

Presidents, Baseball, and Wins Above Expectations: What Can Sabermetrics Tell Us about Presidential Success?

APPENDIX A: SUPPLEMENTAL INFORMATION AND ANALYSIS

Updated Regression Model to Estimate Presidential Wins Above Expectations

Party control and public approval are the key variables predicting presidential legislative success in previous models, and recent research shows that rising party polarization in recent decades conditions the relationships (Bond, Fleisher, and Cohen 2015). Thus, we estimate the following OLS regression model for the House and Senate:

$$PSS=B_0+B_1(Ptycntl)+B_2(Aprv)+B_3(Plrzn)+B_4(Ptycntl*Aprv)+B_5(Plrzn*Ptycntl)+B_6(Plrzn*Aprv)+B_7(Plrzn*Ptycntl*Aprv)$$

Where:

1. $PSS=$ *Presidential Success Score*: annual percentage of roll calls on which the president's position won;
2. $Ptycntl=$ *Party control*: 1 if President's party has a majority; 0 otherwise;
3. $Aprv=$ *President's job approval*: the mean Gallup job approval rating for the year;
4. $Plrzn=$ *Party polarization*: the mean distance between the parties on all RCs in the year;
5. $Ptycntl*Aprv=$ interaction of party control and approval;
6. $Plrzn*Ptycntl=$ interaction of polarization and party control;
7. $Plrzn*Aprv=$ interaction of polarization and approval;
8. $Plrzn*Ptycntl*Aprv=$ interaction of all three conditional variables.

Variable Descriptions and Sources

Table A.1 Variable Descriptions and Sources

Dependent variable	Description and Justification	Source
<i>Presidential Success Score</i>	The annual percentage of roll calls on which the president's position prevailed, excluding consensus wins (more than 90% supporting the president) and excluding cloture votes in the Senate. This consensus win definition differs from the 20 percent threshold used in previous work (Bond and Fleisher 1990; Fleisher and Bond 2000). The lower threshold still excludes the most routine issues, but it increases the n slightly. Cloture votes increased precipitously and became highly partisan since 2000, which greatly affects the probability of winning a roll call vote. Excluding cloture votes provides a mix of majority rule and other types of supermajority rule votes (veto overrides, suspend the rules, etc.) similar to the House (Bond, Fleisher, and Cohen 2015).	<i>Congressional Quarterly, Inc.</i> Annually 1953-2015
Independent variables		
<i>Party control</i>	Whether the president's party has majority control of the chamber (1=majority party president; 0=minority party president). Using a binary variable instead of percent of the president's party throws out information. But theory suggests that the primary benefit of majority status is control of institutional levers of power, and there is evidence that the continuous variable does not add significant explanatory power over the majority/minority dichotomy (Bond, Fleisher, and Cohen 2012; Bond, Fleisher, and Wood 2003). The party division in the Senate was a tie in 2001. With VP Cheney breaking the tie, Republicans organized the Senate. On June 6, Sen. Jeffords (R-VT) switched to caucus with Democrats. Thus, Republicans held the majority from January-June 6, and Democrats were the majority from June 7 to the end of the 107 th Congress. Bush is coded as a minority president because there were more days and more votes in 2001 when Republicans were the minority. Coding Bush as a majority president makes little difference in the results.	Library of Congress Thomas http://history.house.gov/Institution/Party-Divisions/Party-Divisions/ http://www.senate.gov/pagelayout/history/one_item_and_teasers/partydiv.htm
<i>Approval</i>	The mean Gallup job approval rating for the year adjusted to exclude DK/no opin. (%Aprv/(%Aprv+%disapr)) centered on its mean. Centering continuous variables on the means has no effect on the slopes and the overall model significance, but facilitates interpretation of conditional effects because zero has a meaningful interpretation—the effect at average approval and opinion polarization.	Gallup polls 1953-2015
<i>Party polarization</i>	The mean distance between the parties (%Dem yea -%Rep yea) on all RCs in the year excluding consensus votes (LT 10% in the minority) centered on its mean.	

