APPENDIX (FOR ON-LINE DISSEMINATION):

# Why Noncompetitive States are So Important for Understanding the Outcomes of Competitive Elections: The Electoral College 1868-2016

A. DATA AND ANALYSES REFERRED TO IN TEXT

**Table A1: Extending Brams and Kilgour’s Three Measures of Setup Power**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Winningness | | Vulnerability | | Fragility | | Actual EC Outcomes |
|  | Democratic | Republican | Democratic | Republican | Democratic | Republican | Republican EC Share |
| 1868 | 1 | 0 | 0 |  | 0 |  | 0.725 |
| 1872 | 1 | 0 | 0 |  | 0 |  | 0.82 |
| 1876 | 0.191 | 0.809 | 0.917 | 0.446 | 4.554 | 1.097 | 0.497 |
| 1880 | 0.308 | 0.692 | 0.881 | 0.611 | 3.061 | 1.365 | 0.577 |
| 1884 | 0.315 | 0.685 | 0.862 | 0.569 | 3.519 | 1.62 | 0.454 |
| 1888 | 0.575 | 0.425 | 0.667 | 0.785 | 2.144 | 2.905 | 0.581 |
| 1892 | 0.27 | 0.73 | 0.895 | 0.534 | 4.005 | 1.499 | 0.39 |
| 1896 | 0.979 | 0.021 | 0.095 | 1 | 0.159 | 7.419 | 0.611 |
| 1900 | 1 | 0 | 0 |  | 0 |  | 0.653 |
| 1904 | 1 | 0 | 0 |  | 0 |  | 0.721 |
| 1908 | 1 | 0 | 0 |  | 0 |  | 0.677 |
| 1912 | 0 | 1 |  | 0 |  | 0 | 0.043 |
| 1916 | 0.158 | 0.842 | 0.824 | 0.319 | 5.464 | 1.028 | 0.48 |
| 1920 | 1 | 0 | 0 |  | 0 |  | 0.761 |
| 1924 | 1 | 0 | 0 |  | 0 |  | 0.744 |
| 1928 | 1 | 0 | 0 |  | 0 |  | 0.836 |
| 1932 | 0 | 1 |  | 0 |  | 0 | 0.111 |
| 1936 | 0 | 1 |  | 0 |  | 0 | 0.015 |
| 1940 | 0 | 1 |  | 0 |  | 0 | 0.154 |
| 1944 | 0.009 | 0.991 | 1 | 0.05 | 9.85 | 0.093 | 0.186 |
| 1948 | 0.012 | 0.988 | 1 | 0.067 | 9.146 | 0.115 | 0.377 |
| 1952 | 1 | 0 | 0 |  | 0 |  | 0.832 |
| 1956 | 1 | 0 | 0 |  | 0 |  | 0.861 |
| 1960 | 0.699 | 0.301 | 0.496 | 0.799 | 1.861 | 4.325 | 0.41 |
| 1964 | 0 | 1 |  | 0 |  | 0 | 0.097 |
| 1968 | 0.824 | 0.176 | 0.383 | 0.874 | 1.053 | 4.848 | 0.595 |
| 1972 | 1 | 0 | 0 |  | 0 |  | 0.968 |
| 1976 | 0.306 | 0.694 | 0.775 | 0.494 | 4.714 | 2.092 | 0.448 |
| 1980 | 1 | 0 | 0 |  | 0 |  | 0.909 |
| 1984 | 1 | 0 | 0 |  | 0 |  | 0.976 |
| 1988 | 1 | 0 | 0 |  | 0 |  | 0.792 |
| 1992 | 0.00004 | 1 | 1 | 0.001 | 15.333 | 0.001 | 0.312 |
| 1996 | 0 | 1 |  | 0 |  | 0 | 0.296 |
| 2000 | 0.631 | 0.369 | 0.549 | 0.727 | 2.198 | 3.724 | 0.504 |
| 2004 | 0.725 | 0.275 | 0.52 | 0.854 | 1.45 | 3.773 | 0.532 |
| 2008 | 0 | 1 |  | 0 |  | 0 | 0.323 |
| 2012 | 0.191 | 0.809 | 0.939 | 0.449 | 3.592 | 0.85 | 0.383 |
| 2016 | 0.507 | 0.493 | 0.694 | 0.703 | 2.638 | 2.711 | 0.567 |

