constituency, party identification and ideology, have been proven to influence Representatives to varying degrees and in varying situations. However, when one focuses these influences on one issue--environmental legislation--it is still unclear when these influences become dominant or nonexistent for members of the House of Representatives.
Roll call votes are when member’s choices are most visible and accessible, and when they are the most potentially vulnerable, as various levels of support can be withdrawn if those supporters do not agree with the member’s vote (Blass, Hickey & Theriault 2011). While voting is typically not a perfect reflection of a member’s stance on an issue—committees filter which bills will be voted on, rules and procedures determine the allowance of amendments and if the vote is on or off the record—many outside influences have various levels of effects on the member’s vote, and therefore perceived preference.

This visibility is even more pronounced when it comes to environmental policy, as Congress has taken the clear lead in shaping the policies of this issue, through passing laws and creating statues, certain committees’ jurisdictions over EPA issues, as well as a large presence of congressional oversight. This leads to a problems of “too many cooks in the kitchen,” leaving the process for passing environmental policy fragmented (Fiorino 1995). It therefore becomes important to more clearly determine the main influences involved in voting on environmental legislation, to clear already inherently muddy waters.

**Constituency influences**

Today, there is a general consensus that a legislator’s top priority is re-election (Mayhew, 1974). Therefore, frequent elections, especially for those in the House, ensure that members of Congress consider the opinions and preferences of their constituents (Blass, Hickey & Theriault 2011).

*Public Opinion*
A Representative’s vote could therefore be influenced by public opinion, or by one’s perception of public opinion. Miller and Stokes (1963) found that correlations between constituency opinion and Representative roll call behavior varied according to issue. They found that Civil Rights was highly correlated, while Foreign Affairs issues had little to none. They further discovered that Representative’s tend to overestimate their visibility to the public, and most of the time the general population knows little about a member’s stances on issues (Miller and Stokes 1963).

Kingdon (1973) built on this, by interviewing Representatives after they cast certain roll call votes and found that even though they felt the public was not paying attention, they still didn’t want to cast a vote that could be used against them in the next election. Arnold (1990) expanded this theory by conceiving of the “potential preferences” of a constituency, and proposed that Representatives used “political intuition” to adjust their roll call votes to what they believe will be the safest choice. In this conception, even “inattentive publics”—those who have neither firm policy preferences about an issue or knowledge of what Congress is considering—still have an informal impact on Representative behavior (1990, 65). Therefore, even when the environment was considered a “hard” issue—too complex for people to divide into ideological or partisan categories—Representatives still would have considered constituency opinions (Kamieniecki 1995, 147). Now that the issue plays a bigger role in public awareness and political importance, the consideration of public opinion on environmental matters should be greater.

However, others believe the extent of this impact is never quite so clear. When Achen (1978) re-ran Miller and Stokes data through more specific types of
representation—what he called proximity, centrism, and responsiveness—he found that the correlation between public opinion on Civil Rights and roll call votes was overstated, and more generally, that there was less cohesion between Representative behavior and their public’s opinions than previously thought.

Nevertheless, there is a general assumption that policies to protect and improve “public welfare,” such as the environment, are dependent upon a supportive public to be successful (Dunlap 1989). It has also been found that the majority of the public, when asked about purely environmental issues—not when forced to choose between the environment, and say, energy security—the pro-environment position is consistently in the majority. Even when the questionnaires ask the public to perform a trade-off, usually between the environment and the economy, the majority public opinion will still usually be in favor of environmental protection (Dunlap 1989).

Seat Security

The winning margins of a Representative’s seat can also be a factor in roll call voting. Kraft (1989) believes that it is possible to associate electoral security with a Representative’s spending time on environmental issues when it is unattractive to their constituency. Bartels (1991), however, found that even members in “safe” seats are still influenced by their constituents, as even Representatives elected from the narrowest possible margin would be less than 5% more responsive than a Representative without opposition.