Results of Regression Analysis

Table A.2 presents OLS regression results of annual presidential success rates from 1953-2014. The models perform well, explaining 89 percent of the variance in the House and 72 percent in the Senate with just three variables plus interactions. The Senate is less predictable than the House. This result is consistent with previous research and with the expectation that institutional features (statewide constituency, six-year term, and smaller size) and different rules and traditions would make the Senate more individualistic and deliberative than the House. Including the interactions significantly improves the fit in both chambers.

Table A.2
Conditioning Effects of Party Control, Polarization, and Public
Approval on Presidential Success in Congress

Annual Presidential Success Score	House	Senate
	Coef.	Coef.
Party control	0.447*** (20.20)	0.288*** (10.30)
Approval	-0.064 * (-0.52)	0.478** (3.29)
Polarization	-1.033*** (-9.01)	-0.170 * (-1.00)
Party control*Approval	0.267[#]** (1.77)	-0.418* (-2.35)
Polarization*Party control	1.365*** (9.27)	0.423[#]** (2.16)
Polarization*Approval	-2.385*** (-3.39)	-0.819 * (-0.70)
Polarization*Party control*Approval	2.256** (2.04)	-0.894 * (-0.62)
Constant	0.343*** (20.83)	0.508[#]** (22.62)
N	62	62
F(7,54)	87.63	24.16
Prob > F	0.000	0.000
R ²	0.893	0.724

Entries are OLS regression coefficients estimated with Stata 13 with robust standard errors (t-test in parentheses). ***p<.001, **p<.01, *p<.05, [#]p<.10

Diagnostic tests

Diagnostic tests found no evidence of heteroskedasticity, autocorrelation, specification error, or omitted variables:

1. Cameron and Trivedi's decomposition of IM-test (estat imtest) for heteroskedasticity ($\chi^2 = 11.12$ in the House model, 17.58 in the Senate model) not significant;

2. Durbin-Watson d-statistic ($d=1.902$ in House, 1.877 in the Senate) no evidence of positive or negative autocorrelation;
3. linktest revealed no evidence of specification error; and
4. Ramsey (1969) RESET test (ovtest) revealed no evidence of omitted variables ($F(3, 51) = 0.37$ in the House, 1.46 in the Senate).