**Table AII: Regressions with *Non-Competitive Advantage* and with *Winningness* to Predict Final Republican EC seat share**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| |  |  |  |  | | --- | --- | --- | --- | |  | **Model 1** | **Model 2** | **Model 3 [Restricted]** | | *Non-Competitive Advantage* | 0.530\*\*\*  (0.018) |  |  | | *Winningness* |  | 0.553\*\*\*  (0.044) | 0.273\*\*\*  (0.067) | | *Constant* | 0.502\*\*\*  (0.009) | 0.230\*\*\*  (0.031) | 0.357\*\*\*  (0.033 | | *N* | 38 | 38 | 15 | | *Adj. R-squared* | 0.958 | 0.806 | 0.495 | | \*\*\*p < .01; \*\*p < .05; \*p < .1 Standard Errors in Parenthesis | | | | | *Note: All Regressions calculated using plus or minus 3% as the definition of competitive state. Model 3 includes only elections where Winningness is greater than 0 and less and 1.* | | | | |

B. How Analyses Would Change if We Changed the Definition of Non-Competitive State

Brams and Kilgour (2017: 110-111) discuss their choice of the domain of competitiveness as plus or minus three percentage points of two-party vote. One justification is that this range is close to the usual margin of error in state polls.  A second justification for this choice of range is a pragmatic one: there are computability issues in that, when we expand the range of competition, we have many more combinations to analyze. But there is also a good theoretical reason to favor this choice: for this range, the assumption they use that all states in this range had an *a priori* equal probability of being won by either party seems plausible.  Nonetheless, it is useful to consider the robustness of their measures to alternative specifications of the range used to define a competitive seat. In Table BI, for the four elections they consider, and for 2016, we show the comparisons between the values they derive for a plus or minus three percentage point definition and the more conventional plus or minus five percentage point definition of a competitive state.

**<< Table BI about here >>**

Changing the states that are considered non-competitive changes the number of seats from the competitive states a party needs to win the election. In the parlance of voting power literature, we might say such changes in the definition of competitive state changes the “effective” *quota*, i.e., the number of competitive EC seats a candidate needs to win above and beyond expected wins in “safe” seats (Banzhaf 1968). However, increasing the number of states defined as competitive does not give rise to an expectation of a monotonic change in the three B-K variables. It is possible that the set of new states are more (less) vulnerable or more (less) fragile than those previously included. Also, if a large state is just outside the competitive range under the narrow definition, but is now competitive under the less restrictive definition, it could increase the number of coalitions that are wins for the disfavored party, but not change anything for the leading party’s candidate.

From Table BI, we see that in some cases the changes in other variables are small, even though the number of competitive states may have changed considerably, while in other cases the differences when we change the definition of competitive state are quite large.

For example, in 2016, when we switch from a plus or minus 3 percentage point definition of competitive to a plus or minus 5 percentage point definition of competitive, the election previously characterized as very close now is seen as less close.Using Brams and Kilgour’s definition of competitive, Donald Trump had a one seat EC lead in non-competitive states, and by virtue of winning the majority of the competitive EC seats, won the election. Using the more traditional plus or minus 5% definition of a competitive seat, Clinton would have had a 50 EC seat starting advantage, having 182 safe EC seats toTrump’s 132. Shifting the definition of competitive state, *Winningness* would now have predicted a Clinton victory and, given the size of the *Winningness* score (0.77), she would be predicted to win by a large margin.[[1]](#footnote-1)

Even though the number of competitive states increases by just three in 2016, as judged by *Winningness*, the Republican candidate goes from a slight favorite to a big underdog! In the states that finished with the winning candidate garnering less than 53% of the vote, if results were determined simply by flipping a fair coin, Trump would have been expected to have won 3% more of the feasible coalitions than Clinton. In contrast, if we shift our definition of competitive state to plus or minus five percentage points, Clinton would have instead been expected to won 3.3 times more coalitions under the same equiprobability assumption.

