

## 1 Example 1: Hogan (2008)

In this article, Hogan looks at the effect of state legislative incumbent voting behavior on election outcomes. In particular, he expects that incumbents whose voting behavior is more partisan and extreme (rather than in line with the district median voter) will suffer in the next election. He hypothesizes that more extreme voting behavior will create an environment in which challengers can raise and spend more money in the next election. The data come from 1,816 incumbents in 14 state legislatures in 1996 and 1998. Say Hogan came to you with the model output below (from Table 2, page 866) asking for help interpreting and running diagnostic checks.

The dependent variable, `challenger.spending`, is challenger spending as a percentage of incumbent spending. Here is the five number summary of that variable (minimum, 25%, median, 75%, maximum):

```
> fivenum(challenger.spending)
[1] 0.000000 7.120222 37.732470 80.436314 665.357056
```

The main independent variable of interest is `partisan.voting`, a measure of incumbent policy voting.<sup>1</sup> For details on how it is constructed, see page 862 of the article. In short, higher values of this variable indicate extreme partisan voting behavior while smaller values indicate voting behavior in line with the preferences of the district. Here is the five number summary:

```
> fivenum(partisan.voting)
[1] -12.3685884 0.3319931 0.7136247 1.1454912 10.4172935
```

The model output in on page 866 of the article and is also listed on page 2 of this document. Your assignment has two parts

1. Interpret the results of the model. You should provide a detailed explanation of the results for his main variable of interest, while a more general interpretation of the control variables is fine.
2. Consider some potential pitfalls of the model specification. Think about actual model diagnostics as well as theoretical aspects that might be missing. On Wednesday I will bring the data and we can look at some of your ideas in more detail.

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<sup>1</sup>Note that it is called “Partisan Policy Position” in the article.

Linear Regression Model

```
ols(formula = challenger.spending ~ partisan.voting + political.party +
     major.party + legislative.leadership + party.advantage +
     past.vote + district.population + legislative.professionalism +
     chamber.competition + chamber + year, x = TRUE, y = TRUE)
```

n	Model L.R.	d.f.	R2	Sigma
1816	279.9	11	0.1428	58.55

Residuals:

Min	1Q	Median	3Q	Max
-91.32	-35.92	-10.43	20.06	592.29

Coefficients:

	Value	Std. Error	t	Pr(> t )
Intercept	98.32082	11.28413	8.7132	0.000e+00
partisan.voting	4.57970	1.21119	3.7811	1.612e-04
political.party	-3.91969	2.80737	-1.3962	1.628e-01
major.party	3.93407	3.12030	1.2608	2.075e-01
legislative.leadership	-14.86726	3.18470	-4.6683	3.261e-06
party.advantage	-0.20782	0.10353	-2.0073	4.486e-02
past.vote	-0.64541	0.09471	-6.8148	1.283e-11
district.population	-0.04577	0.02595	-1.7635	7.798e-02
legislative.professionalism	-112.79470	15.24772	-7.3975	2.116e-13
chamber.competition	0.63803	0.20106	3.1733	1.533e-03
chamber	-0.99284	4.09411	-0.2425	8.084e-01
year	4.06507	2.77838	1.4631	1.436e-01

Residual standard error: 58.55 on 1804 degrees of freedom

Adjusted R-Squared: 0.1376

## 2 Example 2: Brown, Jackson and Wright (1999)

In this example, the authors examine an indirect link between Democratic Party organization in the states and voter turnout: voter registration. Because partisan supporters can only be effective to the extent that they are registered to vote in the state, the authors hypothesize that greater control by the Democratic Party in the state will correspond to an increase in voter registration. They reason that Democrats have more incentive than Republicans to make registration easier as a means of mobilizing the “have-nots” of the state, and thus states with greater Democratic Party control will evidence higher levels of registration.

They test this hypothesis by regressing state voter registration rates in the four federal election years from 1984–1990 on a measure of control by the Democratic party in the state (`liberal.control`) as well as several control variables. When we meet on Wednesday, we will go over potential model diagnostics and other issues.

### References

- Brown, Robert D., Robert A. Jackson and Gerald C. Wright. 1999. “Registration, Turnout, and State Party Systems.” *Political Research Quarterly* 52(3):463–479.
- Hogan, Robert E. 2008. “Policy Responsiveness and Incumbent Reelection in State Legislatures.” *American Journal of Political Science* 52(4):858–873.