Of Shirking, Outliers, and Statistical Artifacts:
Lame-Duck Legislators and Support for Impeachment

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An earlier version of this note, which examined the behavior of legislators in the impeachment process more broadly, was presented at the 1999 Annual SPSA Conference and 2000 Annual APSA Conference; I appreciate the many suggestions received from participants at both meetings. I also thank Marvin Overby, Harvey Palmer, Scott Huffmon, and several anonymous reviewers for their helpful comments on previous drafts.

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Abstract

It has been previously argued that there is substantial evidence that lame-duck Republican members of Congress were less supportive of the impeachment of Bill Clinton than their colleagues who returned in the 106th Congress. I show that this conclusion—based on a marginally-significant interaction term—is actually the result of two statistical artifacts: the choice of estimator used, and the inclusion in the model of five Democratic representatives who voted for some of the articles of impeachment—most notably, Paul McHale of Pennsylvania, the only lame-duck Democrat who supported impeachment. Using the ordered logit estimator (instead of ordered probit, as was previously used), estimating the model with only Republican members included, or excluding an outlier among the Democrats results in the effect becoming statistically insignificant. The long-term evidence of shirking by impeachment supporters is also very limited. On balance, the evidence suggests that retiring Republicans did not engage in shirking when making decisions on whether to vote for impeachment.

There can be no question that the question of whether former President Clinton ought to be impeached for alleged perjury, obstruction of justice, and abuse of power was among the most salient issues of recent congressional history. Over time became clear that there had been, at least, an intensive effort by the president to keep the truth about his relationship with a former intern a secret from the plaintiff in a sexual harassment lawsuit against him. While in retrospect the issue does not appear to have affected the outcome of many congressional races,[1] there was certainly a perception at the time of the votes regarding the impeachment inquiry, particularly among Democrats who they faced difficult challengers in the upcoming election, that the president's legal problems could easily become political problems of their own. The relatively poor Republican showing in the subsequent election—resulting in the first midterm gain by an incumbent president's party in living memory—led to similar speculation about the eventual fate of Republican members who supported impeachment in marginal districts.

Rothenberg and Sanders (2000) previously examined the voting behavior of representatives on impeachment, and concluded that there was evidence that retiring Republican legislators engaged in *shirking*—in other words, that the weakening of the ties between representatives and the electorate led retiring legislators to vote more inconsistently with constituency preferences than those who remained in Congress. Hard evidence of shirking in the contemporary Congress has been relatively hard to come by, despite a theoretical basis for believing it is widespread; hence, this result is of great interest to scholars who believe that it does take place.

However, the evidence supporting this finding appears to be flawed in a number of ways. First and foremost, the choice of estimator used has a substantial impact on the statistical significance of the results—in other words, the finding is not robust across the set of appropriate estimators for their statistical model. It also appears that their conclusion of shirking among *Republicans* is the result of a *Democratic* outlier who supported impeachment, Paul McHale of Pennsylvania. When the outliers are excluded the evidence supporting the conclusion that shirking took place is substantially weakened.

Table 1: Independent Variables

Variable	Definition
Clinton 1996 Vote	Two-party support for the Clinton-Gore ticket in the constituency in the 1996 general election, expressed as a proportion of the vote.
Legislator Ideology	First dimension W-NOMINATE scores for members of the House during the 105th Congress.
Lame Duck	Coded 1 for members who did not return to the House in the 106th Congress.

1 Data and Models

A summary of the independent variables used in this analysis appears in Table 1. The dependent variable is a simple additive scale of the number of articles of impeachment supported by the member; this tally has a Cronbach's alpha of 0.95, suggesting that it can be reasonably treated as a Likert scale.

There are generally two appropriate estimators for a model with an ordinal dependent variable: ordered logit (also known to statisticians as *proportional-odds logistic regression*) and ordered probit (see McKelvey and Zavoina 1975; Liao 1994; Long 1997). Typically, social scientists treat these two approaches as interchangeable; the results presented here, however, cast doubt upon this common assumption. All of the models presented in this paper were estimated in *R* (Ihaka and Gentleman 1996; R Development Core Team 2006) with the `polr` procedure in the `MASS` package (Venables and Ripley 2002).

