# research note

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

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# The Electoral College 1868-2016

# ABSTRACT

*Brams and Kilgour (2017) begin their recent essay on the Electoral College by pointing out the obvious, but nonetheless regularly neglected, fact that states that are non-competitive may have a decisive impact on Electoral College (EC) outcomes and shape the electoral strategies of the candidates in the competitive states, especially if there is asymmetry in the partisan balance in the non-competitive states. Their contribution is to offer combinatorics insights into the implications of such asymmetries in the form of three new indicators: Winningness, Vulnerability, and Fragility. They then explore the magnitude and effects of these three measures for the presidential elections of 2000, 2004, 2008, and 2012. The major contribution of this note is to extend their analyses of these measures to an additional 34 elections: every election in the modern two-party post-Civil War era from 1868 through 2016. We find the Winningness measure to predict very well over the entire set of 38 presidential elections. Inspired by their work, we also offer a new and simpler metric for partisan asymmetries in noncompetitive states and show how it can predict the expected closeness of EC outcomes as well or better than the more complex combinatorics measures they propose.*

**Keywords: Electoral College; Non-Competitive States; Voting Power; Presidential Elections**

The division between Red America and Blue America has become part of ordinary citizen’s understanding of U.S. politics.[[1]](#footnote-2) However, institutional rules such as the U.S. Electoral College structure campaigning incentives so that candidates need to allocate their limited resources and time with the goal of increasing their likelihood of gaining the needed 270 Electoral College (EC) votes Thus, the campaigning of the candidates tends to be focused on the so-called “purple states,” i.e., the competitive states where campaigning might be assumed to make a difference (Shaw 1999b; 2006; Abramowitz 2001; Fair 2009). For example, on the Sunday before election day, Donald Trump visited five states; Florida, North Carolina, Pennsylvania, New Hampshire, and Michigan. Four of the five states ended up the four closest states as measured by the final two-party vote margin. [[2]](#footnote-3) The fifth, North Carolina, had gone to the Democratic candidate in the previous two elections but was still a southern state and Republicans continued to be successful in state and federal elections.

The focus of attention on the competitive states is enhanced by the horse-race style coverage of presidential elections by the media, who refer to such states as the “battleground” states (Lipsitz 2005). Such states are the ones most likely, over the course of a campaign, to “swing” from one candidate to the other. Often such states are taken, at least implicitly, to be the ones determinative of the presidential winner, with the largest of the battleground states in terms of EC votes seen as especially critical. In contrast, outcomes in non-competitive states, because they will come as “no surprise,” tend to be treated by the media as completely uninteresting but also largely irrelevant. If indeed campaigns focus exclusively on a set of battlegrounds, other states might suffer lower citizen engagement (Gimpel et al 2007; Lipsitz and Teigen 2010), depressed voter turnout (Aldrich 1993; Duffy and Tavits 2008; Geys 2006), and worse representation (Downs 1957; Stokes 1999).

However, while results in these non-competitive states may not come as surprising, non-competitive states play an important role in shaping both outcomes and campaign strategies. The view that the states which are non-competitive are largely irrelevant has been strongly challenged by Brams and Kilgour (2017).[[3]](#footnote-4) These authors point out that each candidate’s electoral votes can be thought of as coming from two sources: non-competitive states—with outcomes effectively decided before the election—and the competitive states that support him or her on election day. But it is not simply that the EC votes received in non-competitive states are just as important in determining the presidential winner as the EC votes received in the competitive states, but also that the readily foreseeable outcomes in non-competitive states can create a “loading of the dice” in an election, by requiring the candidate with fewer expected easy victories to do remarkably well in the more competitive states in order to win.[[4]](#footnote-5) Indeed, at the extreme, we can imagine the outcomes in states essentially safe for one party might involve enough votes so as to render outcomes in the more competitive states the ones that are irrelevant. [[5]](#footnote-6)

Moreover, when there is a partisan imbalance in EC vote share expected from the non-competitive states there is also a potential for choice of (slightly) different campaign strategies by the advantaged and the disadvantaged candidate (Stromberg, 2008; Shaw and Althaus forthcoming). The trailing candidate may be forced to campaign in states with a low probability of success. Another impact of the different degrees of competitiveness across states is tied to the different levels of visible campaign activity in competitive and non-competitive states. Increased exposure to a campaign can lead to a positive impact on interest and engagement of politics, and to higher turnout, with some studies finding the differences across levels of campaign exposure particularly high for low-income individuals (Gimpel, Kaufmann, and Pearson-Merkowitz 2007; Lipsitz and Teigen 2010).

Brams and Kilgour specify an indicator, *Winningness*, of the extent to which the virtually certain outcomes in non-competitive states structure the expected outcome of the overall election in a two-candidate contest. If we, for simplicity, posit that each of the battleground states is equally likely to go for either candidate, and there are *m* such states, then *Winningness* is the proportion of the 2*m* combinations of zeroes and ones in which the candidate who is ahead in the non-competitive states is the winner (adding the seats won in competitive states found in that particular combination to the already “known” votes in the non-competitive states). The *Winningness* value for the Democratic candidate is simply one minus the *Winningnes*s value for the Republican candidate.

Note that the greater the advantage a given candidate has in the non-competitive states, the greater will be the expected proportion of the 2*m* outcomes in which that candidate is the winner of an Electoral College majority, since the candidate ahead in seats won in non-competitive states will need fewer seats won from the competitive seats to amass a winning majority than will the other candidate. For example, in 2012, with *m=*8 competitive states, under the equiprobability assumption, Brams and Kilgour point out (2017: 101) that 207 (80.9%) of the 256 splits would result in a win for Obama, whereas only 49 (19.1%) would result in a win for Romney, giving Obama 4.22 times more ways of winning than Romney.”