A similar dramatic shift in estimated win probabilities occurs in 2000. Bush had a slight advantage in competitive states using the B-K definition of competitive state, but he had many fewer outlets to victory under the broader plus or minus five percent definition.

2004 and 2012 offer a different kind of result. Although the number of states counted as competitive drastically increases in both years when we change the definition of a non-competitive state, changes in results are minimal. The Republican candidates in each of these elections gain a slightly higher percentage of winning coalitions, while in both cases decreasing their *vulnerability* and *fragility* among those coalitions.

Finally, let us turn to 2008. Whereas Obama had enough EC seats in the non-competitive states in 2008 using the plus or minus 3% definition,[[2]](#footnote-2) he was twelve seats shy of victory using the less restrictive plus or minus 5% definition. While Obama remained the favorite even when we expand the definition of competitive states, under the former definition, Obama’s *quota* is effectively zero in the competitive states, while under the latter definition it becomes twelve.[[3]](#footnote-3) Nonetheless, in 2008, Obama remains far enough ahead in non-competitive states that McCain would be predicted to have had virtually no chance of victory.[[4]](#footnote-4)

What seems to us to be most important is that, in both 2000 and 2016, years in which the popular vote and the Electoral College diverge, when we change the definition of competitive state to plus or minus five percentage points, the candidate with the higher *Winningness* is no longer the winning candidate. This reduced predictive power for the plus or minus five percentage point definition provides us with further justification for the choice made in the text to retain the B-K plus or minus three percentage point definition of what constitutes a competitive state.

We could also look at how a change in the definition of competitive state will change the various regression results mentioned in the text, but the results are not especially interesting. The changes are minor and parallel the insights we gain from analyzing results in Table A1, namely that going from a plus or minus 3 percentage point definition of competitive seat to a plus or minus 5 percentage point definition of competitive seat reduces the predictive accuracy of *Winningness*. See Table B2.

**<< Table B2 about here >>**

We should also note that this shift in the definition of what constitute a competitive state also reduces the predictive power of the *Non-competitive advantage* variable, but not substantially.[[5]](#footnote-5) Moreover, it does not affect the relative predictive power of *Winningness* and *Non-competitive advantage;* the latter still does better at predicting seat share, while both apparently do equally well at predicting EC outcomes treated dichotomously. [[6]](#footnote-6)

**Table BI: Comparisons of Results for the Winningness, Vulnerability, and Fragility Variables for the Republicans for a Plus or Minus Three Percentage Point and a Plus or Minus Five Percentage Point Definition of Competitive State: 2000-2016**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | **Competitive States**  **(ECvotes)** | | **Winningness**  **(Ratio)** | | **Vulnerability**  **(Ratio)** | | **Fragility**  **(Ratio)** | |
| **±3** | **±5** | **±3** | **±5** | **±3** | **±5** | **±3** | **±5** |
| 2000 | 16 (178) | 21 (221) | 1.71 | 0.50 | 0.76 | 1.47 | 0.59 | 2.00 |
| 2004 | 12 (142) | 20 (209) | 2.64 | 2.9 | 0.61 | 0.55 | 0.38 | 0.35 |
| 2008 | 7 (102) | 15 (159) | 0 | 0 |  | 125.92 |  | 1187.27 |
| 2012 | 8 (114) | 15 (193) | 0.24 | 0.35 | 2.09 | 1.85 | 4.22 | 2.83 |
| 2016 | 12 (163) | 16 (224) | 1.03 | 0.31 | 0.99 | 1.89 | 0.97 | 3.22 |
| NOTE: All ratios are REP over DEM, therefore when the ratio is 1, both candidates have the same number of winning coalitions among the competitive states. | | | | | | | | |

**Table B2: Regression Tables using the ± 5% Definition of Competitive**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **Full Model** | | **Restricted Model** | | | *Non-Competitive Advantage* | 0.568\*\*\*  (0.026) |  | 0.696\*\*\*  (0.067) |  | | *Winningness* |  | 0.551\*\*\*  (0.046) |  | 0.432\*\*\*  (0.055) | | *Constant* | 0.522\*\*\*  (0.011) | 0.255\*\*\*  (0.031) | 0.530\*\*\*  (0.016) | 0.333\*\*\*  (0.032) | |  |  |  |  |  | | *Restricted Model* | NO | NO | YES | YES | | *N* | 38 | 36 | 24 | 22 | | *Adjusted R2* | 0.929 | 0.801 | 0.821 | 0.742 | | NOTE: Restricted models only include elections where at least one competitive state could change the result. | | | | | |

