# Appendix – Does partisanship explain spending patterns in congressional bill proposals?

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## Appendix 1 – Coding CBO reports

In this appendix, we describe the process we followed to code CBO reports. Figure 1A provides an example of the first page of a CBO report. The report is for S.375 (the Crow Tribe Water Rights Settlement Act of 2009). This bill, which was introduced by Senator Jon Tester (D-MT) and referred to the CBO by the Senate Committee on Indian Affairs in November of 2009, would have approved an agreement concerning water rights between the Crow Tribe and the state of Montana. Furthermore, it "would authorize the construction and rehabilitation of systems that deliver water to tribal lands and would establish a trust fund for the tribe to operate and maintain those systems." Every report follows the same structure with a summary followed by more technical information. We were chiefly concerned with recording the costs of bills, and this information was almost always contained in the summary.

Figure 1A. CBO report example

**CONGRESSIONAL BUDGET OFFICE**
**COST ESTIMATE**

November 20, 2009

# S. 375
## Crow Tribe Water Rights Settlement Act of 2009

*As ordered reported by the Senate Committee on Indian Affairs*
*on September 10, 2009*

### SUMMARY

S. 375 would approve a compact between the Crow Tribe and the state of Montana to settle tribal claims to water rights in the state. The bill also would authorize the construction and rehabilitation of systems that deliver water to tribal lands and would establish a trust fund for the tribe to operate and maintain those systems. Finally, the bill would authorize appropriations for the Department of the Interior (DOI) to develop the water systems.

Based on information from DOI and assuming appropriation of the necessary amounts, CBO estimates that implementing S. 375 would increase discretionary spending by $193 million over the 2010-2014 period and $510 million after 2014. Enacting the legislation would not affect direct spending or revenues over the 2010-2019 period. Enacting the bill would increase direct spending by $29 million after 2019.

S. 375 contains an intergovernmental mandate as defined in the Unfunded Mandates Reform Act (UMRA) because it would require the tribe to enact a tribal water code. CBO estimates that the cost of complying with the mandate would be small and well below the threshold established in UMRA ($69 million in 2009, adjusted annually for inflation).

This bill contains no private-sector mandates as defined in UMRA.

### ESTIMATED COST TO THE FEDERAL GOVERNMENT

The estimated budgetary impact of S. 375 is shown in the following table. The costs of this legislation fall within budget functions 300 (natural resources and environment) and 450 (community and regional development).

We had four coding rules: first, if estimates were given as a range of possible values (e.g. this bill will cost between $6 and $10 billion), we would always record the largest amount. Second, if a time frame was given (e.g. this bill will cost $2 billion in year x and another $4 billion in year z), we recorded the total amount over the entire period. This was very common as most reports made cost estimates over at least a 10-year period. See Figure 1A, which refers to discretionary spending over "the 2010-2014 period" and direct spending over "the 2010-2019 period" and beyond. Third, if the time frame was indefinite (e.g. this bill will cost $2 billion every year), then we would impose a 10-year window and multiple whatever the annual amount was by 10. Finally, if a bill was estimated to cost more than $0 but less than $500,000, the CBO would often use vague language to that effect (e.g. this bill will cost $500,000 or less). In these cases, we coded the bills as costing $500,000.