Brams and Kilgour (2017: 101-2) offer two other closely linked indicators that can be used to measure the extent to which outcomes are predictable: *Vulnerability* and *Fragility*. *Vulnerability* is defined as “the proportion of the coalitions in competitive states in which a single competitive state, by switching to the other candidate, either can cause a change in the winner or create a tie …;” while “*Fragility* is measured by the expected number of competitive states in a winning coalition that can disrupt victory in this way.” Both of the latter measures are well defined only for those election years in which no candidate has a large enough EC seat share in the non-competitive seats to constitute a majority of the Electoral College. Each must be calculated separately for each party. *Winningness* is defined for all elections.

Brams and Kilgour, using a definition of *non-competitive state* as one where the winner’s vote share in a two-party race is expected to be above 53%[[6]](#footnote-7), calculate *Winningness*, *Vulnerability*, and *Fragility* for four recent elections: 2000, 2004, 2008, and 2012. We extend their analysis to include all 38 presidential elections in the modern two-party era, from 1868-2016. In the next section, we focus on the most important findings of our historical analyses for the Brams and Kilgour measures, evaluating how well each of the three measures (and all three together) allow us to predict EC winners and EC seat shares in these 38 elections.

Table AI in the on-line Appendix reports the full results of our calculations. [[7]](#footnote-9) In the online Appendix, we consider how analyses would change if we changed the definition of non-competitive state.While the analyses in the Appendix show that our choice of range to define a competitive state can matter somewhat, to maximize our compatibility with Brams and Kilgour (2017), and because we think this definition is a plausible one in the context of predicting EC outcomes (see discussion below), we will use the Brams and Kilgour (2017) plus or minus three percentage point definition of competitive state in the remainder of the essay. [[8]](#footnote-10)

In the subsequent section, we offer a simple alternative measure based on the Brams and Kilgour intuition about the importance of the imbalance in partisan breakdown of EC seat shares in the non-competitive states. We show that this measure, that we label *Non-Competitive Advantage*, is as predictive of the final EC outcomes and somewhat more predictive of final EC seat percentages than any of the measures proposed by Brams and Kilgour (2017). In sum, we find both *Winningness* and *Non-Competitive Advantage* to perform very well.

***Winningness*, *Vulnerability*, and *Fragility: 1868-2016***

Over this entire period, as commonsense would predict, when *Winningness* is high, *Vulnerability* and *Fragility* are both low (with correlations ranging from -0.88 to -0.98), while the correlations between the latter two variables are highly positive (ranging from 0.80 to 0.91). See Table I. The Pearson correlations reported in Table I involving *Vulnerability* and *Fragility* are only for the elections where outcomes can be effected by what happens in the competitive states. [[9]](#footnote-11)

**<<Table I about here>>**

While the various measures proposed by Brams and Kilgour (2017) are of theoretical interest, in and of themselves, we are most interested in how these measures allow us to address the bias imposed on likely Electoral College outcomes of having a substantial proportion of seat outcomes already known in advance in a fashion that favors one political party. Brams and Kilgour note (2017: 111) that the sign on the *Winningness* advantage correctly predicts the winners in all four of the presidential contests they study. When we replicate that analysis for all 38 elections, we find that this holds for all but two elections: 1880 and 1960. This is a very good predictive performance by the *Winningnes*s variable. Even if we consider just the 17 elections where the winner was determined by the competitive states, this is a success rate of 88%.[[10]](#footnote-12)

A more difficult test for the predictive usefulness of *Winningness* and the other two variables is to ask how well they, singly or collectively*,* predict final EC seat share outcomes. Figure I plots *Winningness*, *Vulnerability*, and *Fragility* against EC final seat share. These three variables are, in fact, highly correlated with EC outcomes, with the correlation for *Winningness* at 0.90, that for Republican (Democratic) *Fragility* at -0.76 (-0.67), while that Republican (Democratic) *Vulnerability* is -0.66 (-0.81). [[11]](#footnote-13)

**<< Figure I about here>>**

We also see from the first plot in Figure I that in most years, *Winningness* is such that the outcome is expected to be determined solely by what happens in the non-competitive states, i.e., a *Winningness* values of zero or one. In the four elections analyzed in Brams and Kilgour (2017), only one, 2008, fell into this category. Had Brams and Kilgour extended their data back somewhat further in time to 1980, however, they would have found that in that election and in each of the four following elections, one of the two candidates had locked up enough votes in non-competitive states to win the election.[[12]](#footnote-14)

We have done regression analyses with all three Brams-Kilgour measures as independent variables and EC Democratic share as the dependent variable, but we do not report results for these regressions since, as expected, the very high correlations among the three variables meant that adding *Vulnerability* and/or *Fragility* to *Winningness* did not increase the adjusted R2, and only one of the three variables was statistically significant in any of the models. Also, when we include *Vulnerability*, and *Fragility,* we require separate equations for each party, and we lose cases. For the 38-election time-period, we find that the best fitting model in terms of adjusted R2 is the simple bivariate regression where we use *Winningness* aloneto predict the EC outcome, with an adjusted R2 value of 0.81 (see Table AII).