C. Using Shaw and Althaus’s Classification of Battleground as a Robustness Check

We test our new variable, *Non-Competitive Advantage,* using Shaw and Althaus’s (forthcoming) classification of battleground states. Using historical records, newspaper queries, and post-election campaign interviews, Shaw and Althaus code strategies for each campaign from 1952-2016. They classify, for each campaign, which states were deemed “base” states, or non-competitive, and those which the campaigns targeted, “battlegrounds”. Using these data, research assistants coded the strategies to best reflect how the campaign viewed their prospects in the election. We conduct a robustness check by replacing the sets of competitive states (+/-3% margin of victory) with this new, ex ante measure. Because the parties often have different strategies, and thus target mostly overlapping but occasionally different states, we include any state that *either* campaign targeted. This could be considered a conservative estimate, since sometimes they target states that were clearly not winnable. We also run the data separately for each candidate’s strategy independently and report these findings in Table C3. For the non-competitive states, each party is given the shares of the EC for those states they won under the assumption that the parties would, except in only very rare occasion, accurately predict the direction of safe seats.[[7]](#footnote-7) Table II of the main text validates this assumption as plausible.

The results for the time-period 1952-2016 are very promising, as *Non-Competitive Advantage* accurately predicts all but two elections, 2000 and 2016, which of course are two of the closest elections of all time with very small populations delivering Electoral College victories for the popular vote losers. The R2 value of the regression of *Non-Competitive Advantage* predicting the Republican vote share decreases from the post-hoc measures from 0.95 to 0.73, partially because there are only half the number of elections for which we have data. Table C1 provides the summary data for calculations using Shaw and Althaus’s battlegrounds.

<< TABLE C1 ABOUT HERE >>

Shaw and Althaus’s measure has several advantages over post-hoc competitiveness. First, because they take account of actual campaign strategies, they more accurately reflect pre-election circumstances and discount any election day trends that might have made non-competitive states appear competitive or competitive battlegrounds safe. Second, in none of the elections do non-competitive states total the number of electors needed to win the election, thus guaranteeing that *Non-Competitive Advantage* correctly predicts the election winner. Thirdly, it provides a conservative estimation because campaigns generally underestimate their chances of winning, or more precisely follow strategies that allow multiple pathways to victory. Lastly, by showing that pre-election measures can accurately predict outcomes, *Non-Competitive Advantage* can be used to forecast future elections. For all the benefits, there is also the drawback that we don’t have historical data prior to 1952, and collecting data back into the 1800s is not feasible. There are also good reasons to doubt that elections before the mass media era could successfully engineer strategic campaigns to the levels we see in modern presidential elections.

We define battleground based on Shaw and Althaus’s data in three additional ways. The first way we did above was by including any state identified by *either* party as being a target. The second and third way is to only use each party’s internal classifications separately.[[8]](#footnote-8) This allows for a crude evaluation of which party was more accurate. The fourth way is to only count battlegrounds in the cases which *both* parties agree are targets. This fourth way represents a less stringent measure and will, by definition, have the fewest number of battlegrounds. Any state not targeted by both campaigns is discarded as non-competitive, allocated to that state’s victor. The regression results are shown in Table C2.

<< TABLE C2 ABOUT HERE >>

Table C3 shows the accuracy of the predictions made from the four specifications described above. All four models correctly identify 15 out of the 17 elections for which we have data. Two incorrectly identify 1968, two 2000, and all four 2016. Only 1968 is surprising, as 2000 and 2016 are both years in which the popular vote winner diverged from the Electoral College winner. In 1968, five states were allocated to “Base Wallace”, a scheme we do not account for since we only take the two-party vote. If these “Base Wallace” states were given to Nixon, this election, too, would have been correctly coded.. Model 4 is the best fitting model as judged by R2 on a regression between *Non-Competitive Advantage* and EC outcomes. This comes as little surprise because it represents the most liberal way to define battleground given the classification system developed and used here. Indeed, the number of battleground states is lowest in the fourth model, averaging just 12.6 states over the 17 election period, compared to 22.5 in model 1, 17.2 for the Democratic campaigns and 18 for the Republican campaigns. The consistent results across all four models, along with our longer time series in the main text using the post-hoc definition gives us confidence that Non-Competitive Advantage undeniably shapes campaigns in both strategy and outcomes.