Economic Interests

The economic interests of a constituency, such as the number of fossil fuel-burning power plants the town employs or the production of renewable energy, can also
influence a roll call vote. Bartels (1991) found direct evidence of this in his study of constituency opinion and an increase in the Reagan defense appropriations bill. He found that district level economic benefits or burdens were correlated to the amount of spending decreases or increases proposed by the Representative.

It is common to use a similar concept of costs and benefits when analyzing environmental policy. Costs can be the direct costs of compliance to regulation, such as a lost production capacity in an industry, or social costs, which are valued goods and services that are removed when resources are diverted to environmental ends. Benefits are seen as the favorable effects associated with a decision, or costs avoided, such as lack of health problems from high emissions or the aesthetic value of a clean sky (Fiorino 1995, 118). Hussain and Laband (2004) ran an experiment analyzing roll call votes on environmental legislation in the Senate and found both the presence of Representative considerations of these costs and benefits and a possible explanation for why certain Representatives, particularly northern Democrats with large fossil fuel industries, could defect from the party stance. Their findings affirmed Maloney’s (1984) earlier hypothesis, which is that votes on environmental legislation are dependent on the cost implications for each state.

Stigler (1971) expands on this further, claiming that Representative behavior is best explained by economic self-interest. When a Representative faces pressures from the general public and a more specialized sector, such as the producers, he claims that the producers are usually more “persuasive,” and therefore have a larger effect on voting behavior. By this reasoning, the interests of the renewable or non-renewable energy
production companies in the district could be the larger constituency influence than the public’s ideology.

**Party influences**

While the scope of constituency influence may be inconsistent, the influence of a Representative’s political party is fairly straightforward. In their book *Congress and Its Members*, Davidson and Oleszek (2006) highlight how party affiliation is the strongest single correlate of member’s voting decisions, especially in recent years. The percentage of times a member of the parties has voted with the party majority has gone up from around 65% in 1974 to around 95% in 2004. They also mention the “incredible shrinking middle” of the past years, where formerly substantial centrist groups, like Conservative Democrats and moderate to liberal Republicans, now make up less than 10% of the parties (290). New member socialization through party organization and leaders rewarding loyalty with committee seats and campaign support leads to this polarization, although there are certain issues that have been shown to override party ideologies—such as farm subsidies, public lands management and immigration.

There are two main schools of thought for describing party influence. The first, coined by Cox and McCubbins (1993), explain this behavior with “procedural cartel theory.” This theory that claims political parties are organized like cartels, and therefore benefit from cohesion, which is why they keep divisive issues off the agenda and reward loyalty to the party platform. The second, developed by Aldrich and Rohde (2000), is called “conditional party government,” and claims that the amount of power a party leader has is a condition of the ideological similarities among the party members.
Focusing on the environment, Dunlap and Allen (1976) found strong partisan correlations between Democrats and pro-environment voting—especially in the north—and Republicans and anti-environment voting, usually due to a pro-business orientation and aversion to government intervention, creating the most likely explanation of voting behavior for those that didn’t defect from their party. Calvert (1989) claims this strong political identification is not surprising, as “partisan conflict is often triggered by governmental intervention in the economy” and “environmental degradation is often the end product of private economic activity.” (159). This is in contradiction to earlier research by Ogden (1971), who believed natural resource management was a “consensus issue” and therefore nonpartisan. His theory, however, is not supported by the roll call behavior.

Others believe because voters have been sorted ideologically and geographically that it has created a new system, where countervailing party and constituency concerns rarely exist (Blass, Hickey & Theriault 2011). Even so, this will not take into account countervailing capabilities of one’s geography, via access to non-renewable resources, and either party or constituency concerns.

**Ideological influences**

*Personal Ideology*

Ideology is here defined as a Representative’s personal preferences on issues. Determining a Representative’s personal ideology is tricky, as they “defy both direct observation and simple operationalization,” (Blass, Hickey & Theriault 2011).