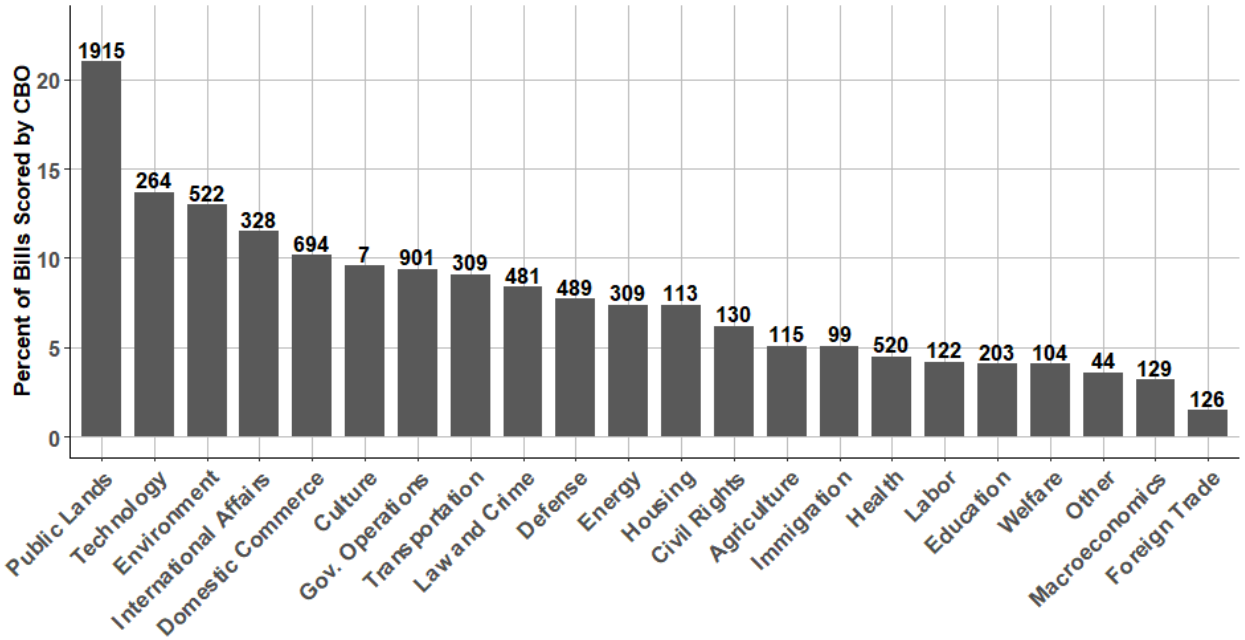
Coding many reports was straightforward. In the case of S.375, the CBO estimated that implementing the bill would "increase discretionary spending by $193 million over the 2010-2014 and $510 million after 2014." We therefore recorded $703 million for spending subject to appropriations. The report mentions that the bill would not affect direct spending until after 2019, and then would increase direct spending by $29 million. So, we recorded $29 million for direct spending, and thus the overall spending called for by the bill would amount to $732 million. CBO reports are also required to note any intergovernmental or private sector mandates and make estimates as to their costs (see the last two paragraphs of the summary in Figure 1A). We recorded these numbers as well, but do not use them in this paper. Coders were encouraged to flag complicated reports, which were then reviewed by a secondary coder to ensure accuracy.

## Appendix 2 – What bills get sent to the CBO?

In this appendix, we examine the major determinants for the CBO providing an estimate of a bill. As discussed, bills are typically referred to the CBO from congressional committees, so we want to know what elements of the bill or the member introducing the bill make it more or less likely to be sent to the CBO. As our data is a subset of overall bill proposals at a specific point in the policy process, it is worth examining that subsection more closely. Out of all the bills proposed between 1997 and 2017, only 8% were sent to the CBO for an estimate.

Since we examine issue ownership in the paper, we take a closer look at the role policy topics play in a bill getting scored. Figure 2A shows the percentage of total bills from each policy area that gets scored by the CBO. The figure lists the total number of bills introduced in that area above each column for reference. The only policy area with above 20% scored is public lands. Legislation in this area is largely non-partisan. Most public land bills deal with comparatively minor issues involving the management of existing public lands or the purchase of new tracks of land. There are also a lot of bills that get introduced in this area: public land bills are the third highest policy category of bill proposals at 9,125, only falling behind health (11,650) and government operations (9,626). Overall, the figure reveals that no policy area sees a majority (or even close) of its bills examined by the CBO.

Figure 2A. Percentage of total bills that receive a report from the CBO, by topic category




Note: Numbers above each bar are the total number of bills in each topic category that received a CBO report.

Next, we run a logistic regression predicting the likelihood that a bill is scored. Observations are all of the bills that were introduced from 1997 to 2017, and we control for characteristics of the member introducing the bill, the congressional session, and the bill topic. For ease of interpretation, the results of this logistic regression are transformed into the odds of each bill being scored for easier comprehension and shown in Table A1 below.

We see that the odds are only 0.3% higher for a Republican congressional member to get their bills scored. That the number is substantively small indicates that no specific party is better at getting their bills scored and thus throwing off our original analysis. The rest of the results are unsurprising given what we know about congressional bill passage. The majority party and committee chairs are the driving factors of which bills get scored, with over 100% increase in the odds of the bill getting scored each. Our dataset covers both Democratic- and Republican-controlled legislatures, so the power of majority party is not reliant on a single party's influence. Seniority, majority party leaders, male, white, non-Latino congressional members all have

slightly better odds of seeing their bills scored by the CBO. We also include fixed effects for state, Congressional session, and policy topics in this regression as controls.