2 Analysis

A replication of Rothenberg and Sanders's analysis using the same specification and estimator (ordered probit) as they used for all 433 members who voted on all four of the impeachment questions produces substantially identical results, and thus is not duplicated here. As they note, the interaction between the Clinton Vote variable and the lame duck indicator approaches traditionally-accepted levels of statistical significance ($p \approx 0.067$ in a two-tailed t test), suggesting that retiring legislators did engage in shirking. The statistical significance of this interaction is the key finding underlying their argument that departing representatives behaved differently than those who stayed in Congress.

In Table 2, the only difference from the original authors' specification is that the ordered logit estimator was substituted for ordered probit. In general, both estimators are expected to produce similar

[1] However, Abramowitz (2001) argues the scandal did affect the aggregate outcome of the 1998 House elections.

Table 2: Ordered logit model of support for impeachment (all members)

Independent Variable	Coefficient (Std. Err)
Clinton 1996 Vote	−6.022**
	(2.282)
Legislator Ideology	7.585***
	(0.670)
Clinton 1996 Vote × Lame Duck	1.703
	(1.461)
Legislator Ideology × Lame Duck	−0.754
	(1.348)
μ_1	−2.253†
	(1.288)
μ_2	−1.875
	(1.298)
μ_3	−0.538
	(1.301)
μ_4	1.492
	(1.280)
Log likelihood (L)	−208.151
LR test ($\chi^2(4)$)	609.803***
Percent correctly classified	81.3%
Proportional reduction in error	64.6%

- Coefficients are ordered logit maximum-likelihood estimates. $N = 433$.
- *** indicates Pr(t) < .001, ** $p < .01$, * $p < .05$, † $p < .10$ (two-tailed test).

Table 3: Ordered probit model of support for impeachment (excluding Paul McHale)

Independent Variable	Coefficient (Std. Err)
Clinton 1996 Vote	−2.671*
	(1.232)
Legislator Ideology	4.360***
	(0.353)
Clinton 1996 Vote × Lame Duck	−0.436
	(1.394)
Legislator Ideology × Lame Duck	0.883
	(1.296)
μ_1	−0.852
	(0.699)
μ_2	−0.625
	(0.704)
μ_3	0.137
	(0.707)
μ_4	1.231†
	(0.700)
Log likelihood (L)	−202.915
LR test ($\chi^2(4)$)	616.241***
Percent correctly classified	73.8%
Proportional reduction in error	50.4%

- Coefficients are ordered probit maximum-likelihood estimates. $N = 432$.
- *** indicates Pr(t) < .001, ** $p < .01$, * $p < .05$, † $p < .10$ (two-tailed test).

results for well-conditioned problems. That is clearly not the case in this instance; while the coefficients do generally scale as expected,[2] the interaction is no longer statistically significant at conventional levels ($p \approx 0.244$ in a two-tailed test). However, as there is no reason to prefer one estimator over the other, we cannot conclude solely on the basis of these results that the original conclusions were erroneous.

The key conclusion of Rothenberg and Sanders is that Republican legislators who left Congress engaged in shirking. If that is the case, excluding Democratic legislators from the model should *strengthen* the relationship they find. However, a replication of their ordered probit model including only Republican members (not shown) has an interaction that is no longer statistically significant, and the sign of the coefficient indicates that, if anything, lame-duck legislators voted *more* consistently with constituency preferences than their colleagues who returned in the subsequent Congress.

[2]Long (1997) and others suggest that logit coefficients are generally 1.6–1.8 times larger than probit coefficients for the same model.