**Accuracy of ex post classification of states as non-competitive**

B-K first justify the use of the *ex-post* criterion by which they classify competitive and non-competitive by pointing out that, empirically, there is a very good fit between *ex ante* and *ex post* evaluations of competitive states. Pre-election polls do a good job of predicting final outcomes to within a small margin of error (Soumbatiants et al. 2006) – though of course, that margin of error may be enough to generate an erroneous prediction. Still, highly uncompetitive states are unlikely to change partisan direction over the course of a single election. B-K point out that the ±3% value they use to define a competitive state corresponds with the usual pre-election poll margin of error. When a state polls outside this three-percentage point margin, it is generally seen as not winnable by the trailing candidate, although more errors in prediction do occur than would be suggested by the 95% confidence limits **(**Gelman and King 1993; Shirani-Mehr et al.,[[13]](#footnote-16)

However, it is also well understood that campaigning choices are only “imperfectly correlated” with the degree to which a state is competitive (Shaw and Althaus, forthcoming). Wewould not, in general, expect the campaign spending or campaign appearances to be only in competitive states, since candidates also spend some money and make some appearances for reasons not directly related to boosting their own campaign chances, e.g., to help down-ticket candidates or to build for the future. [[14]](#footnote-17) Also, some major media markets cover more than one state. And the differential cost of campaigning may increase the desirability of campaigning in some small states where advertising costs are relatively inexpensive (Shaw 1999; Shaw and Althaus, forthcoming). Finally, there is uncertainty about time trends, and the need to have alternative routes to victory.

While Shaw and Althaus (forthcoming), who have collected the most complete data on campaign appearances and campaign expenditures by both parties for most of the post-WWII era, show that there is high agreement between the candidates of the two major parties as to which are the states in which to invest campaign resources, we would not expect a perfect symmetry, and we do not find a perfect symmetry in their data. In addition to reasons not directly connected with the presidential election contest, a leading presidential candidate and a trailing candidate face somewhat different strategic tasks. Sometimes a trailing candidate must opt for campaigning in a state expected to be won by the opponent, since doing so may open the only possible path to victory and/or may tempt an opponent to divert resources to protect a “base” state that could be better spent elsewhere.[[15]](#footnote-19) As Shaw and Althaus (forthcoming) put it: “campaigns often hone in on less competitive states when their overall position is weak.“ Nonetheless, as both Grofman and Feld (2005) and Stromberg (2008) argue, we would expect to see that competitiveness, along with the size of the EC vote in the state, would be key determinants of campaigning.[[16]](#footnote-20) Similarly, Shaw and Althaus (forthcoming) posit that “campaign resources will be disproportionately, but not exclusively, concentrated in battleground states.”

For example, in 2012, B-K note that 99.6% of advertising money was spent in the ten states identified as battlegrounds by FairVote.org. Of those ten states, eight are included in the *post hoc* set of competitive states, while the other two were the next closest states in terms of margin of victory. Similarly, in 2012, 87% of campaign events were held in the set 8 states viewed post-hoc as competitive.[[17]](#footnote-22) We can provide confirmation of the congruence between post-hoc measures of competitiveness and ex ante expectations of competitiveness for two additional recent elections, those in 2004 and in 2016.[[18]](#footnote-23) In the 2016 election, the campaigns and campaign related PACs spent 82% of advertising money in the states retrospectively classified as competitive.[[19]](#footnote-24) Moreover, the only competitive state not targeted by either campaign was Minnesota, a state that holds the longest win streak for Democratic candidates. Similarly, if we look at candidate rallies or events where the presidential or vice-presidential candidate was present in 2016, the major party candidates held 79% of all events in the 13 states which post-hoc we are labeling competitive.

Some studies have claimed that the number of battleground states has narrowed (Gimpel et al 2007), but what is arguably the most comprehensive study to date, looking from 1952 onward, finds little change in the number of battleground states over time (Shaw and Althaus, forthcoming). We can contribute to this debate by examining the change in the number of competitive states over a much longer time period.

We show in Figure II the percentage of competitive states as we have measured that concept, with a running average also shown by plotting a locally-weighted polynomial regression. What we see is that the post 1952 data is compatible with the Shaw and Althaus’s (forthcoming) assertion that there has been little change in the number of battleground states in recent presidential elections, though there is some evidence for a slight downturn in our data. However, when we look at the longer time series, what we observe is that we now have relatively few competitive states as compared to the period1868-1900, and the percentage of competitive states is more stable (lower standard deviation) than it was before 1988.

**<< Figure II about here>>**

Shaw and Althaus (forthcoming) also expect the ability of campaigns to more optimally use their resources should increase over time with more sophisticated survey and targeting tools. We relatedly expect that higher levels of polarization allow for more accurate predictions of which states are likely to be competitive and which not. We can examine this question by comparing the Shaw and Althaus measure of what states were viewed as battleground states as judged by the behavior of each campaign and our post-hoc measure of competitiveness. We show the average level of competitiveness in their battleground states in Table II.

**<< Table II about here >>**

What we see from Table II is that, since 1988, the states which Shaw and Althaus (forthcoming) find to be battleground states as judged by campaigning, also are highly competitive. However, with exception to 1960, 1968 and 1976, this is not true in the period from 1952 to 1984. Thus, at least for the recent period, using post-hoc measures of competiveness as a proxy for campaign strategies is reasonable to do.[[20]](#footnote-25)

**Using Partisan Imbalance in Non-Competitive States to Predict EC Outcomes**

We, like Brams and Kilgour (2017), believe that outcomes in non-competitive states are critical in understanding final Electoral College winners. In this section, we capitalize on that insight by offering a simple measure that we show jointly performs as well or better than the Brams-Kilgour variables in predicting final EC outcomes.

To present our measure, some notation is useful. We may again partition the states into the set of competitive states, Cj,and the set of non-competitive states, NCi, where *i* indicates the election year. The EC seats in a competitive state are labeled as s(Cj) and the EC seats in a non-competitive state are labeled as s(NCj). We have s(EC) = s(Cj) + s(NCj). The noncompetitive states won by Democrats we label NCD, and the non-competitive states won by Democrats we label NCR. The seats in the non-competitive states won by the Democrats are thus labeled s(NCD) and the seats in the non-competitive states won by Republicans are thus labeled s(NCR).

