**RESEARCH NOTE**

**MOST COMMONLY PROPOSED ALTERNATIVE ELECTORAL COLLEGE RULES WILL NOT ELIMINATE OR EVEN SUBSTANTIALLY REDUCE DIVERGENCE BETWEEN EC PRESIDENTIAL OUTCOMES AND POPULAR VOTE OUTCOMES: EVIDENCE FROM 1868 TO 2016\***

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ABSTRACT

We offer a typology of possible reforms to the Electoral College in terms of changes to its two most important structural features: seat allocations that are not directly proportional to population and winner-take-all outcomes at the state level. This typology allows us to classify ten different ways to “reform” the present Electoral College to address one or both of these presumed defects. Over the entire period 1868-2016, we consider the implications for presidential outcomes of these ten different alternative mechanisms, in comparison to the actual outcome and the popular vote outcome, and we also examine the implications of a proposal to increase the size of the U.S. House (Ladewig and Jasinski, 2008). The results show that reversals from the popular vote happen under all proposed alternatives at nearly the same rate as under the current Electoral College rules, with one proposal actually making reversals more frequent. The major difference between the present EC rule and alternative rules is NOT in frequency of reversals but in which years the reversals occur. As for the proposal to increase the size of the House, we show that any realistic increase in House size would have made no difference for the 2016 outcome.

***“The people know the candidates of President and Vice President; rarely do they know the identity of the electors for whom they actually vote. Such ‘go-betweens’ are like the appendix in the human body. While it does no good and ordinarily causes no trouble, it continually exposes the body to the danger of political peritonitis.” – Henry Cabot Lodge, as cited in The Electoral College Primer, pg 110 FOR JONATHAN FUTURE USE***

*“The Electoral College is a disaster for democracy”*

*– Donald Trump, November 6, 2012*

*“The Electoral College is actually genius in that it brings all states, including the smaller ones, into play.”*

*– President Elect Donald Trump, November 15, 2016*

**In Federalist, no. 68, Alexander Hamilton opined about the Electoral College, “I… hesitate not to affirm that if the manner of it be not perfect, it is at least excellent.” The Electoral College we know today is not the one envisioned by the founders. Nor is it perfect. It has, however, evolved over time to compensate for some of its deficiencies. A number of changes, mostly resulting from changes in customs, state law, or political necessity has transformed the Electoral College to the body that directly selects the President (Longley and Pierce 1999, pg. 23). The founders believed its function would be to nominate candidates, from which the House of Representatives would select. As we sit here today, the Electoral College’s function is rather instrumental in that electors rarely diverge from their pledged support and haven’t exercised free will such that it was consequential to determine a presidential result. Despite an evolution that resulted in the current practice for electing the chief executive that in many ways fails to resemble what the founders anticipated, the underlying peculiarities devised in the Constitution has remained relatively stable in the two-party era of American politics.**