Marginal Effects Plots of House and Senate Models

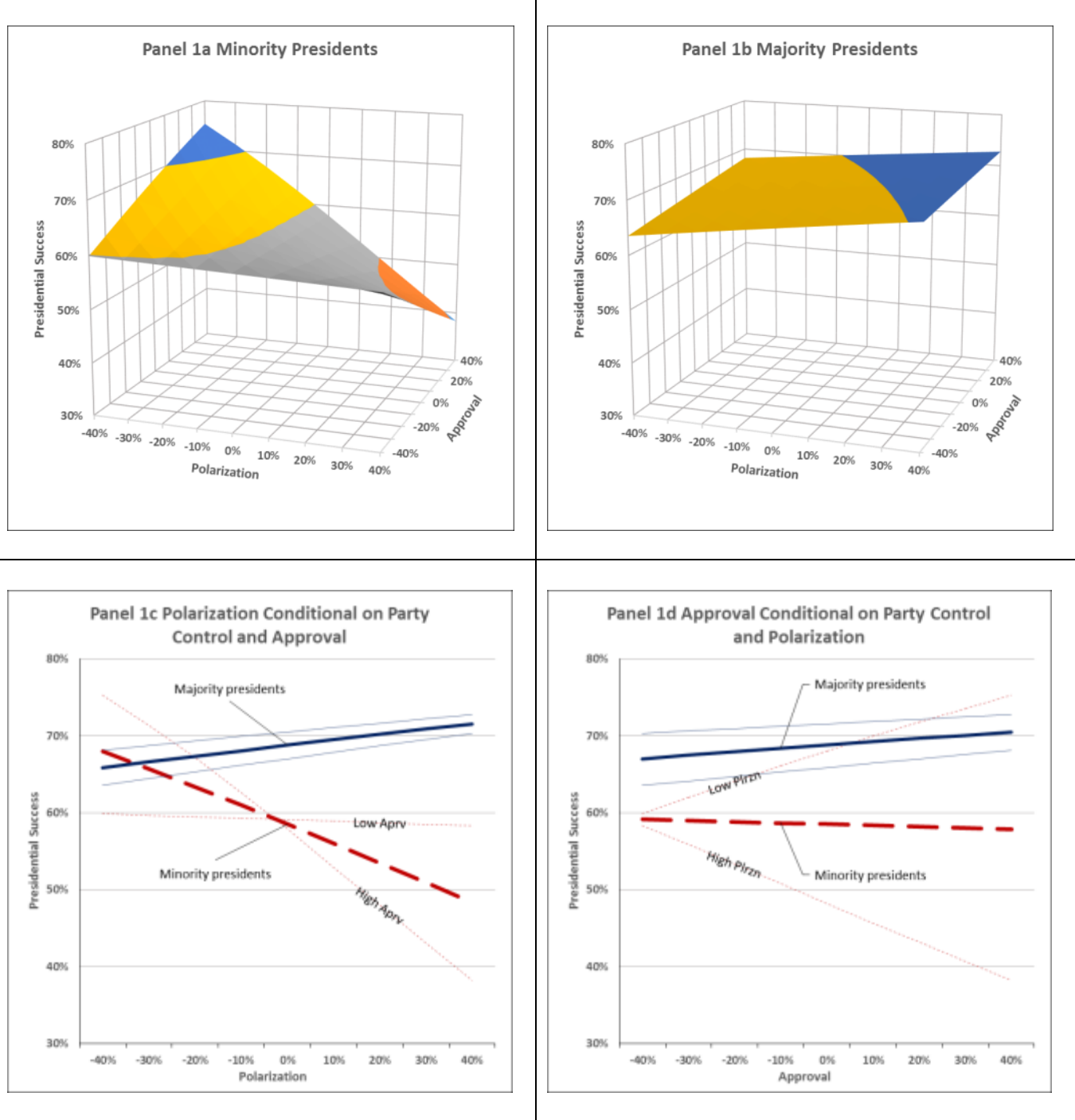
When testing for conditional effects, it is common to designate one of the variables as the conditioning variable. Such a designation is inappropriate because the effects of interaction terms are symmetrical—“when the effect of X on Y is conditional on the value of Z, the effect of Z must be conditional on the value of X.” Marginal effects plots are useful to show the symmetrical effects of interactions, (Berry, Golder, and Milton 2012). Our models test for conditional effects of two continuous variables (polarization and approval) and a dichotomous variable (party control). Showing the effects of the two continuous independent variables requires a three-dimensional plot with polarization on the x-axis, approval on the z-axis, and the dependent variable (presidential success rate) on the y-axis. We present separate three-dimensional plots for minority and majority presidents. But to see more clearly how party control conditions the effects of polarization and approval, we show relationships for majority and minority president in two-dimensional plots from two perspectives—the effects of polarization conditional on approval, and the effects of approval conditional on polarization. These graphs plot cross-sections of the three dimensional plots at low, average, and high levels of approval and polarization. They don't show the contours in the three dimensional plots, but we can see more precisely how the slopes change under different conditions.

Conditional Effects in the House

Figure A.1 shows the conditional effects of party control, polarization and presidential approval in the House. The three-dimensional plots show the conditioning effects of polarization and approval on success rates of minority presidents (Panel 1a) and majority presidents (Panel 1b). But to see relationships for majority and minority presidents on the same graph, Panel 1c shows the effects of party polarization on success conditional on whether approval is low, average, and high. At average approval, as polarization increases, the probability of winning increases for majority presidents and declines for minority presidents. Specifically, when polarization is low (around -.30), success rates are the same for majority and minority presidents. But when polarization is high (around .30), success rates are about 71% for majority presidents compared to 51% for minority presidents. Majority presidents benefit from increasing polarization at all levels of approval. The effects of polarization on minority presidents' success rates are negligible at low approval but strongly negative at high approval.

Looking at the effects of approval conditional on party polarization (panel 1d), we see that rising popularity has small positive effects increases majority presidents' at all levels of polarization. Minority presidents, on the other hand, seem to benefit from rising public approval only if polarization is low; the effects of rising approval are slightly negative at average polarization and strongly negative at high polarization. The theory underlying the popularity hypothesis does not anticipate a negative relationship. We speculate that the strong effects of party control and polarization may swamp the smaller effects of approval. If minority presidents overestimate the benefits of public approval and make fewer concessions to the majority, the error in judgment might account for the negative relationship. And when parties in Congress are highly polarized, the majority may ignore a rise in approval because if public opinion is polarized, increases in public approval come mainly from the president's own partisans, votes that majority party members are not going get anyway.