**Table C1: Predicting Electoral Outcomes using Shaw and Althaus’s Battleground Classifications**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Year** | **Correctly Predicts** | **Safe Rep** | **Safe Dem** | **Non- Competitive Advantage** | **EC Outcome (REP)** | | 1952 | ✓ | 109 | 71 | 38 | 0.83 | | 1956 | ✓ | 76 | 61 | 15 | 0.86 | | 1960 | ✓ | 82 | 88 | -6 | 0.41 | | 1964 | ✓ | 5 | 113 | -108 | 0.1 | | 1968 | ✓ | 118 | 74 | 44 | 0.59 | | 1972 | ✓ | 173 | 17 | 156 | 0.97 | | 1976 | ✓ | 58 | 87 | -29 | 0.45 | | 1980 | ✓ | 94 | 39 | 55 | 0.91 | | 1984 | ✓ | 171 | 13 | 158 | 0.98 | | 1988 | ✓ | 193 | 48 | 145 | 0.79 | | 1992 | ✓ | 94 | 178 | -84 | 0.31 | | 1996 | ✓ | 118 | 137 | -19 | 0.3 | | 2000 |  | 124 | 131 | -7 | 0.5 | | 2004 | ✓ | 206 | 164 | 42 | 0.53 | | 2008 | ✓ | 139 | 200 | -61 | 0.32 | | 2012 | ✓ | 180 | 191 | -11 | 0.38 | | 2016 |  | 191 | 197 | -6 | 0.57 | |

NOTE: Battlegrounds are any state targeted by either campaign, and Safe states are defined by their post-hoc vote margin.

**Table C2: Regressing Shaw and Althaus’s Battlegrounds on Non-Competitive Advantage**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | (1) | (2) | (3) | (4) | | Non-Competitive Advantage | 1.611\*\*\* | 1.266\*\*\* | 1.043\*\*\* | 0.967\*\*\* | |  | -0.238 | -0.191 | -0.136 | -0.103 | |  |  |  |  |  | | Constant | 0.520\*\*\* | 0.529\*\*\* | 0.499\*\*\* | 0.502\*\*\* | |  | -0.034 | -0.035 | -0.032 | -0.027 | |  |  |  |  |  | | Observations | 17 | 17 | 17 | 17 | | Adjusted R2 | 0.737 | 0.728 | 0.782 | 0.845 | | Note: | \*p<0.1; \*\*p<0.05; \*\*\*p<0.01 | | | | |

NOTE: Model 1 if all battlegrounds targeted by either party. Model 2 is the Democratic targets. Model 3 is the Republican targets. Model 4 is only battlegrounds targeted by both parties.