Table 1A. Estimating the likelihood that a bill will receive a CBO report

| Variable | Odds-ratio |
|---|---|
| Republican | 0.3* (0.00) |
| Majority | 106.2* (0.03) |
| Committee chair | 114.7* (0.04) |
| Seniority | 2.3* (0.00) |
| Majority party leader | 8.7* (0.1) |
| Minority party leader | -4.8* (0.1) |
| Female | -13.1* (0.04) |
| African American | -9.6* (0.1) |
| Latino | 12.5* (0.1) |
| State | Included |
| Congressional session | Included |
| Policy topic | Included |
| Constant | -99.2* (0.2) |
| Observations | 97,575 |
| Log likelihood | -24.329.1 |
| Akaike Inf. Crit. | 48.848.3 |

* $\leq 0.05$

## Appendix 3 – Robustness tests

In the paper, we find only limited evidence of partisan differences in spending. What about ideology? Obviously, ideology and partisanship are closely related; however, it is possible that ideological differences are a better predictor of spending than party divisions. Moderate Democrats and Republicans might behave in generally the same way when it comes to spending. But more extreme members may be less likely to introduce bills going against their ideological commitment to small government in the case of conservatives, or a more expansive welfare state in the case of liberals. To test this possibility, we replicate our regression analyses from the paper using DW-Nominate as a measure of ideology rather than partisanship. Results are shown in Table 2A, which uses all spending categories, and Table 3A, which breaks out the analysis by party-owned topics. Higher values of DW-Nominate indicate more conservative members and this variable ranges from -0.916 to 1.293 in our dataset.

Table 2A. Regressions predicting the cost of legislation scored by CBO, using DW-Nominate

| Variable | Model 1 – Positive Spending (1/0) | Model 2 – Negative Spending (1/0) | Model 3 – Logged Spending |
|---|---|---|---|
| DW-Nominate | 0.744* (0.044) | 1.426* (0.163) | 0.269* (0.131) |
| Senator | 1.374* (0.069) | 0.783* (0.095) | 0.061 (0.105) |
| Congressional session | Included | Included | Included |
| Constant | 1.167* (0.110) | 0.030* (0.007) | -3.671* (0.221) |
| N | 7,709 | 7,709 | 5,035 |
| Pseudo/ Adj. $R^2$ | 0.030 | 0.035 | 0.014 |

* $\leq 0.05$

Note: Observations are bills. Models 1 and 2 are logistic regressions predicting if a legislator's bills make any spending changes. Model 3 uses OLS to estimate the size of those changes. Robust standard errors are in parentheses.

Results are similar to those presented in the paper. Here, we see that more conservative members are less likely to introduce bills that would require new spending. At first glance, the

size of this coefficient seems large, but DW-Nominate is a continuous variable and a 1-unit change accounts for almost the entire range of values. A one standard deviation change in DW-Nominate is 0.462 and an increase of this magnitude is associated with a 6% decrease in the likelihood of introducing a bill that would increase spending. DW-Nominate is also statistically significant in Models 2 and 3. More conservative members are more likely to introduce bills that would cut costs, which is consistent with the partisan hypothesis. But, as was the case when looking at partisanship, we also find that more conservative members introduce more costly bills, on average.

In Table 3A, we divide our data by Democratic- and Republican-owned issues; however, no further evidence of ideological differences emerges. In summary, neither partisanship nor ideology are reliable predictors of spending.

Table 3A. Regressions predicting the cost of legislation scored by CBO on Democratic- and Republican-owned issues, using DW-Nominate

| Variable | Model 1 – Positive Spending (1/0) | Model 2 – Negative Spending (1/0) | Model 3 – Logged Spending |
|---|---|---|---|
| | Democratic-owned topics | | |
| DW-Nominate | 0.591* (0.088) | 1.344 (0.325) | -0.138 (0.245) |
| Senator | 1.523* (0.190) | 0.725 (0.172) | -0.039 (0.188) |
| Congressional session | Included | Included | Included |
| Constant | 2.654* (0.647) | 0.021* (0.015) | -2.697* (0.375) |
| N | 1,669 | 1,669 | 1,293 |
| Pseudo/ Adj. $R^2$ | 0.050 | 0.037 | 0.013 |
| | Republican-owned topics | | |
| DW-Nominate | 0.594* (0.107) | 1.211 (0.443) | 0.159 (0.330) |
| Senator | 0.848 (0.128) | 0.950 (0.331) | 0.542* (0.276) |
| Congressional session | Included | Included | Included |
| Constant | 2.005* (0.575) | 0.034* (0.024) | -4.469* (0.539) |
| N | 944 | 648 | 636 |
| Pseudo/ Adj. $R^2$ | 0.029 | 0.028 | 0.042 |