Poole and Rosenthal (2007) argue that most roll call votes are split along a continuum of liberalism and conservatism, and that because of this, most issues are
clearly divided by ideology. They further find that the presence of this continuum has been very stable since the Civil War, and that Representatives are similarly stable on the continuum, and largely, “die with their ideological boots on,” (2007, 7).

However, ideology is not often at the center of considerations due to the high correlation between ideology and party affiliation. Nokken (2000) diminished this by showing that when a Representative switched parties, they had to modify their roll call behavior in the face of new party pressures.

In his study of environmental roll call votes in the Senate, Jon Nelson (2002) found that Senators’ voting behavior was most explained by their ideology, which creates the possibility that more moderate members of each party could defect for this reason.

Environmentalism

Besides a Representative’s leanings toward liberalism or conservatism, their personal level of environmentalism can also influence their votes, in this case defined as “environmental preferences.” Kau and Rubin (1993) found that a Representative’s score on an ideological voting index, such as an LCV scorecard, was significant in determining their roll call votes.

Through these studies, the various general influences acting on Representatives as they cast a roll call vote have been well established. What is not clear, however, is when they influence a Representative, or when one influence might become more important or dominate the others. The environment has potential to create influences that are in great tension with one another. One hand, this issue has significant impact on the constituency, both by being a salient issue and also having an impact on the local economy, creating pressure for the Representative to vote for their constituency’s interests. On the other
hand, the issue is not immune to the polarization in Congress, and also has the ability to affect a Representative’s conscience, as a cleaner environment promotes good for all mankind. Determining the strength of each influence, especially the ones that caused the defectors in a highly partisan climate, can lead to a better understanding the hierarchy of roll call influences on an important issue and a landmark bill.

II. Methodology

The hypotheses this study is designed to test are as follows:

H₀: None of the independent variables influence the roll call vote.
H₁: Party Identification influences the roll call vote.
H₂: Constituency Interests influence the roll call vote.
H₃: Environmental preferences influence the roll call vote.

The statistical analysis used in this study is multi-variate logistic regression analysis due to the dichotomous dependent variable--the “yes” or “no” vote on ACESA.

Party Identification

A Representative was given a “1” if they identified as a Democrat, and a “0” if they identified as a Republican. Party identity was sourced from The Washington Post’s U.S. Congress Votes Database.

Constituency Interests

The independent variables related to constituency interests are the constituency’s ideology, the MWh, or annual megawatt-hours of electricity produced, of energy generated in 2009 by both renewable and fossil fuel sources, and a control variable of previously existing state infrastructure related to renewable energy production. This was taken from Carbon Monitoring for Action (CARMA). This variable was chosen to reflect
the scope of energy production in each district, as well as its emissions of CO2. Nuclear energy was not included in these calculations, due it be being considered neither a “renewable” or “non-renewable” source, but rather its own category. CARMA, which is a product of The Center for Global Development and the Confronting Climate Change Initiative, determined these production values by using data reported to the Environmental Protection Agency and Department of Energy by the plant operators of power plant and power companies (Carbon Monitoring for Action).

Public ideology was sourced from the American Ideology Project, complied by Tausanovitch and Warshaw (2013), who created an “MRP” score, where high values were associated with conservatism and low values with liberalism. An index was created to reflect the previously existing state infrastructure. One point was given to a state for implementing each of the following: mandatory renewable portfolio standards, public benefit funds for renewables, mandatory green pricing for electricity suppliers, financial incentives for carbon capture, emission targets, climate action plans and energy efficiency resource standards. This information was taken from the Center for Climate and Energy Solutions.