**The ire of most reformers and others who value democracy is the possibility of a minority president, i.e., one that fails to win a plurality of the national vote. Despite the overwhelming pleas for reform, not one of the presidential elections through the 20th century had popular vote winners losing in the Electoral College, and only once before 2000, in 1888, did a reversal happen as a result of the distribution of votes and not through politicking.[[1]](#footnote-1) That does little to appease the two popular vote winners who failed to win enough seats in the EC in the 21st century that has brought renewed fervor for reform.** Other than the U.S., there are no presidential democracies currently using an Electoral College to elect their president.[[2]](#footnote-2) **While nearly every political party, minority group, states of differing sizes, and voter whose candidate doesn’t win claims bias, academics have found little evidence that bias has affected the outcomes (CITE).** In the U.S., after each presidential election, especially those where popular and Electoral College vote diverged[[3]](#footnote-3), **or a third-party candidacy threatens to undermine our majoritarian ideals**, proposals to abolish the Electoral College (EC) are common (Bickel 1968, **Longley and Peirce 1999: pg 133, OTHER CITES?**). **The normative suitability of the Electoral College, particularly given the value placed on majoritarian principles that is perpetually at risk of being broken due to the institutional rules, has also been questioned by academics (Edwards 2011, Finkelman 2002, Dahl 2003, Bennett 2006).** **It comes as little surprise then that electoral reform is the most proposed constitutional provision in the history of the United States (Hardaway 1994).** Yet, for many reasons, nothing happens. First, the winner of the previous election has little incentive to change the rules that elected him (see the Trump quotes above). Second, large states think that they benefit from the Electoral College because the winner-take-all rule makes their state more likely to be pivotal **(Banzhaf 1968)**, while small states think they benefit from the Electoral College because of the two seat Senate “bonus”.[[4]](#footnote-4) Third, public opinion is closely divided (with a strong partisan split).[[5]](#footnote-5) Fourth, the academic and journalistic community is also divided, with those in opposition to change noting, *i.e.*, that proposed remedies have unknown qualities and are unlikely to cure problems such as a campaign focus on the larger states, and may bring new problems with them (e.g. party proliferation, and blackmail potential by minor parties now able to win pledged electors whose vote switches could determine a presidential election outcome) -- compare, for example, Ross (2012) and Edwards (2011).[[6]](#footnote-6) Finally, after an election, attention quickly shifts to other more pressing issues.[[7]](#footnote-7)

While most of the current attention on Electoral College reform has been centered on the state compact to bind electors to vote for the national popular vote winner,[[8]](#footnote-8) many other proposals for changing the EC have been proposed. **By some estimates, over 700 attempts to change or abolish the Electoral College have been advocated or proposed (Hardway 1994), more than any other provision in the constitution.**  In addition to the notion of a binding state compact, the most common proposals are to replace the present EC either with an election based on winning the national vote (though usually with a runoff rule if the plurality victory margin is not that large), or with a scheme that makes the EC allocation to the candidates in each state more proportional to each candidate’s share of the statewide vote.   Here we consider the consequences for election outcomes **by varying the electoral rules** ~~of four of the variants that have attracted the most traction~~, with **the hopes of casting light on the** ~~particular attention to their~~ implication~~s~~ **of** ~~for~~ the 2016 election.[[9]](#footnote-9) There are a number of **books and** articles comparing the present Electoral College rules to proposed alternatives, none of which we are aware **that** both use a time series going back to 1868 or include the 2016 election, nor do they include as many alternatives to the present EC rules as are considered here (**Longley and Braun 1972, Hardaway 1994**, **Koza et al 2013**, **JC FIND MORE CITATIONS). Moreover, the majority of them only write theoretically about the proposals and provide no attempt at empirically estimating the different alternatives (Wilmerding 1958, Bickel 1968, Glennon 1992).**

The Electoral College is often thought of as having two undesirable design features. The first of these is the allocation of Electoral College seats in each state on a winner-take-all basis rather than either allocating candidate votes proportionally on a state by state basis in some fashion, or nationally. The second design feature is the way in which Electoral College votes are allocated to each state, with objections to the two-state federal bonus as generating malapportionment, and thus overweighting or underweighting certain states. Many critics of the Electoral College would only be satisfied if it were eliminated and replaced with direct popular election of the President. **Anytime *vox populi* is violated the officeholder is illegitimate, so goes the logic. It is also true that a direct popular vote is the *only* alternative to adhere faithfully to a one person, one vote principle. As a number of scholars have pointed out, however, it too has potential to create instability and constitutional crises (Bickel 1971, Glennon 1992, Hardaway 1994).**  There are, **however**, other proposals for reform that **maintaining a system of federalism as intended in the constitution** but seek to address the two-main perceived structural failings of the present Electoral College identified above. Because the two features can be changed independently of one another, we can think of options in terms of a 3 x 2 table in which we either do or do not change one of the two offensive features, with the cell in which we change neither being the present Electoral College, and the cell in which we eliminate both being taken to be a proportional allocation of electoral college seats on the basis of a state’s congressional allocation.Because allocations in the House are themselves not perfectly proportional to population we have added a row that distinguishes between allocations based on House seat share and allocations based strictly on population.[[10]](#footnote-10)