**Table C3: Checking the accuracy of each of the Models**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Year | Model 1 | | Model 2 | | Model 3 | | Model 4 | | **EC Outcome (REP)** | | 1952 | 0.27 | ✓ | 0.27 | ✓ | 0.24 | ✓ | 0.27 | ✓ | 0.83 | | 1956 | 0.22 | ✓ | 0.22 | ✓ | 0.11 | ✓ | 0.22 | ✓ | 0.86 | | 1960 | -0.03 | ✓ | 0.07 |  | -0.09 | ✓ | -0.03 | ✓ | 0.41 | | 1964 | -0.36 | ✓ | -0.23 | ✓ | -0.33 | ✓ | -0.36 | ✓ | 0.1 | | 1968 | -0.04 | ✓ | 0.01 |  | 0.07 | ✓ | -0.04 |  | 0.59 | | 1972 | 0.42 | ✓ | 0.42 | ✓ | 0.3 | ✓ | 0.42 | ✓ | 0.97 | | 1976 | -0.17 | ✓ | -0.17 | ✓ | -0.01 | ✓ | -0.17 | ✓ | 0.45 | | 1980 | 0.26 | ✓ | 0.26 | ✓ | 0.26 | ✓ | 0.26 | ✓ | 0.91 | | 1984 | 0.69 | ✓ | 0.69 | ✓ | 0.69 | ✓ | 0.69 | ✓ | 0.98 | | 1988 | 0.32 | ✓ | 0.39 | ✓ | 0.26 | ✓ | 0.32 | ✓ | 0.79 | | 1992 | -0.09 | ✓ | -0.07 | ✓ | -0.17 | ✓ | -0.09 | ✓ | 0.31 | | 1996 | -0.15 | ✓ | -0.15 | ✓ | -0.02 | ✓ | -0.15 | ✓ | 0.3 | | 2000 | 0.02 |  | 0.02 | ✓ | -0.02 |  | 0.02 | ✓ | 0.5 | | 2004 | 0.07 | ✓ | 0.08 | ✓ | 0.07 | ✓ | 0.07 | ✓ | 0.53 | | 2008 | -0.07 | ✓ | -0.07 | ✓ | -0.07 | ✓ | -0.07 | ✓ | 0.32 | | 2012 | -0.05 | ✓ | -0.05 | ✓ | -0.02 | ✓ | -0.05 | ✓ | 0.38 | | 2016 | 0 |  | 0 |  | -0.01 |  | 0 |  | 0.57 | |

NOTE: Each of the model lists the Non-Competitive Advantage percent and checks whether it accurately predicts the EC outcome. Model 2 is the Republican campaigns, and model 3 if the Democratic campaigns.

1. Hillary Clinton won the popular vote by over 3 million votes, but still lost the Electoral College. [↑](#footnote-ref-1)
2. Few would, at the time, have believed that the outcome was certain. McCain did not; he raised and spent over $300 million dollars in his quest for the presidency, though considerably outspent by Obama**.** McCain raised $368 million to Obama’s $730 million, <http://www.opensecrets.org/pres08/> [↑](#footnote-ref-2)
3. Since we decreased the number of non-competitive states in 2008 by changing the definition, we have also increased the number of competitive ones, from 102 to 159. [↑](#footnote-ref-3)
4. McCain wins 22 of the coalitions out of 32,768 using ±5%, definition of a competitive state -- a percentage low enough to round to zero. [↑](#footnote-ref-4)
5. For example, using the plus or minus five percent definition of competitive, the *Non-Competitive Advantage* bivariate regression has an R2 of 0.92, as compared to 0.96 for the B-K definition. [↑](#footnote-ref-5)
6. Using the plus or minus five percent classification of competitive state, *Non-Competitive Advantage* accurately predicts 33/38 elections (the errors are the 1880 and 1960 elections --ones that are also mispredicted when using the ±3% competitive definition -- and the 1888, 1960, and 2016 elections); while *Winningness* incorrectly predicts between 4 and 6 elections using the plus or minus five percent classification. The reason for the “uncertainty” about the predictive power of the *Winningness* variable is that due to computational difficulties in calculating results across 2k coalitions when k is large, we were unable to provide *Winningness* calculations for the plus or minus five percentage point definition of competitive seats fortwo years: 1960 (a year that *Non-Competitive Advantage* incorrectly predicts) and for 1976. [↑](#footnote-ref-6)
7. This assumption is somewhat undercut by Clinton’s 2016 campaign, that did a very poor job of classifying states according to their competitiveness. By way of contrast, Trump correctly identified Michigan and Wisconsin as battlegrounds, where Clinton had them as Base Democratic. Trump ultimately won these two states, along with carrying 82 out of the 92 electoral votes determined by the campaigns as battlegrounds. [↑](#footnote-ref-7)
8. We classify the non-competitive states based on their post-facto popular margin, but have also tested them using the campaign’s own “base” strategies. The results were much weaker, as expected, with the Republican campaigns failing to predict 4 elections, and the Democratic campaigns missing all elections between 1952-1968, plus 1980 and 2016. These results are predictable given that campaigns are risk-adverse. Still, Non-Competitive Advantage performs extremely well over the past 10 elections regardless of which strategy is tested. [↑](#footnote-ref-8)