Why did Rothenberg and Sanders come to the conclusion that retiring Republicans engaged in shirking? One possible explanation is that at least one member of Congress *did* engage in shirking. One of the lame ducks was Democrat Paul McHale of the 15th District of Pennsylvania. McHale was something of an odd duck: one of only five Democrats to support any of the articles of impeachment, the only lame-duck Democrat to do so, the only northern Democrat to do so, and the only Democrat who supported impeachment from a district in which Bill Clinton received a plurality in the 1996 election.[3] Since McHale isn't a Republican, his presence or absence from the model should have no effect on whether or not we would conclude that Republicans engaged in shirking. Table 3 shows the results with 432 members included—in other words, the only member of the House of Representatives who voted on all four of the articles of impeachment who is excluded is McHale. Again, the interaction is statistically insignificant ($p \approx 0.755$, two-tailed) and signed in the wrong direction. Remarkably, this single outlier appears to have produced the evidence of shirking that Rothenberg and Sanders attribute to Republicans; excluding McHale from the analysis causes this evidence to disappear.[4]

3 Beyond the 1998 Mid-Term Election: Delayed Shirking?

Due to the unique timing of the votes of the articles of impeachment, members who were reelected in 1998 could still have avoided the electoral consequences of their impeachment votes in subsequent elections by retiring prior to the 2000 election—in other words, we may have seen "delayed shirking" in this case. Thus, a model similar to that of Rothenberg and Sanders was used, with those members who chose to retire before the 2000 election treated as they treated "lame ducks" in their 1998 model, on the presumption that members of Congress may have actually decided to retire before casting their impeachment votes. Models were estimated for all members and for Republicans only (not shown) using both ordered logit and ordered probit; none of the models found any statistically-significant evidence for shirking among the House

[3]Clinton received 52.9% of the two-party vote in McHale's district in 1996. In the other four Democrats' districts, Clinton received an average of 41.3% of the two-party vote in 1996.

[4]In addition to these analyses, a separate analysis was conducted using the W-NOMINATE scores for the 104th Congress as indicators of legislator ideology, to avoid the potential endogeneity problem discussed above. The interaction between Clinton 1996 vote and lame duck status is insignificant ($p \approx .204$) in this model as well, while the main effects of both legislator ideology and Clinton's vote share remain statistically significant, suggesting that the slight endogeneity resulting from the use of the 105th Congress W-NOMINATE scores as an independent variable was not problematic.

In addition, separate probit analyses of the individual votes on impeachment show no evidence of shirking among Republicans; the votes on Articles 1–3 appear to be solely motivated by legislator ideology, while votes on Article 4 were apparently motivated by both legislator ideology and constituency support for Clinton in the 1996 election.

members who served into the 106th Congress once controls were included for district presidential support and legislator ideology.

4 Conclusions

This note reviewed the finding of Rothenberg and Sanders (2000) that lame-duck Republican members of Congress engaged in shirking in the impeachment process of former President Bill Clinton. The analysis in this note suggests that they were incorrect to attribute the substantive meaning of the interaction between lame duck status and the electoral support for Clinton in the district to retiring Republican members; instead, the evidence indicates that the apparent interaction was due to the unusual behavior of Paul McHale, a lame-duck Democrat who supported impeaching the president. One representative's aberrant behavior does not suggest that shirking is widespread, particularly among members of the opposite party. The only robust statistical evidence supports the conclusion that other representatives' votes on impeachment were motivated by a combination of constituency affinity for the president and member ideology, whether considering members who retired after the 105th *or* 106th Congress.

It is nonetheless possible that some members do engage in shirking when the electoral connection is removed; certainly, the opposition to term limits by most political scientists suggests a persisting belief in shirking's existence. The increasing number of states with legislative term limits provides the ability to test this proposition (see, e.g. Carey, Niemi and Powell 2000 and Southwell 2002). It is also possible that shirking does take place in other circumstances in the contemporary Congress. However, it is fairly clear that the evidence of widespread shirking in this particular instance is weak to nonexistent—there is no systematic relationship between lame duck status and the level of attention the member paid to constituency preferences.

More generally, this note suggests that quantitatively-oriented social scientists should take care to not treat statistical packages as "black boxes" into which data is dropped. Scholars should ensure there are no outliers that are leading to artefactual results, and examine alternative specifications of both model parameters and estimators. A small amount of extra work in the data analysis phase will lead to more robust substantive findings in our discipline.

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