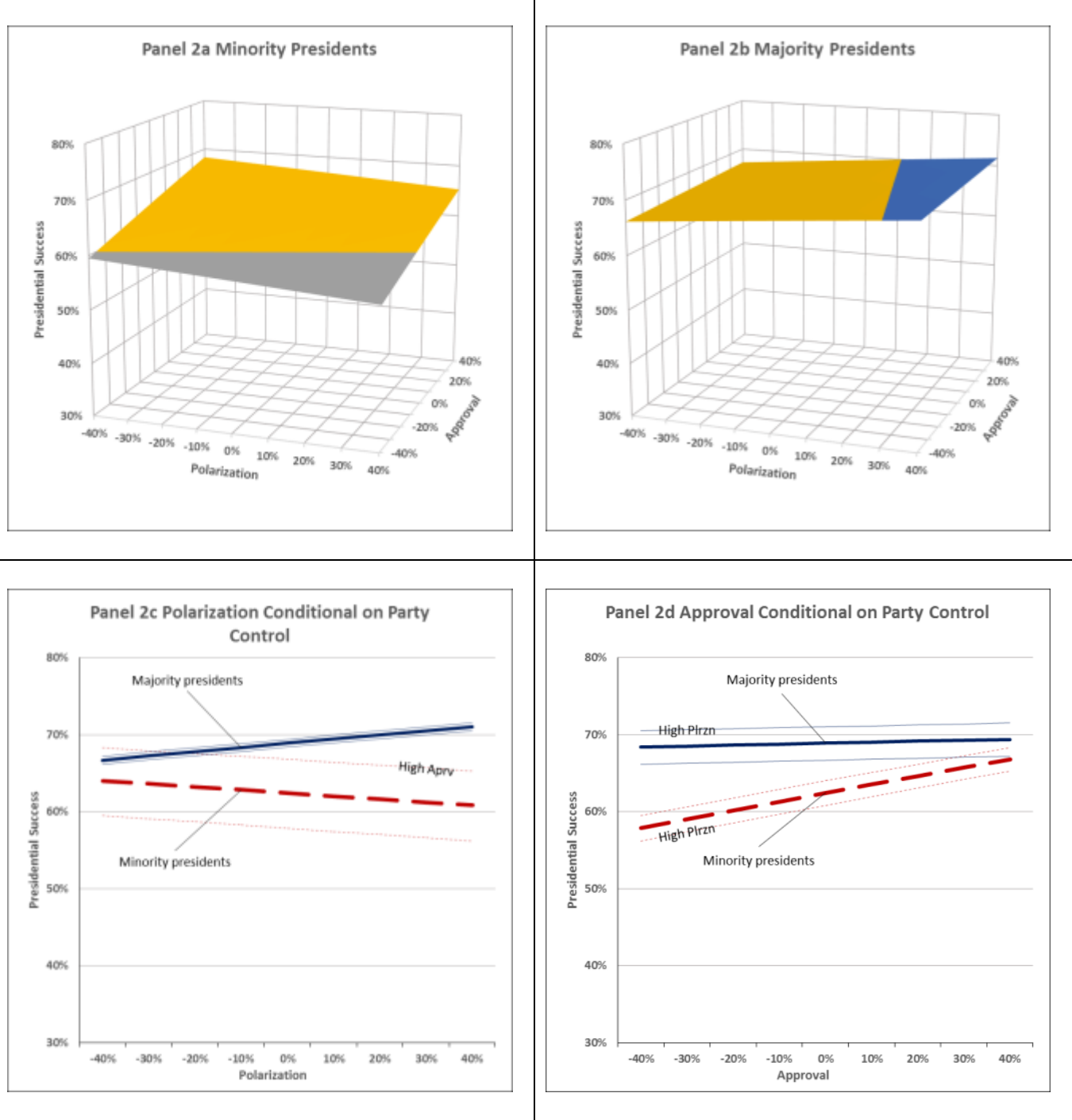
Appendix Figure A.1
Conditional Effects of Party Control, Polarization & Approval on Presidential Success in the House