* $\leq 0.05$

Note: Observations are bills. Models 1 and 2 are logistic regressions predicting if a legislator's bills make any spending changes. Model 3 uses OLS to estimate the size of those changes. Robust standard errors are in parentheses.

Of the 7,925 bills in our dataset, 17% passed into law. This is a much higher passage rate than for garden-variety bills, reflecting the fact that legislation that has been referred to the CBO has already made it past a major hurdle in the policy process. Our analysis in the paper includes all the bills for which we have reports (and that could be matched to records in the Congressional Bills Project). We replicate our analysis looking only at those subset of bills that passed. This is obviously an important subset. Although we failed to find convincing evidence that partisanship was structuring spending in bill proposals, it is possible that bills that ultimately passed into law

are different. Perhaps, for example, party leaders are more likely to support bills that tow the party line on spending. Table 4A shows the result of these regression, which are similar to those presented in the main text.

Table 4A. Regressions predicting the cost of legislation scored by CBO, using laws

| Variable | Model 1 – Positive Spending (1/0) | Model 2 – Negative Spending (1/0) | Model 3 – Logged Spending |
|---|---|---|---|
| Republican | 1.001 (0.001) | 1.005* (0.002) | 0.016* (0.003) |
| Senator | 1.432* (0.173) | 0.578 (0.163) | -0.608* (0.297) |
| Congressional session | Included | Included | Included |
| Constant | 0.424* (0.136) | 0.011* (0.007) | -6.635* (0.789) |
| N | 1,319 | 1,319 | 717 |
| Pseudo/ Adj. $R^2$ | 0.052 | 0.067 | 0.120 |

* $\leq 0.05$

Note: Observations are bills. Models 1 and 2 are logistic regressions predicting if a legislator's bills make any spending changes. Model 3 uses OLS to estimate the size of those changes. Robust standard errors are in parentheses.

Finally, we replicate our analysis using additional co-variates. Variable selection is always a concern with multivariate regression. Our baseline models include very few controls because many factors that might influence bill cost are also heavily dependent on partisanship and we want to avoid conflating the influence of partisanship. Here, we replicate our analysis using additional controls. These include indicators for majority party status, senators, committee chairs, majority party leadership, and minority party leadership. We use a continuous variable to control for seniority that simply counts the number of years a member has been in the US Congress. We also control for if legislators are female, if they are Latino, and if they are African American. Anzia and Berry (2011) find that women tend to propose higher spending when compared to men representing the same district. Additionally, each group (women, blacks, and Lati-

nos) focus on issues relating to their own demographic constituencies, which can lead to different spending priorities (Mansbridge 1999; Minta 2011). Table 5A shows the results for all bills and Table 6A shows the results after sub-setting the data based on issue ownership.

Table 5A. Regressions predicting the cost of legislation scored by CBO, additional co-variates

| Variable | Model 1 – Positive Spending (1/0) | Model 2 – Negative Spending (1/0) | Model 3 – Logged Spending |
|---|---|---|---|
| Republican | 0.998* (0.000) | 1.004* (0.001) | -0.0003 (0.0013) |
| Majority | 1.036 (0.075) | 1.585 (0.321) | 0.763* (0.137) |
| Committee chair | 1.301* (0.095) | 1.478* (0.224) | 0.645* (0.138) |
| Seniority | 1.000 (0.006) | 1.044* (0.014) | 0.031* (0.012) |
| Majority leadership | 0.966 (0.113) | 1.227 (0.305) | -0.227 (0.227) |
| Minority leadership | 0.796 (0.163) | 1.362 (0.830) | 0.052 (0.410) |
| Senator | 1.259* (0.078) | 0.664* (0.111) | 0.050 (0.117) |
| Female | 1.206* (0.103) | 0.779 (0.168) | -0.406* (0.154) |
| African American | 0.977 (0.150) | 1.086 (0.355) | -0.335 (0.274) |
| Latino | 0.913 (0.141) | 1.019 (0.452) | -0.350 (0.283) |
| State | Included | Included | Included |
| Congressional session | Included | Included | Included |
| Topic code | Included | Included | Included |
| Constant | 1.525 (0.492) | 0.006* (0.005) | -2.362* (0.638) |
| N | 7,550 | 7,418 | 5,025 |
| Pseudo/ Adj. $R^2$ | 0.069 | 0.124 | 0.181 |