We will be interested, on the one hand, on the partisan balance of seats in the non-competitive states and, on the other hand, on the share of the states that fall into the non-competitive category. We define our variable of interest as the difference between the two-candidate’s non-competitive electoral totals, divided by the total number of EC seats

***Non-Competitive Advantage* = [s(NCD) - s(NCR)]/s(EC)**

This measure is standardized, thus allowing us to compare its effects across elections. When one party has a big advantage in non-competitive electoral votes, they will be more likely to win the election. Bram's and Kilgour reflect this intuition by examining coalitions among competitive states, and determining outcomes under the explicit assumptions that the competitive state outcomes occur independently of one another and with an equal probability of victory for the two parties in each. [[21]](#footnote-26) We do not require either of these strong assumptions. But exactly the same intuition drives our model as that in the work of Brams and Kilgour, namely that the candidate that has a bigger advantage in electors from the non-competitive states will have more options in terms of possible wins in competitive states leading to Electoral College victory.

Table III shows *ex post* values for the Democratic and Republican EC seat shares in the non-competitive states in the first two columns, and it also shows the final EC seat outcome both as a number and as a percentage. In addition, we provide a column that has the *difference* between the Democratic and Republican EC seats in the noncompetitive states, and a further column that shows that difference normalized by total EC seats, i.e. a column that shows *Non-Competitive Advantage*. [[22]](#footnote-27)

**<<Table III about here>>**

We first test the predictive usefulness of our *Non-Competitive Advantage* variable by looking to see how often the party with the advantage in the non-competitive states wins the EC vote. As does the *Winningness* measure, in all four of the elections from 2000 through 2012, *Non-Competitive Advantage* correctly predicts the presidential outcome. Indeed, we find that in all but 2 of the 38 elections (1880 and 1960) the party with a *Non-Competitive Advantage* goes on to win the election, the same strong predictive accuracy as the *Winningness* measures. Interestingly, the two election errors are the same two elections that *Winningness* fails to predict.

Next, we regress Republican EC seat share on the *Non-Competitive Advantage* variable*.* Here we find (see Table AII) a very strong and significant relationship between the two measures, and the simple regression between them yields an adjusted R2 of 0.96. We can compare this regression with one that models the same dependent variable with *Winningness* as the predictive variable. As noted earlier, the adjusted R2 of the *Winningness* model is 0.81, lower than that for *Non-Competitive Advantage* at 0.96. Whilethe very simple *Non-Competitive Advantage* variable does better in predicting final seat shares than any (or all) of the three variables from Brams and Kilgour (2017), *Winningness* and *Non-Competitive Advantage* do equally was well at predicting the directionality of EC outcomes.

# **Discussion**

Brams and Kilgour (2017) begin by suggesting that the set-up power of non-competitive states dictate the terms under which a presidential election is contested. We agree. While competitive states receive the bulk of campaign activities like television and radio advertising, campaign field offices, and visits from the candidates and their surrogates, the media “horse-race” coverage about ‘swing states’ and ‘battleground states’ takes attention away from the extent to which safe seats matter for election outcomes. Partisan balance in non-competitive states matters since the candidate who enjoys a *Non-Competitive Advantage* has many additional pathways to the presidency, and thus one candidate can begin the presidential contest severely handicapped.

Our results complement a broader literature on the Electoral College, which has both empirical, theoretical, and normative components. Normatively, there is an ongoing debate between those that see popular vote decisions as the only legitimate way to elect a president, and those who view the Electoral College as a result of a political bargain reflecting federalist efforts to balance popular votes and states as the bases of representation (Hirsch, 2008; Edwards, 2011; Ross, 2012). This debate is tied to proposals about alternative ways to elect the U.S. president. Such proposals tend to surface after each presidential election, especially those (like 2000 and 2016) where there is a divergence between the popular vote and theEC vote. Theoretically, there is a debate about the degree to which the weighted voting rule used in the Electoral College disproportionately empowers citizens of small states as opposed to large states. This debate is most commonly couched in terms of game theoretic indices of power such as the Banzhaf Index or the Shapley-Shubik value (see e.g., Owen, 1975; Duffy and Matros, 2015). Empirically there is a debate about such issues as the degree of partisan bias imposed by EC apportionment (Grofman, Brunell, and Campagna, 1997; Johnston, Rossiter and Pattie, 2004; Pattie and Johnston, 2014; cf. Ladewig and Jasinski, 2008), and the nature of optimal campaigning under the Electoral College (see esp. Shaw, 2006; Stromberg, 2008).

We have extended B-K’s analyses of *Winningness*, *Vulnerability* and *Fragility* beyond the four recent elections they analyze, to include not just 2016, but all elections between 1868 and 2016. Thus, we have added 34 elections to the analyses. We also added a new and simpler variable based on the logic of the B-K argument, namely, *Non-Competitive Advantage,* defined as the difference in safe EC seats between the parties, normalized by total EC seats. We find that the candidate that holds the edge in *Winningness* and *Non-Competitive Advantage* have gone on to win in all but 2 of the 38 elections since 1868. In the mispredicted elections, the partisan advantage in non-competitive seats was very slim. When we move from attempting to predict a dichotomous outcome variable to seeking to predict final EC vote shares, we found that both *Winningness* and our new *Non-Competitive Advantage* variable are highly predictive of EC seat shares, but now the predictive edge is with the simpler variable **(**R2 of 0.96 vs. one of 0.81).