*Environmental Preferences*

The independent variables related to a Representative’s ideology are their environmental preferences and personal level of conservatism, with a control variable for seat security. Personal ideological scores were taken from the “DW-Nominate Scores” complied from Poole et al. (2009) for the 111th Congress. Seat security was expressed in the winning margins for each Representative from the 2008 Congressional elections.
The Representative’s environmental preferences were determined by the “scorecard” given to each member by the League of Conservation of Voters. In the 111th Congress, there were 13 votes on environmental issues. The vote on ACESA was counted twice due to its groundbreaking content, and was therefore removed from the calculation used here to prevent over determination of the variable. Therefore, the score was calculated by each Representative receiving a “1” for voting the pro-environmental position, the totals of which were divided by 12, the total number of votes this session not including ACESA.

III. Results

*Summary of Logistic Regression Analysis for Variables Predicting “Yes” Votes on ACESA (n=431)*

\[ \text{Log likelihood} = -81.880 \]

| Predictor                        | coeff | SE   | \( P > |z| \) |
|----------------------------------|-------|------|----------|
| Democrat                        | .693  | .756 | .360     |
| Pre-Existing State Incentives    | .343  | .119 | .004     |
| Non-renewable Energy Production | -6.27e-8 | 2.39e-8 | .009   |
| Renewable Energy Production     | 5.00e-8 | 4.18e-8 | .232   |
| Public Conservatism             | -5.02 | 1.25 | .000     |
| Environmental Preferences       | .074  | .015 | .000     |
| Seat Security                   | .004  | .011 | .731     |
| Constant                        | -7.18 | 1.39 | .000     |

Figure 1
The results show confirmations of Hypotheses 1, 2 and 3, as while party identification explains much of the voting behavior, under certain circumstances, constituent and ideological concerns caused the Representative to defect from the party stance.

The level of the constituency conservatism and a Representative’s environmental preferences tied in receiving the lowest p score, showing both were a statistically significant factor in the voting behavior.

Constituency conservatism receiving this score is not so surprising in light of Nelson’s findings that Senators were most influenced by their personal ideology when voting on environmental legislation, and as members of the House are up for election more often, it logically follows that they would be influenced more so by their public’s opinion instead of their own (2001). This also shows that the environment is an issue where constituency opinion and a Representative’s voting behavior are highly correlated, similar to the relationship Miller and Stokes found on the Civil Rights issue. The relationship was also in the expected direction, as the higher the public’s level of conservatism, the less likely it became for a Representative to vote “yes” on ACESA.

The Representative’s environmental preference received the same, statistically significant, p score as well and was also in the expected direction. The larger a Representative’s environmental preferences, or tendency to align themselves with the pro-environment vote, the more likely she was to vote “yes.” It was also found that many Democrats, eleven in total, who received perfect scores from the scorecard, still did not vote “yes” on ACESA, suggesting another variable is needed to explain their behavior.
The control variable of pre-existing state infrastructure was also found to be statistically significant.

A second model was run in which the scorecard from LCV that was used to create the “environmental preferences” variable was replaced by a DW Nominate score to create a “representative ideology” variable, which can be found in the Appendix. In this alternate model, personal ideology was statistically significant and in the expected direction: the more personally conservative a Representative is, the less likely she is to vote “yes” on ACESA. The model with the “environmental preferences” variable (Figure 1) was chosen because it was .233 percent more predictive and had a .18 percent larger reduction in error score.

In replacing the variable “personal ideology,” with the more predictive variable “environmental preferences,” party identification was no longer statistically significant. This is mostly likely explained by the high correlation between party, public ideology and environmental preferences.

<table>
<thead>
<tr>
<th></th>
<th>Party</th>
<th>Environmental Preferences</th>
<th>Nonrenewable Energy</th>
<th>Public Ideology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Party</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Environmental Preferences</td>
<td>.917</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonrenewable Energy</td>
<td>-.121</td>
<td>-.146</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Public Ideology</td>
<td>-.535</td>
<td>-.600</td>
<td>.344</td>
<td>1.00</td>
</tr>
</tbody>
</table>