Conditional Effects in the Senate

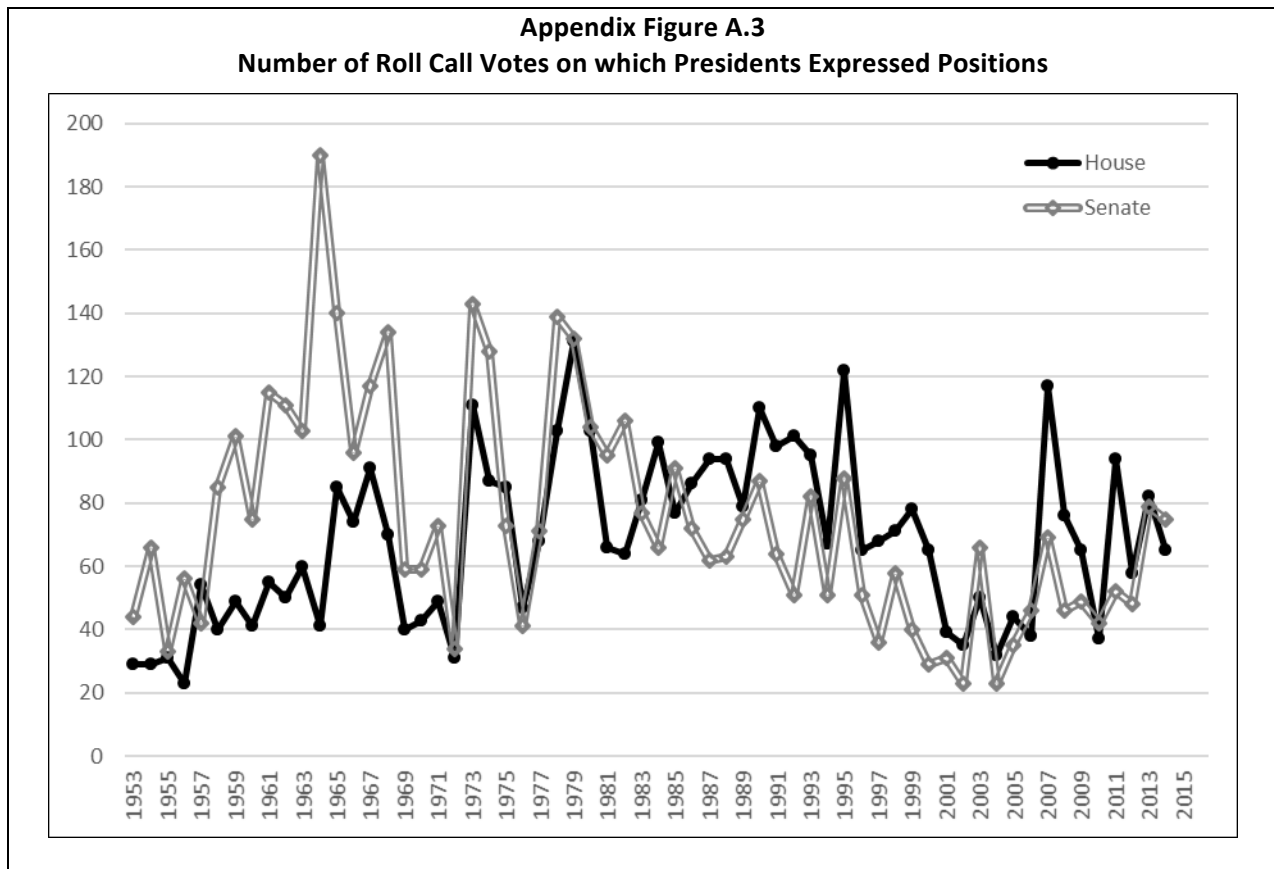
Interactions between polarization and approval are not significant in the Senate. This suggests that the only conditional effects are between party control and polarization, and between party control and approval (see Figure A.2). The effects party polarization on presidential success are similar to those in the House—as polarization increases, majority presidents win more and minority presidents win less (panel 2c). The slopes of the lines are less steep than in the House, indicating that effects of party are smaller in the Senate. Panel 2d shows the effects of approval conditional on party control. The relationships differ from those observed in the House. In the Senate, minority presidents benefit from increased public approval, but majority presidents do not. We find no significant conditional effects between party polarization and approval, which means that the slopes of the lines are not conditional on the level of polarization. Notice, however, that high party polarization increases the success rate of majority presidents and decreases success rate of minority presidents.