In toto, we take these results to be highly supportive of recent Public Choice and economics scholarship on optimal campaigning. In particular, campaigns have clear incentives to concentrate resources in the most competitive states rather than simply the most populous ones, and recent campaigns (since the 1980s) show a closer correspondence between post-election closeness of result and expenditure of campaign resources. However, we have shown that we have relatively few competitive states in more recent elections compared to those prior to the 20th century. More specifically, our results support with a much more extensive data set the key intuition in Brams and Kilgour that non-competitive states play a foundational role in shaping the presidential context. We have offered a new, simple measure, *Non-Competitive Advantage*. As with Brams and Kilgour’s *Winningness*, our measures shows that the more potential paths to victory leads to a greater expected seat share, and the candidate who has the edge in the Non-Competitive EC seats is almost always elected President.

**Figure I: Comparing Winningness, Vulnerability, and Fragility to EC Outcomes**

**/Users/jcervas/Dropbox/Non Competitive Electors/scatterBrams.pdf**

NOTE:Candidate’s Share of EC is from the Republican perspective in plot one. The Candidate’s Share of the EC is labeled “D” for the Democratic candidate, and “R” for the Republican candidate in the *Vulnerability* and *Fragility* plots.

**Figure II. Percent of Competitive States Over Time: 1868-2016**

**/Users/jcervas/Dropbox/Non Competitive Electors/scatterHistoricalCompetitiveness.pdf**

NOTE: Smoothed lines are locally-weighted polynomial regressions with smoothness set at f=0.5. These lines are intended to show over time patterns among noisy data.

**Table I**

**a. Correlations among the *Winningness*, *Vulnerability*, and *Fragility* variables for the Republican and Democratic Parties and with Republican EC seat share: 1868-2016**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Democratic Party Correlations** | | | | | |  | **Winningness** | **Vulnerability** | **Fragility** | **EC Outcome**  **(DEM)** | | **Winningness** | 1 | -0.957 | -0.981 | 0.901 | | **Vulnerability** | -0.957 | 1 | 0.910 | -0.855 | | **Fragility** | -0.981 | 0.910 | 1 | -0.718 | | **EC Outcome** | 0.901 | -0.855 | -0.718 | 1 | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Republican Party Correlations** | | | | | |  | **Winningness** | **Vulnerability** | **Fragility** | **EC Outcome**  **(REP)** | | **Winningness** | 1 | -0.978 | -0.876 | 0.901 | | **Vulnerability** | -0.978 | 1 | 0.804 | -0.883 | | **Fragility** | -0.876 | 0.804 | 1 | -0.774 | | **EC Outcome** | 0.901 | -0.883 | -0.774 | 1 | |

NOTE: *Winningness* defined for all elections. *Vulnerability* and *Fragility* only defined for 24/38 elections for the Democratic candidate, and for 31/38 for the Republican candidate.

**Table I (cont.)**

**b. Correlations among the *Winningness*, *Vulnerability*, and *Fragility* [Restricted Models]: 1868-2016**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Democratic Party Correlations [Restricted Model]** | | | | |
|  | **Winningness** | **Vulnerability** | **Fragility** | **EC Outcome**  **(DEM)** |
| **Winningness** | 1 | -0.947 | -0.973 | 0.726 |
| **Vulnerability** | -0.947 | 1 | 0.886 | -0.807 |
| **Fragility** | -0.973 | 0.886 | 1 | -0.667 |
| **EC Outcome** | 0.726 | -0.807 | -0.667 | 1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Republican Party Correlations [Restricted Model]** | | | | |
|  | **Winningness** | **Vulnerability** | **Fragility** | **EC Outcome**  **(REP)** |
| **Winningness** | 1 | -0.964 | -0.810 | 0.726 |
| **Vulnerability** | -0.964 | 1 | 0.705 | -0.658 |
| **Fragility** | -0.810 | 0.705 | 1 | -0.759 |
| **EC Outcome** | 0.726 | -0.658 | -0.759 | 1 |

NOTE: Restricted values are defined only on the elections in which *Winningness* is neither 0 or 1 (17 of 38). *Vulnerability* and *Fragility* took value 0 in Table Ia when *Winningness* is 1 since the candidate who wins all the coalitions cannot be vulnerable or have fragile coalitions. Here, only elections which were decided by competitive states are used to calculate the Pearson Pairwise Correlations.

**TABLE II. Average Victory Margins in Battleground States as Defined by Shaw and Althaus**

|  |
| --- |
|  |

NOTE: Classifications and data courtesy of Daron Shaw via personal communication. Numbers represent the unweighted means by classification. Each party has it’s own strategy, so averages were taken for each party’s strategy separately. Same conclusions hold if all targets are included as battlegrounds, or only those where there is concurrence.