**Figure 2**

As Figure 2 shows, the least correlated relationship is the one between party and non-renewable energy production, a relationship best explained by the presence of both Democratic states with high levels of non-renewable energy and also Republican states with high levels of renewable energy. Interestingly, the production level of nonrenewable
energy in each district was significantly, negatively correlated to voting “yes,” but the production level of renewable energy was not. This shows that Representatives are more concerned with the negative economic effects on their district than the positive effects, or lack of negative effects. This also confirms Arnold’s (1990) theories concerning Representatives and their fear of casting a vote that could be used against them, as they were more strongly influenced by the production sector that would be hurt by the bill than the sector that would be helped. Nonrenewable energy is also a larger and older industry, and thus affects more jobs and has more resources available to it to potentially influence a Representative.

Figure 3 shows the relationship between nonrenewable energy production, party identification, and the probability of voting “yes” on the bill. It seems like the influence of party is reduced when the non-renewable energy production variable is entered, dampening the effect of being Democrat. Thus, it appears that as Democratic districts produce larger levels of non-renewable energy, the more likely their Representative becomes to defect from the party stance and vote “no.” Similarly, the effect of low non-renewable energy production seems to dampen the effect of being Republican. Representatives in Republican districts that produce large levels of non-renewable energy are virtually guaranteed to vote “no,” and those with a higher probability of voting yes have little to no non-renewable energy production. This shows the ability of a specific constituency influence, in this case, non-renewable energy production, to override the influence of party identification on voting behavior.
The appearance of Figure 3 also suggests an interaction might be taking place between party and non-renewable energy production. However, after running the interaction, the new variable (party*nonrenewable) was not statistically significant, suggesting that the simpler model works.

Further, the high p score from “environmental preferences” suggests a possible intervening relationship, with “environmental preferences” being the intervening variable between a possible unknown and the vote on ACESA. After running a multivariate regression with “environmental preferences” as the dependent variable, the independent variables nonrenewable energy production and the public’s level of conservatism proved statistically significant. This indicates the possibility that both a Representative’s nonrenewable energy production levels and constituency opinion affect her environmental preferences, which, in turn, affect her voting behavior on environmental legislation.
Summary of Multivariate Regression Analysis for Variables Predicting “Environmental Preferences (n=431)"¹

R-squared: .364

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Coef.</th>
<th>SE</th>
<th>T</th>
<th>P&gt;T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Existing State Incentives</td>
<td>.442</td>
<td>1.00</td>
<td>.44</td>
<td>.659</td>
</tr>
<tr>
<td>Nonrenewable Energy Production</td>
<td>3.04e-7</td>
<td>1.98</td>
<td>1.72</td>
<td>.087</td>
</tr>
<tr>
<td>Renewable Energy Production</td>
<td>1.68e-7</td>
<td>3.40</td>
<td>-.490</td>
<td>.622</td>
</tr>
<tr>
<td>Public Level of Conservatism</td>
<td>-88.4</td>
<td>6.534</td>
<td>-13.5</td>
<td>.000</td>
</tr>
<tr>
<td>Constant</td>
<td>55.86</td>
<td>4.33</td>
<td>12.88</td>
<td>.000</td>
</tr>
</tbody>
</table>

Figure 4

The model used from this analysis correctly predicts Representative votes on environmental legislation 91.2% of the time. This rate gives the model an 82.1% reduction in error score. It has also identified important ideological and constituency influences that were able to overcome the influence of party identification in an extremely partisan environment, influences that will only increase in importance as the political climate becomes less polarized.

IV. Discussion

In doing this narrow study of the American Clean Energy and Security Act, the factors that are influential in determining votes on environmental legislation were brought to light, revealing the challenges in passing widespread reform to combat the pressing threat of climate change. While it is common knowledge that the current highly partisan climate in Congress makes passing any kind of legislation difficult, the narrow

¹ * Democrat was removed as a variable due to multi-co-linearity
margin by which the bill was passed, even with a large Democratic majority in the House, suggests simple party affiliation cannot completely explain Representative behavior. Party’s ability to constrain voting behavior is weakened when non-renewable energy production is introduced.