**Additionally, we offer two types of proportional representation, one that allows for fractional shares of electoral college seats, the other that awards only whole seats. We further note that any of the proposals that change how states award their own Electors could be changed by individual states. For instance, the winner-take-all feature used by most states is a custom and not enshrined in the constitution. Those proposals that change the size of Electoral College or eliminate it altogether would require a constitutional amendment.[[11]](#footnote-11) The winner-take-all mechanism (also referred to as unit-rule) is one that increases a state’s pivotally, and it is unlikely that states would voluntarily switch to any proportional allocation so long as most other states remain winner-take-all. This latter statement helps to explain why organizations seeking Electoral reform have recently advocated for interstate compacts, where states agree to a different set of rules *only* when enough states also agree to the new rule to affect an election.**

**Data and Measures**

**The Electoral College as described in the constitution is equal to the number of the House of Representatives contingent in each state plus one for each Senator. The District of Columbia has received three seats beginning with the passage of the twenty-third amendment in 1961. For purposes of simplification, we utilize only the Democratic and Republican two-party vote shares.[[12]](#footnote-12) In this paper, we seek to examine historic Presidential election results by looking at the Electoral College actual results on the one hand, the actual popular vote as the main counterfactual, and then comparing these to different configurations between the two.**

**We begin with some notation to elucidate how we will measure these alternatives. We are interested in all elections since 1868, *Y{1868, 1869, …y, 2016}.* In each year, there is a set of states, *S{Alabamay, Alaskay, …, sy}*, which all receive a proportion of the EC, *electorssys*, as determined by the US Constitution. Equations are numbers in the form (A or B, I or II or III) where A is *unit-rule* and B is *proportional* allocation, and I maintains the decade’s apportionment and two-state bonus while II eliminates just the two-seat bonus and III eliminates both the apportionment and two-seat bonus.**

**The equation for the *Popular Vote (BIII)* is simply,**

**(B, III)[[13]](#footnote-13)**

**which translates into the national summed percentage of votes for the Democratic candidate, with the two-party vote total in the denominator and third-party votes excluded. This is, of course, the most proportional to the voters, but not necessarily to the population since turnout rates might vary by state (Grofman, Koetzle, and Brunell 1997). It also happens to be the reform that has generated the most demand since it’s the *only* system that can guarantee a plurality winner takes the office (I BELIEVE THIS IS TRUE, DO YOU HAVE REASON TO BELIEVE OTHERWISE?).**

**The actual Electoral College, assuming unit-rule for all states, is determined by the following equation,**

**(A, I)**

**<< Table 1 about here >>**

**Table 1. Electoral College Options**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ***[State-Unit Rule]***  ***(A)***  keep winner-take-all state-level allocations | ***[Proportional]***  ***(B)***  eliminate state-level winner-take-all | | |
| ***[Electoral College]***  ***(I)***  keep two-seat “bonus” and House-size-based seat allocations | *Electoral College*  *(District-allocation State-Unit Rule*  *with 2 seat-bonus)* | *Whole-Number Proportionality with 2 seat-bonus*  *(a)* | | ***More Proportional 🡪*** |
| *Fractional Proportionality with 2 seat-bonus*  *(b)* | *District-Rule with 2 seat-bonus*  *(c)* |
| ***[District]***  ***(II)***  eliminate two-seat “bonus” but keep House-size-based allocations | *District-allocation State-Unit Rule*  *without 2 seat-bonus* | *Whole-Number Proportionality without 2 seat-bonus*  *(a)* | |
| *Fractional Proportionality without 2 seat-bonus*  *(b)* | *District-Rule without 2 seat-bonus*  *(c)* |
| ***[Population]***  ***(III)***  eliminate both two-seat “bonus” and House-size-based allocations and replace with population allocation. **There is no apportionment rule.** | *Population State-Unit* | *Popular Vote[[14]](#footnote-14)* | |
|  | ***More Proportional 🡪*** | | | |