**Table III: Electoral College Data for Calculation of *Non-Competitive Advantage*, 1868-2016**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Year | Non-Competitive  EC Seats | | |  | | --- | | Electoral College Outcomes | | |  |  | | --- | --- | | Seats | Percent | | | | | | Differences | |
|  | Rep | Dem | Rep | Dem | Rep | Dem | Seats | Percent |
| 1868 | 153 | 37 | 211 | 80 | 0.725 | 0.275 | 116 | 0.399 |
| 1872 | 269 | 34 | 300 | 66 | 0.82 | 0.18 | 235 | 0.642 |
| 1876 | 64 | 119 | 182 | 184 | 0.497 | 0.503 | -55 | -0.15 |
| 1880 | 95 | 125 | 213 | 156 | 0.577 | 0.423 | -30 | -0.081 |
| 1884 | 93 | 123 | 182 | 219 | 0.454 | 0.546 | -30 | -0.075 |
| 1888 | 112 | 100 | 233 | 168 | 0.581 | 0.419 | 12 | 0.03 |
| 1892 | 112 | 150 | 173 | 271 | 0.39 | 0.61 | -38 | -0.086 |
| 1896 | 203 | 126 | 273 | 174 | 0.611 | 0.389 | 77 | 0.172 |
| 1900 | 258 | 122 | 292 | 155 | 0.653 | 0.347 | 136 | 0.304 |
| 1904 | 317 | 120 | 343 | 133 | 0.721 | 0.279 | 197 | 0.414 |
| 1908 | 283 | 120 | 327 | 156 | 0.677 | 0.323 | 163 | 0.337 |
| 1912 | 8 | 467 | 23 | 508 | 0.043 | 0.957 | -459 | -0.864 |
| 1916 | 171 | 213 | 255 | 276 | 0.48 | 0.52 | -42 | -0.079 |
| 1920 | 382 | 114 | 404 | 127 | 0.761 | 0.239 | 268 | 0.505 |
| 1924 | 366 | 136 | 395 | 136 | 0.744 | 0.256 | 230 | 0.433 |
| 1928 | 379 | 52 | 444 | 87 | 0.836 | 0.164 | 327 | 0.616 |
| 1932 | 8 | 413 | 59 | 472 | 0.111 | 0.889 | -405 | -0.763 |
| 1936 | 8 | 519 | 8 | 523 | 0.015 | 0.985 | -511 | -0.962 |
| 1940 | 27 | 290 | 82 | 449 | 0.154 | 0.846 | -263 | -0.495 |
| 1944 | 31 | 215 | 99 | 432 | 0.186 | 0.814 | -184 | -0.347 |
| 1948 | 37 | 215 | 200 | 331 | 0.377 | 0.623 | -178 | -0.335 |
| 1952 | 379 | 53 | 442 | 89 | 0.832 | 0.168 | 326 | 0.614 |
| 1956 | 446 | 47 | 457 | 74 | 0.861 | 0.139 | 399 | 0.751 |
| 1960 | 132 | 86 | 220 | 317 | 0.41 | 0.59 | 46 | 0.086 |
| 1964 | 47 | 463 | 52 | 486 | 0.097 | 0.903 | -416 | -0.773 |
| 1968 | 175 | 94 | 320 | 218 | 0.595 | 0.405 | 81 | 0.151 |
| 1972 | 511 | 17 | 521 | 17 | 0.968 | 0.032 | 494 | 0.918 |
| 1976 | 66 | 114 | 241 | 297 | 0.448 | 0.552 | -48 | -0.089 |
| 1980 | 344 | 19 | 489 | 49 | 0.909 | 0.091 | 325 | 0.604 |
| 1984 | 498 | 3 | 525 | 13 | 0.976 | 0.024 | 495 | 0.92 |
| 1988 | 289 | 42 | 426 | 112 | 0.792 | 0.208 | 247 | 0.459 |
| 1992 | 73 | 263 | 168 | 370 | 0.312 | 0.688 | -190 | -0.353 |
| 1996 | 66 | 348 | 159 | 379 | 0.296 | 0.704 | -282 | -0.524 |
| 2000 | 189 | 171 | 271 | 267 | 0.504 | 0.496 | 18 | 0.033 |
| 2004 | 213 | 183 | 286 | 252 | 0.532 | 0.468 | 30 | 0.056 |
| 2008 | 145 | 291 | 174 | 364 | 0.323 | 0.677 | -146 | -0.271 |
| 2012 | 191 | 233 | 206 | 332 | 0.383 | 0.617 | -42 | -0.078 |
| 2016 | 188 | 187 | 305 | 233 | 0.567 | 0.433 | 1 | 0.002 |

NOTE: Competitive states are determined by the winning party garnering no more than 53% of the two-party vote.

# **References**

Aldrich, John H. 1993. Rational Choice and Turnout. American Journal of Political Science 37 (1):246–78.

Bartels, Larry M. 1985. “Resource Allocation In a Presidential Campaign.” The Journal of Politics. Vol. 47, No. 3, pp. 928-936.

Bartels, Larry M. 1988. “Electoral Continuity and Change, 1868-1996.” Electoral Studies. Vol. 17, No. 3, pp. 301-326.

Banzhaf, John F., III. 1968. “One Man, 3.312 Votes: A Mathematical Analysis of the Electoral College,” Villanova Law Review 13 (2): 304-332.

Brams, Steven and Morton D. Davis. 1974. “The 3/2’s Rule in Presidential Campaigning.” American Political Science Review. 68 (1): 11-134.

Brams, Steven J. and D. Marc Kilgour. 2017. “Paths to victory in presidential elections: the setup power of noncompetitive states.” Public Choice. 170: 99–113.

Colantoni, Claude S., Terrence Levesque, and Peter C. Ordeshook. 1975. “Campaign Resource Allocation under the Electoral College.” American Political Science Review, 69 (1): 141-154.

Downs, Anthony. 1957. An Economic Theory of Democracy. New York: Harper.

Duffy, John, and Margit Tavits. 2008. Beliefs and Voting Decisions: A Test of the Pivotal Voter Model. American Journal of Political Science 52 (3):603–18.

Duffy John and Alexander Matros. 2015. Stochastic asymmetric Blotto games: Some new results.  Economics Letters 134: 4–8.

Edwards, George C. III. 2011. Why the Electoral College Is Bad for America,  2nd Edition. Yale University Press.

Election 1984. 1984. Editorial research reports 1984 Vol. II. Washington, DC: CQ Press. Retrieved from http://library.cqpress.com/cqresearcher/cqresrre1984091400

Gelman, Andrew, and Gary King. 1993. “Why are American Presidential Election Campaign Polls so Variable When Votes are so Predictable?” British Journal of Political Science, Vol. 23 (1), 409-451.

Geys, Benny. 2006. Explaining Voter Turnout: A Review of Aggregate-Level Research. Electoral Studies 25 (4):637–63.