Appendix Figure A.2
Conditional Effects of Party Control, Polarization & Approval on Presidential Success in the Senate



No Effects of Not Dressing for All of Them

Unlike baseball players, presidents pick-and-choose which games (roll call votes) they will dress for (express a public position). Presidents appear to vary widely in expressing positions on floor votes (see figure A.3). The number of floor votes on which presidents expressed positions ranges from 23-131 in the House and 23-190 in the Senate; the means/standard deviations are 68.2/26/6 and 74.1/34.8 in the House and Senate respectively (see Table A.3).

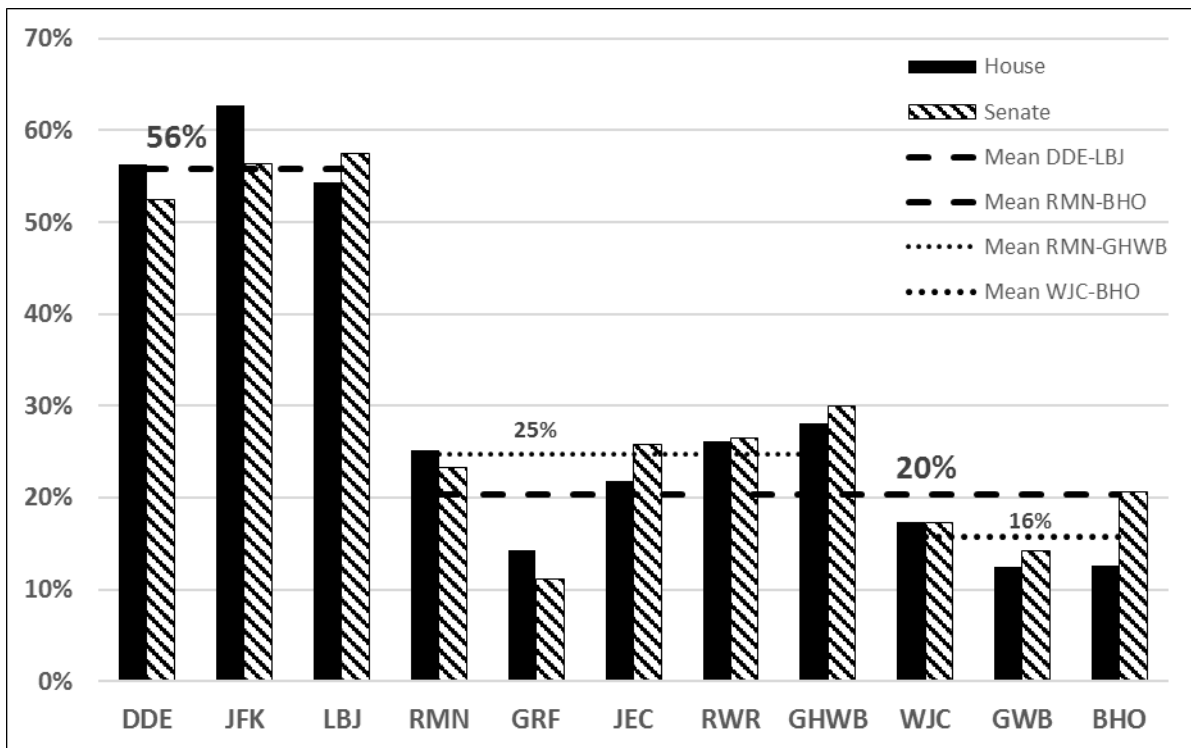


Appendix Table A.3					
Summary Statistics Presidential Positions 1953-2014					
	Obs	Mean	s.d	Min	Max
House	62	68.3	26.6	23	131
Senate	62	74.1	34.8	23	190

The raw number of presidential roll calls, however, is a misleading indicator of presidential activism because the total number of floor votes on which the president could have expressed a position varies greatly over time. For example, the 23 House votes on which President Eisenhower expressed a position in 1956 was 44 percent of all conflictual House votes that year, while the 131 votes on which President Carter expressed a position in 1979 was only 27 percent of House roll calls.