The first of the alternatives we consider sets an electoral college vote share equal to the size of the state’s delegation in the U.S. House divided by the total number of seats in the House, i.e., an electoral college with the two seat Senate bonus removed.[[15]](#footnote-15) We refer to it as a *District-allocation State-Unit Rule without 2-seat bonus (AII).* **The equation is the same as the Electoral College (2), except every *electorsys* is first subtracted by two (A, II).**

The second sets the electoral college vote share as identical to the state’s share of the national population, with fractional allocations to allow for (nearly) perfect proportionality, i.e., an electoral college that corrects for both House malapportionment and malapportionment due to the two seat Senate bonus.We refer to the second as a *Population-Weighted State-Unit Rule (AIII)*. **Here, instead of the total electors equaling 538, it is set to 1, or 100%, and each state gets exactly the percentage of this EC as their census year population, and the winning candidate is the one that wins enough states such that their share of the states’ allocations surpasses 50% of the population.**

**(A, III)**

**In the same way that one might expect campaigns to employ a different strategy then with the Electoral College, a proportionality rule such as a state population allocation might encourage regional candidates or smaller parties to run because it would not be necessary to win a majority of states or votes, since the winner would be the candidate who can attract enough support in a subset of states that is greater than any other candidate. Essentially, even though seats are awarded nearly proportionately, this rule would change the nature of campaigns for the highest office. Any increase in the number of viable candidates who go on to win electoral college seats would result in the winner of an election winning smaller pluralities. With the winner-take-all feature maintained, which results in an unbalanced distribution of votes in some states, we would expect to result in *more* frequently split popular and electoral votes. For the purposes of this essay, we treat the actual results as if they happened under the alternative rules.**

The third proposal is to create an electoral college that allocates its votes in a proportional or more proportional way to the state’s share of the present EC, rather than in terms of winner-take-all. Here there are **two** main variants, **each of which have two minor distinctions**. **The first major variant uses the current allocation of EC seats, the second allocates electors based on representation in the House of Representatives, ie, with the two-seat bonus eliminated*.* For the minor variations, the first proportional rule used is to apportion electors** (such as **method of equal proportions** used to apportion the U.S. House)[[16]](#footnote-16) **from the votes within a state. Only whole electors are allocated, which allows for the continued physical meeting of electors in December at their representative state legislatures. This version is equivalent to the election of MPs from multi-member districts, i.e., seats are proportionally assigned according to some rule. The “district” is the state, and the seats are the electors.[[17]](#footnote-17)**

***Whole-Number Proportionality (BIa & BIIa)* for both the Electoral College and House delegation sizes are given by the following series of equations:**

**Where the products in set *State\_allocation* are ordered and the number of seats, *n*-top *priority numbers* are allocated seats accordingly.**

**(B, Ia & IIa)**

**The second minor variation is the *Fractional Proportionality (BIb & BIIb)*, which electors are abolished, and candidates receive their share of the state-wide vote rounded to the third decimal. This variant has been proposed numerous times and was actually passed by the US Senate in 1950 under what was known as the Lodge-Gossett amendment (S.J. Res. 2 of the 81st Congress). The *Fractional Proportionality* alternative results in an increase in proportionality from *Whole-Number Proportionality* but yet is less proportional then *Popular Vote,* because it sets the number of Electors each state gets but relaxes the unit-rule nature of the election. It failed ratification in the House of Representatives (Koza et al 2013). The equation is as follows,**

**(B, Ib & IIb)**

The other **frequently proposed** variant is one in which EC votes are allocated by giving one seat for each House district won, and a two-seat bonus for the candidate who wins the popular vote in the state. **This variation emulates the rules** presently **practiced** in the states of Maine and Nebraska and **has two minor variations.** [[18]](#footnote-18) We refer to this as the *District Rule,* **and has two minor variations,** *with* and *without 2 seat-bonus.*[[19]](#footnote-19) **It is akin to a plan advocated by Senator Karl E. Mundt (R-SD), which was opposed by then Senator John F. Kennedy (D-MA).[[20]](#footnote-20)**