Gimpel, James G., Karen M. Kaufmann, and Shanna Pearson-Merkowitz. 2007. "Battleground States Versus Blackout States: The Behavioral Implications of Modern Presidential Campaigns." The Journal of Politics 69(3): 786-97.

Grofman, Bernard, Thomas Brunell, Janet Campagna. 1997. Distinguishing between the effects of swing ratio and bias on outcomes in the U.S. electoral college, 1900-1992. Electoral Studies, 16(4):471-487.

Grofman, Bernard and Scott Feld. 2005.  Thinking About the Political Impacts of the Electoral College. Public Choice, 123: 1-18.

Hirsch, Sam. 2008. “Awarding Presidential Electors by Congressional District: Wrong for California, Wrong for the Nation.” 106 Mich. Law Review.

Johnston, Ron, David Rossiter and Charles Pattie. 2004. “Disproportionality and bias in U.S. Presidential Elections: How geography helped Bush defeat Gore but couldn’t help Kerry beat Bush.” Political Geography 24: 952-968.

Ladewig, Jeffrey W. and Matthew P. Jasinski. 2008. “On the Causes and Consequences of and Remedies for Interstate Malapportionment of the U.S. House of Representatives. Perspectives on Politics 6:1: 89-107.

Pattie, John and Ron J. Johnston.  2014.  “’The electors shall meet in their respective states’: Bias and the US Presidential Electoral College, 1960-2012.”  Political Geography 40: 35-45.

Ross, Tara.  2012. Enlightened Democracy: The Case for the Electoral College, 2nd Edition.  World Ahead Publishing.

Strömberg, David. 2008. “How the Electoral College Influences Campaigns and Policy: The Probability of Being Florida.” American Economic Review. 98(3):769–807.

Lipsitz, Keena. 2009. “The Consequences of Battleground and ‘‘Spectator’’ State Residency for Political Participation.” Political Behavior Vol. 31, 187-209.

Lipsitz, Keena and Jeremy M. Teigen. 2010. “Orphan Counties and the Effect of Irrelevant Information on Turnout in Statewide Races.” Political Communication, Vol. 27:2, 178-198.

Miller, Nicholas R. 2012. “Why the Electoral College is good for political science (and public choice)”. Public Choice, Vol 150, 1-25.

Pattie, Charles, and Ron Johnson. 2014. “The Electors Shall Meet in their respective states’: Bias and the US Presidential Electoral College, 1960-2012.” Political Geography, Vol. 40, pp 35-45.

Shaw, Daron R. 1999. “The Effect of TV Ads and Candidate Appearances on Statewide Presidential Votes, 1988-96.” American Political Science Review, Vol. 93 (2): 345-361

Shaw, Daron R. 1999b. “The Methods behind the Madness: Presidential Electoral College Strategies, 1988-1996.” The Journal of Politics. Vol 61 (4), 893-913.

Shaw, Daron R. 2006. The Race to 270. Chicago: University of Chicago Press.

Shaw, Daron, and Scott Althaus. Forthcoming. Electoral College Strategies of American Presidential Campaigns from 1952 to 2012.

Shirani-Mehr, Houshmand, David Rothschild, Sharad Goel, and Andrew Gelman. “Disentangling Bias and Variance in Election Polls.” (forthcoming).

Retrieved from <http://www.stat.columbia.edu/~gelman/research/unpublished/pollposition_v2.pdf>

Soumbatiants, Souren, Henry W. Chappell Jr., and Eric Johnson. 2006. “Using state polls to forecast U.S. Presidential election outcomes.” Public Choice, Vol 127, 207-223.

Stokes, Susan C. 1999. Political Parties and Democracy. Annual Review of Political Science 2:243–67.

Strömberg, David.  2008. “How the Electoral College Influences Campaigns and Policy: The Probability of Being Florida.” American Economic Review 2008, 98 (3), 769–807.

Wright, John R. 2009. “Pivotal States in the Electoral College, 1880-2004.” Public Choice, 139 (1): 21-37.