A better indicator of presidential activism is the proportion of all conflictual floor votes on which presidents expressed positions (see Figure A.4). On average, Presidents Eisenhower, Kennedy, and Johnson expressed positions on more than half (56%) of all conflictual roll calls in the House and Senate, while the average for presidents since Nixon fluctuates around one in five. Although there is variation around the means for the two periods, the fluctuations do not vary as widely as the raw number of presidential positions would suggest. We do see a slight decline in position taking for Clinton, Bush, and Obama (16%) compared to the five preceding presidents (25%), but this change pales in comparison to the 65 percent drop relative to position taking of Presidents Eisenhower, Kennedy, and Johnson.

Appendix Figure A.4
Percent of Floor Votes on which the President Took a Position



Does this mean that presidents since Nixon are much less active in legislative position taking?

Not necessarily. The sharp decline is not primarily due to a change in the position taking behavior of presidents, but rather the result of the reform in the early 1970s allowing recorded teller votes. This reform resulted in a large increase in the number of roll call votes in both the House and Senate—i.e., the raw number of presidential positions did not change systematically, but the denominator expanded dramatically.

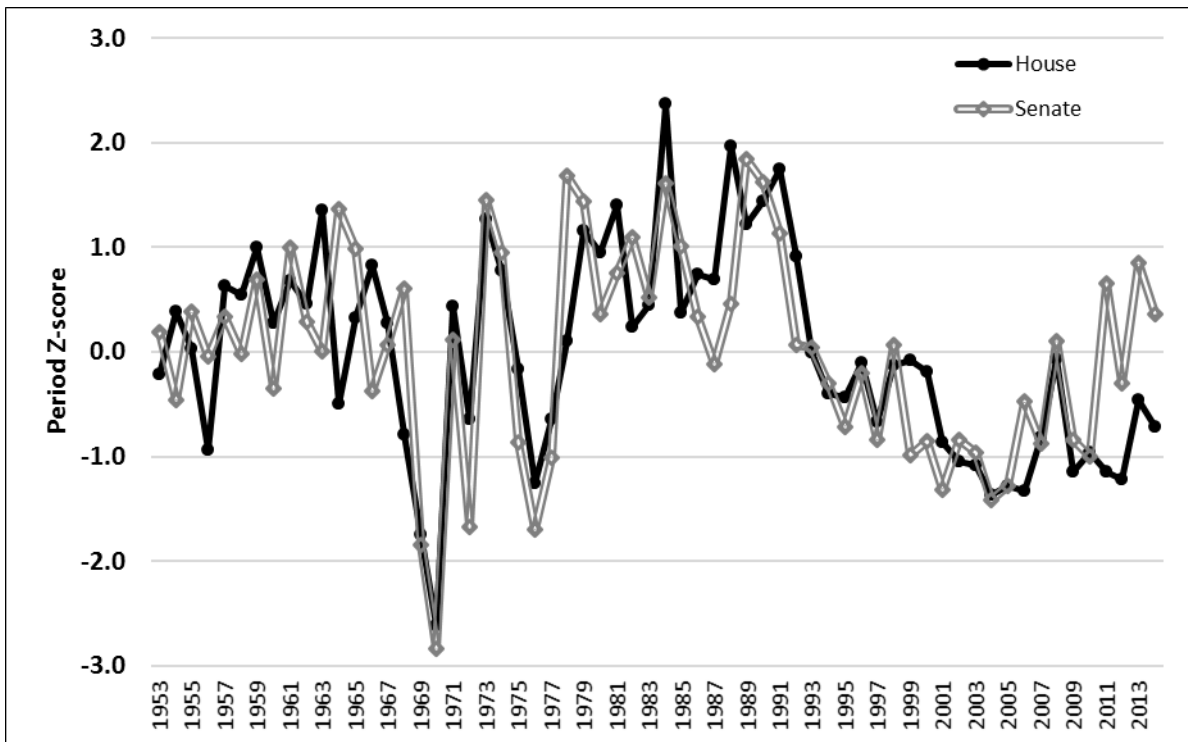
In light of the systematic change in roll call voting in Congress, neither the number of presidential roll calls nor the percentage of roll calls on which the presidents expressed a position provides a comparable indicator to determine how decisions about whether to “dress for a game” might affect the president’s success rate or WAE. To place presidential position taking each year on a common scale,

we standardized the percentage of floor votes on which the president expressed a position relative to the mean and standard deviation for pre-reform and post-reform years (see Table A.4).