(B, Ib & IIb)

***District Rule with 2-seat bonus* sets to 2 while the *District Rule without 2-seat bonus* instead sets it to zero.**

In addition, in the subsequent section, we **briefly** consider an **additional** type of change, one based on the suggestion in Ladewig and Jasinski (2008) that the House size be decennially **adjusted** to reflect the cube root of U.S. population. The idea is that increasing the size of the House should increase the proportionality of EC outcomes, and hence make the EC vote look more like the popular vote. [[21]](#footnote-21)

**Instead of locking the size of the US House at 435, this rule would apportion seats using method of equal proportions (as described in equation (B, Ia), and we replace electorsy with the *Cube Root House Size* rounded down to the nearest integer. We can then use the new apportionment to apply to all the alternative electoral college rules.**

**In *toto*, we offer three alternatives where the state-level unit-rule is maintained and seven alternatives where the unit-rule is eliminated. These ten total alternates include five which keep the state-wide two-seat bonus, five that eliminate the bonus, and two that eliminate electors altogether. We offer another section which reallocates the number of Electors based on the *ideal* size of the US House, namely one based on the cube root of the population.**

## **Proportional versus winner-take all EC rules**

**The *popular vote*, sometimes referred to as *direct vote*, is perhaps the envy of most reformers. For as often as it’s suggested as the best alternative, it’s iron that this proposal got the least support among the framers at the time of ratification (Hardaway 1994, pg. 156).[[22]](#footnote-22) Modern reformers prefer a direct vote because it theoretically most closely represents the views of the majority, and weights *voters* according to the *one person, one vote* principle. While the Electoral College gives extra weight to small states, and non-voters are represented in the Elector totals of each state, the popular vote weights all *voters* equally, regardless of their state of residence. Reformers often ignore the pitfalls a switch to such system would bring, most importantly the changing incentives for candidates. Perhaps the biggest concern with a direct vote is the incentive for many more candidates to place their names on the ballot. Unlike the Electoral College, which only rewards a candidate who wins pluralities in a state, direct vote might encourage spoilers who would deny more central moderates or mainstream candidates a plurality, which depending on the runoff rule, might allow a fringe candidate to win the presidency with only a small percentage of the overall vote. Other incentives that might change include where a candidate would spend resources (and later direct the resources of the government)[[23]](#footnote-23). Since the current Electoral College has a unit rule, large states offer candidates increased pathways to victory (Brams & Kilgour 2017, Cervas &Grofman 2017), while each state is represented by the two-seat bonus, so candidates have incentives to make campaign appearances in rural areas and small states, in both cases especially those with partisan balances that hover around 50% (Cervas & Grofman 2017). In a system of direct vote, candidates instead might focus on the three or four largest metropolitan areas of the country where they can generate huge vote totals using only minimal assets. Additionally, they might go ‘hunting where the ducks are’; targeting only those voters most likely to support them without any regard for trying to create a coalition of voters which usually result in compromise and moderation. Although switching to a direct vote would eliminate situations where a plurality winner loses the presidency, it is unlikely to create situations where majority winners emerge, and might create factionalism among the population, and in the worst-case scenarios, elect to the presidency a candidate that has very little popular support, and is the preference of only a small minority. We may also consider for a moment the possibility of a bitterly divided and close election, not unlike those we have experienced much of the past few decades and reminiscent of the late 1800s. In fact, the last seven elections were decided by less than 5 percentage points, but only two had margins as close in the Electoral College. The Electoral College delivers decisive victories[[24]](#footnote-24), while a close direct vote might lead to a nationwide recount that might take months or even years to complete, leaving the country in a constitutional crisis.**