1. Colored maps (chloropleths) are now an indispensable aspect of election coverage, visually emphasizing how geography matters. CNN and other broadcasters are able, with the push of a button, to display historical comparisons of voting patterns at various levels of electoral geography. [↑](#footnote-ref-2)
2. On CNN, on election night in 2016, Wolf Blizer quipped to Jake Tapper that “Jake, [this is] another presidential race where all eyes right now are on Florida”, to which Tapper responded “It's one of the critical states in this race. Donald Trump himself has said he doesn't see a path to the presidency for himself without the state of Florida, the 29 electoral votes.” Tapper went on to say, “the Clinton campaign knows they need Florida. They have been saying for some time they feel better about Florida than they do about states such as North Carolina, … Ohio, or Iowa.” [↑](#footnote-ref-3)
3. We will refer to Brams and Kilgour’s *Public Choice* paper by their names and with the B-K acronym interchangeably throughout this essay. [↑](#footnote-ref-4)
4. For example, in 2012, Brams and Kilgour point out (p. 101): “Because Barack Obama had a 233–191 electoral vote lead over Mitt Romney in the 42 noncompetitive states and the District of Columbia, he needed only 37 of the 114 electoral votes in the competitive states to win with a majority of 270 electoral votes, whereas Romney needed 79.” [↑](#footnote-ref-5)
5. In 1984, Ronald Reagan won 49 out of 51 states (including Washington D.C.) Norman Ornstein, writing before the election, said “Incumbent presidents don’t often lose, particularly presidents presiding over 6% real growth and low or non-existent inflation” (quoted in *CQ Press*, http://library.cqpress.com/cqresearcher/document.php?id=cqresrre1984091400). [↑](#footnote-ref-6)
6. In races with third parties, a margin of victory no greater than 6%. For the purposes of this note, we concern ourselves only with the two highest vote earners and calculate accordingly. [↑](#footnote-ref-7)
7. In the process of replicating the Brams and Kilgour (2017) analyses, we found a few minor errors that we corrected; those corrections explain the differences in the numbers reported in Table AI for the elections of 2000 and 2004**,** and those reported in Brams and Kilgour Table 4. [↑](#footnote-ref-9)
8. In Appendix C, we provide an additional robustness check using Shaw and Althaus’s classifications of battleground/target states using our Non-Competitive Advantage variable. We conclude that their ex ante measure works nearly as well as the post hoc competitiveness measure when we include battleground targets from either campaign or from only those in which the campaigns agree about their battleground status. [↑](#footnote-ref-10)
9. In Table Ia, *Vulnerability* and *Fragility* are defined in all elections that are competitive (17/38), and because the sample is split for Republicans and Democrats, for years in which that candidate had a *Winningness* of 1 (*Vulnerability* and *Fragility* are always zero in these cases). [↑](#footnote-ref-11)
10. While these two elections were very close in two-party vote margin, and thus might be regarded as hard to predict, they were less so electorally. In 1960, John F. Kennedy won the EC vote by 9.1% and in 1880, James Garfield won by 7.5%. In neither election were third party candidacies consequential in affecting relative two party shares. [↑](#footnote-ref-12)
11. Because of the frequent occurrence of values of 0 or 1, a perfect linear fit is impossible**.**  [↑](#footnote-ref-13)
12. In 1992, Bill Clinton was just 7 shy of having enough seats in non-competitive states, and could have lost the election in only 5 of the over 130,000 different combinations of electoral outcomes among the competitive states, i.e., *Winningness* > 0.99. [↑](#footnote-ref-14)
13. Another reason for choosing the ±3% value is a pragmatic one that we found only after we had done robustness checks; over both recent elections and the longer historical data: ±3% value has (marginally) greater predictive power than the often used ±5% definition of competitive state (see Appendix). [↑](#footnote-ref-16)
14. Bartels (1985) has pointed out that campaigns have what he calls both “instrumental” and “ornamental” reasons for staging campaign events. Attending an event in a swing state, where a candidate’s presence could increase turnout is instrumental, while visiting a state to satisfy state parties might be ornamental.HillaryClinton spent over $600,000 in Arizona, perhaps trying to influence lower ticket races by increasing mobilization efforts. Ultimately, Arizona, a state that has had a strong Republican tradition, became competitive in 2016. [↑](#footnote-ref-17)
15. Stromberg (2008) suggests a hockey metaphor; as a game winds down, a trailing team looking to increase the probability of tying the game pulls their goalie to provide more offensive potential, taking the risk of giving up another goal. A leading team would instead probably act to protect their lead, replacing offensive players with defensively skilled players. [↑](#footnote-ref-19)
16. This conclusion differs from that of early political science literature on campaign strategies which claimed that the most populous states would receive the bulk of campaign activities. For example, Brams and Davis (1974) offered a model that predicted campaign allocations proportional to the electoral votes of each state raised to the power (3/2). For an early critique of the view that campaigning would necessarily focus on the most populous states see Colantoni, Levesque, and Ordeshook (1975). See also Wright (2009), Miller (2012). [↑](#footnote-ref-20)
17. Data aggregated from FairVote.org, with original data from CNN: <http://www.fairvote.org/presidential_tracker_2012#2012_campaign_events> [↑](#footnote-ref-22)
18. Older elections also largely conform to these expectations. Detailed campaign activities for the 1976 election are available because they were submitted into evidence for the hearingbefore the Subcommittee on the Constitution of the Committee on the Judiciary (S.J. Res. 28,1979) on a bill that would abolish the ElectoralCollege and establish a direct popular vote. The data were first used by Bartels (1985). That election shows a similar pattern of campaign activities focused on the competitive states, though there were many more (25) competitive states in 1976 than in the two most recent elections of 2012 and 2016. In 1976, 78% of all campaign events were held in the 25 battleground states, and 78% of all campaign television and radio ads were held there. [↑](#footnote-ref-23)
19. Data compiled from AdAge.com, based on state specific ad buys between October 21, 2016 and election day. <http://adage.com/article/campaign-trail/states-where-trump-clinton-spending-most-on-advertising/306377/> [↑](#footnote-ref-24)
20. It appears that 1964 the Goldwater campaign listed 23 states as Battlegrounds, The Goldwater campaign some treated southern states where he won the two-party vote as "battlegrounds" perhaps because they anticipated the possibility of a  Dixiecrat vote, or perhaps because they were not sure they could pry those states from the hands of the Democratic party which, historically, had been winning them by large margins (except for the Dixiecrat revolt of 1948). His election went so poorly, only one state not considered a battleground was won by Goldwater, and only by less than 1%. [↑](#footnote-ref-25)
21. We regard both of these assumptions as quite reasonable ones to make for purposes of model tractability, but we might expect that they would be falsified if there are electoral tides that sweep in a particular direction and thus create interdependencies in vote outcomes in the competitive states. [↑](#footnote-ref-26)
22. Minor party candidacies likely to be a problem for our analyses in situations where they receive Electoral College votes. This has not been the case in recent elections, as no minor party candidate has won a state since George Wallace in 1968. In their assessment of minor party impact, Pattie and Johnson (2014) do not find substantial effects, and they also note that such effects have often been split in their partisan impact. To provide a consistent coding across all elections in our data set we ignore minor party votes and treat contests as between the two major party candidates in terms of two party vote share. [↑](#footnote-ref-27)