Appendix Table A.4			
Mean and Standard Deviation of Presidential Roll Call			
Percentage before and after Recorded Teller Votes			
	Chamber	Mean	Std. Dev.
1953-1970	House	54.0	10.5
	Senate	51.5	11.4
1971-2014	House	19.1	6.8
	Senate	21.0	7.7

Figure A.5 plots the standardized presidential position taking variable. The House reform to have recorded teller votes formally took effect in 1971. The total number of Senate roll call votes tracks the House trend quite closely. The large outliers in 1969 and 1970 may reflect a transition leading up to the formal adoption of the reform. There is substantial variation, but we believe standardizing presidential position taking relative to the pre- and post-reform means provides a valid and reliable indicator of how active presidents were in expressing public positions on floor votes relevant to other presidents of their time.

Appendix Figure A.5
Percent of Roll Call Votes on which the President Expressed a Position
(standardized on mean/s.d. before and after recorded teller votes)



Adding position taking to the basic regression models does not affect the results. The standardized position taking variable is indistinguishable from zero, but the magnitude and significance levels of all other coefficients remain unchanged (see Table A.5). As an additional test (not shown), we also estimated the models with the raw number of presidential positions and the unstandardized percentage of all roll call votes with presidential positions; the results are unchanged.

Table A.5
The Effects of Presidential Position Taking on Presidential Success
in the Basic Regression Models

Annual Presidential Success Score	House	Senate
	Coef.	Coef.
Party control	0.448*** (19.07)	0.280*** (9.63)
Approval	-0.074 * (-0.60)	0.474** (3.13)
Polarization	-1.026*** (-8.97)	-0.162 * (-0.97)
Party control*Approval	0.274# (1.81)	-0.400* (-2.14)
Polarization*Party control	1.364*** (8.90)	0.459* (2.30)
Polarization*Approval	-2.470*** (-3.27)	-0.930 * (-0.74)
Polarization*Party control*Approval	2.346** (2.05)	-0.694 * (-0.62)
<i>Presidential positions (standardized)</i>	0.002 (0.19)	0.015 * (1.05)
Constant	0.343*** (19.90)	0.511*** (22.23)
N	62	62
F(7,54)	77.00	22.93
Prob > F	0.000	0.000
R ²	0.893	0.731

Dependent variable is the annual Presidential Success Score. Entries are OLS regression coefficients estimated with Stata 13 with robust standard errors. (t-test in parentheses). ***p<.001, **p<.01, *p<.05, #p<.10

We also looked at the effects of presidential position taking on %WAE estimated with the PE formula (see Table A.6). The standardized position taking variable is uncorrelated with %WAE ($R^2 = 0.055$ in the House and $R^2 = 0.024$ in the Senate). The other measures of presidential activism (raw number of positions each year and percent of roll call votes with a presidential position) are also uncorrelated with %WAE (not shown).

Table A.6
The Effects of Presidential Position Taking on %WAE from PE
Formula

Annual %WAE	House	Senate
	Coef.	Coef.
<i>Presidential positions (standardized)</i>	0.019 [#] (1.66)	0.012 (1.19)
Constant	0.031** (3.09)	0.024* (2.43)
N	62	62
F(7, 60)	2.77	1.42
Prob > F	0.101	0.237
R²	0.055	0.024

Dependent variable is annual %WAE estimated with PE formula. Entries are OLS regression coefficients estimated with Stata 13 with robust standard errors. (t-test in parentheses). ***p<.001, **p<.01, *p<.05, #p<.10

Thus, we could find no evidence that presidents attempt to manipulate their success rates by strategically choosing which roll call votes on which to express a position.