For those concerned with the widening of party divisions and its controlling effect on Representatives, this is good news. Even with strong polarization, certain constituency interests --in this case, the energy industry in one’s district—can override party interest, making the Representative more accountable to their public. In attempting to predict a vote in the House, it seems prudent to control for non-ideological self-interests, as these have been shown to dampen the control of one’s party. These findings give hope for those concerned with strong partisan ties lessening a Representative’s responsiveness to her constituents, as when a Representative’s district will be harmed economically, they have been shown to vote against their party.

For those concerned with curbing climate change, however, this is bad news. Even when the House was stacked in favor of the pro-environment position, the bill was only narrowly passed and went on to die in the Senate, perhaps because as they are up for election less frequently, Senators are less responsive to the influences of constituency interests.

The statistical significance of non-renewable energy production, and the lack of statistical significance of renewable energy production, can be used to partly explain the thinking of Representatives. In the modern American Congress, it seems Representatives are more concerned with the “sticks” of bills instead of the “carrots.” Members who had district industries that would have been hurt by the bill’s passage were more influenced
by this fact in their voting behavior, than members who had district industries that would have been helped. In our current climate, it seems the negative effects of a bill are more persuasive than the positive effects.

Findings also present a conundrum: in order for a Representative to vote “yes” on a bill curbing non-renewable energy production, they must already have low non-renewable energy production. This presents a unique problem that will be difficult to overcome in order to battle climate change and promote cleaner energy. In passing environmental legislation, environmental practices will need to already be in place to ensure that the bill will pass.

This could also be used to pass the burden onto state legislation. According to findings, structures within each state can have significant impacts on the voting behavior of the Representative. If individual states become more active in passing state-level incentives to promote cleaner energy, it makes their respective Representative more likely to pass wider, national legislation. A burden can also be placed on media and lobbying, as the consistently high significance of the public’s level of conservatism shows that the importance the public places on the environment can be influential in passing environmental legislation.

These crosscutting pressures that are capable of lessening strict party lines can be applied to other policy areas. The economic implications of immigration reform would be an interesting and important area for future research.

In summation, the cross-pressures of party and the economic interests of one’s district were shown to be a significant factors in passing the ground-breaking American Clean Energy and Security Act, and will most likely be significant in passing other areas
of reform. Findings from this narrow roll call analysis showed the challenges in passing climate change reform, but also showed that even extreme levels of partisanship can be dampened by the self-interests of a Representative’s district. However bleak the current political climate may seem, this analysis shows that Representatives—whatever their true motives—do still take the welfare of their constituency into account when casting roll call votes.

V. Appendix
A. Summary of Logistic Regression Analysis for Variables Predicting “Yes” Votes on ACESA (n=431) with “Representative Conservatism” replacing “Environmental Preferences”

Log likelihood= -93.89

| Predictor                           | coeff  | SE    | P>|z| |
|-------------------------------------|--------|-------|-----|
| Democrat                            | 1.81   | 1.09  | .096|
| Non-Renewable Energy Production     | -5.43e-8 | 2.42e-8 | .025|
| Renewable Energy Production         | -1.62e-8 | 3.22e-8 | .615|
| Public Conservatism                 | -5.34  | 1.23  | .000|
| Representative Conservatism         | -3.02  | 1.22  | .013|
| Pre-existing State Incentives       | .287   | .113  | .011|
| Seat Security                       | -.006  | .016  | .732|
| Constant                            | -1.53  | 1.48  | .301|

B. Measurements

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democrat</td>
<td>The political party to which a Representative belongs. A Representative received a “1” if she was a Democrat and a “0” if she was a Republican. Information sourced from The Washington Post’s U.S. Congress Votes Database.</td>
<td>0</td>
<td>1</td>
<td>.59</td>
<td>.49</td>
</tr>
<tr>
<td>Environmental Preferences</td>
<td>A Representative’s tendency to vote “yes” on bills that are considered “pro-environment.” Taken from twelve roll call votes that concerned the environment during the first session of the 111th Congress. For each bill, a Representative was given a “1” if she voted “pro-environment,” and “0” if she voted against. The</td>
<td>0</td>
<td>100</td>
<td>61.95</td>
<td>41.58</td>
</tr>
</tbody>
</table>
Scores from each bill were then added together and an average score was found.