* $\leq 0.05$

Note: Observations are bills. Models 1 and 2 are logistic regressions predicting if a legislator's bills make any spending changes. Model 3 uses OLS to estimate the size of those changes. Robust standard errors are in parentheses.

Table 6A. Regressions predicting the cost of legislation scored by CBO on Democratic- and Republican-owned issues, additional co-variates

| Variable | Model 1 – Positive Spending (1/0) | Model 2 – Negative Spending (1/0) | Model 3 – Logged Spending |
|---|---|---|---|
| | Democratic-owned topics | | |
| Republican | 0.996 (0.001) | 1.004 (0.003) | -0.002 (0.002) |
| Majority | 1.478* (0.268) | 1.245 (0.467) | 0.426 (0.261) |
| Committee chair | 1.127 (0.206) | 1.426 (0.456) | 0.515 (0.264) |
| Seniority | 0.972 (0.015) | 1.105* (0.030) | 0.033 (0.022) |
| Majority leadership | 1.142 (0.315) | 2.128 (0.952) | 0.022 (0.391) |
| Minority leadership | 0.617 (0.339) | 4.795 (5.951) | -0.742 (0.739) |
| Senator | 1.518* (0.243) | 0.549 (0.187) | -0.066 (0.206) |
| Female | 1.368 (0.281) | 1.052 (0.448) | -0.698* (0.288) |
| African American | 1.496 (0.588) | 0.504 (0.358) | -0.387 (0.556) |
| Latino | 0.677 (0.257) | - | -0.182 (0.422) |
| State | Included | Included | Included |
| Congressional session | Included | Included | Included |
| Majortopic code | Included | Included | Included |
| Constant | 6.046* (4.529) | 0.001* (0.002) | -5.708* (0.863) |
| N | 1,672 | 1,436 | 1,296 |
| Pseudo/ Adj. $R^2$ | 0.116 | 0.192 | 0.186 |
| | Republican-owned topics | | |
| Republican | 0.998 (0.002) | 1.001 (0.006) | -0.001 (0.004) |
| Majority | 1.353 (0.303) | 0.816 (0.556) | 0.467 (0.409) |
| Committee chair | 0.770 (0.162) | 8.443* (4.290) | 1.423* (0.403) |
| Seniority | 1.046* (0.021) | 0.918 (0.049) | 0.010 (0.040) |
| Majority leadership | 0.330* (0.145) | 6.661* (5.351) | 1.529 (1.135) |
| Minority leadership | 2.131 (1.704) | - | 1.940 (1.073) |

| | | | |
|---|---|---|---|
| Senator | 0.865 (0.175) | 0.436 (0.202) | -0.164 (0.377) |
| Female | 0.849 (0.234) | 1.373 (1.098) | -0.386 (0.482) |
| African American | 1.282 (0.565) | - | -1.022 (0.756) |
| Latino | 0.825 (0.380) | - | -2.178* (0.961) |
| State | Included | Included | Included |
| Congressional session | Included | Included | Included |
| Majortopic code | Included | Included | Included |
| Constant | 0.494 (0.713) | 0.008* (0.016) | -4.826 (1.518) |
| N | 935 | 460 | 636 |
| Pseudo/ Adj. $R^2$ | 0.074 | 0.163 | 0.186 |

* $\leq 0.05$

Note: Observations are bills. Models 1 and 2 are logistic regressions predicting if a legislator's bills make any spending changes. Model 3 uses OLS to estimate the size of those changes. Robust standard errors are in parentheses.

With respect to partisanship, there are two differences between these models and those presented in the paper. First, in Table 5A's Model 3, the coefficient for partisanship is no longer statistically significant. Second, in the top half of Table 6A, the coefficient for partisanship in Model 1 is no longer significant. In all, these changes do not affect our substantive conclusions. There is still very little evidence for the partisan hypothesis.