<table>
<thead>
<tr>
<th>Non-renewable Energy Production</th>
<th>The MWh of energy produced by fossil fuels in the congressional district in 2009. Information sourced from Carbon Monitoring for Action (CARMA), which relied on information reported to the Environmental Protection Agency and Department of Energy by the power plant operators themselves to create their database.</th>
<th>0</th>
<th>56,000,000</th>
<th>5,992,137</th>
<th>8,730,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-existing State Incentives</td>
<td>An index was created using information from the Center for Climate and Energy Solution’s Publication “State Action.” Each state received “1” point for implementing each of the following measures encouraging reduction in greenhouse gases and supporting renewable energy: mandatory renewable portfolio standards, public benefit funds for renewable energy, mandatory green pricing for electricity suppliers, financial incentives for carbon capture, emission targets, climate action plans and energy efficiency resource standards. The points were then added together.</td>
<td>0</td>
<td>7</td>
<td>3.76</td>
<td>1.80</td>
</tr>
<tr>
<td>Public Conservatism</td>
<td>The public level of conservatism was found on the American Ideology Project’s website, the scores of which were compiled by Chris Tausanovitch and Christopher Warshaw. They used an original survey that allowed them to jointly scale the policy preferences of respondents to seven recent, large-scale national surveys using an item-response theory (IRT) model, as well as</td>
<td>-1.08</td>
<td>.49</td>
<td>-.029</td>
<td>.289</td>
</tr>
</tbody>
</table>
pooling from other datasets. To find the estimates of the districts, they generated estimates of mean policy preferences using both simple disaggregation and multilevel regression with poststratification (MRP).

### Renewable Energy Production

The MWh of energy produced by renewable sources in the congressional district in 2009. Information sourced from Carbon Monitoring for Action (CARMA), which relied on information reported to the Environmental Protection Agency and Department of Energy by the power plant operators themselves to create their database.

<p>| | | | | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Renewable</td>
<td>Renewable Energy</td>
<td>0</td>
<td>77,000,000</td>
<td>1,185,495</td>
</tr>
<tr>
<td>Energy</td>
<td>Production</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Representative Conservatism

Scores were taken from research done by Carroll, Lewis, Lo, Poole, and Rosenthal to create a measurement called DW-NOMINATE Ideal Point Estimates via Parametric Bootstrap. Using the roll call votes of Congress members, they rated them on a scale of -1 (very liberal) to 1 (very conservative).

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Representative</td>
<td>Conservatism</td>
<td>-.731</td>
<td>1.226</td>
<td>.068</td>
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</tbody>
</table>

### Seat Security

Seat Security scores were coded as the percentage of the vote the Representative received in the 2008 Congressional elections. These percentages were found on the Election Results page of The New York Times, posted on December 9th, 2008.

<p>| | | | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Seat</td>
<td>Security</td>
<td>44.8</td>
<td>100</td>
<td>69.10</td>
</tr>
</tbody>
</table>

### C. Marginal Effects

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Marginal Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democrat</td>
<td>.593</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>3.76</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Nonrenewable Energy Production</td>
<td>$6.0 \times 10^6$</td>
</tr>
<tr>
<td>Renewable Energy Production</td>
<td>$1.2 \times 10^6$</td>
</tr>
<tr>
<td>Public Conservatism</td>
<td>-.028</td>
</tr>
<tr>
<td>Environmental Preferences</td>
<td>62.0</td>
</tr>
</tbody>
</table>

References