**Leaving aside the caveats just discussed, we never the less use the popular (two-party) vote totals in the 38 elections from 1868 to 2016 as our main counterfactual, taking turnout levels and vote choice as given. We make the choice of two-party vote despite the fact that third-party candidacies often represent a large proportion of the total vote, such as in 1968 when the leading popular vote getter, Richard Nixon, won just 43.42% of the total votes. [[25]](#footnote-25) We acknowledge the limitations of this assumption but maintain that any simulation or extrapolation using different electoral rules would require speculation about turnout levels, vote choice, and other essential determents of the election.** Of course, we recognize that when we change the EC rules we also change the strategic incentives as to where to invest campaign resources, and such changes will almost certainly be reflected in differences in turnout, and potentially in difference in outcomes. Thus, we must interpret the results shown in **<<Table** 2 below as *ceteris paribus* ones. [[26]](#footnote-26)

We show in **<<Table** 2 **ten** times series that provide information about the EC modifications we wish to consider: the first two columns are the share of the actual EC seats and the proportion of the actual National Popular vote won by the Democratic candidate. **These are the two measures that reflect the current rules, with the caveats about the popular vote in the preceding section.** The third the Electoral College without the two-state bonus while the fourth is the *Population-Weighted State-Unit rule****.* Starting with the** fifth **column are the proportional rules. The fifth and sixth columns are those based that use apportionment formulas to allocate whole electors, while the seventh and eighth columns proportionality allocate fractional “electors”. The final two columns are the House District specific rules, i.e., ones in which the unit rule is now the district level instead of the state level. The first of these is with a two-seat bonus for the state-wide winner while the second is just purely on House representation.**

**<<Table about here>>**

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There are number of interesting results shown in **<<Table** 2. First, malapportionment effects, and especially the effects of the two-state bonus, are not that large. For example, in 2016, Donald Trump would have been elected even had there been no two-seat bonus. **In fact, he would have won in all the different unit-rule configurations, only losing when a proportional rule such as the direct vote is instituted. Under no rule does he lose by more than two percentage points, so any conclusions about reversals should be seen as skeptical given the potential for different campaign strategies or turnout levels in non-competitive states.**

As can be derived from the differences between Column **2** and Column **3** of **<<Table** 2, only **three** elections in American history has the two-seat bonus feature of the Electoral College been decisive in reversing an election result. The first time this happened was in **1876 benefiting the Democratic candidate[[27]](#footnote-27), then again in** 1916 when it **also** benefited the Democratic candidate, **finally** again in 2000 when it benefited the Republican candidate. However, we would also observe that the over last seven elections the two-seat bonus has consistently favored the Republican candidate, even though it has not had an impact on election outcome.

Second, while proportionality variants of EC allocations clearly can dramatically change the magnitude of seats outcomes relative to votes outcomes, it is only in the period from 1880 to 1900 that we see repeated evidence of changes in the presidential winner based on choice of a proportional as opposed to a winner-take-all rule, though of course, we also see this in 2000 and 2016.

Third, if we look to see when we get reversals under the various electoral college variants, we see the popular vote winner is nearly always the same as the other variants.

A notable exception to this **is the District-Rules, where they increasingly**reverse the Electoral College **and Popular Vote** winner. As it turns out, the**se** reversals that have happened have all benefited the Republican Party. **This result is less surprising given the evidence of heroic attempts to create partisan gerrymanders after the Supreme Court refused to reign in this nefarious behavior (McGann et al 2016).**

Glancing through **<<Table** 2’s first two columns will reveal several instances where *reversal* almost happened, and, in these instances, the Democratic candidate would have been benefited, e.g., 1960. **As mathematician Sam Merrill has shown, reversals are essentially a coin-flip as the popular vote approaches 50% (Merrill 1978).**

## **An EC based on House districts**

Some have suggested the desirability of replacing the present EC rules with one based specifically on House districts (Hirsch 2008). For Republicans, the desirability of change to a district-based election system stems from having majorities in the House of Representatives, combined with their disproportionate unified control of state legislatures that suggests an ability to expand their present advantage through further partisan gerrymandering in the next redistricting round. However, it is useful to view the impact of such a change in rules in historical perspective.

We have already looked at what would have happened, *ceteris paribus*, had the EC not had a two-seat bonus, and at what would have happened, *ceteris paribu*s*,* had votes been proportionally allocated by state rather than being awarded on a winner-take-all basis. We show in **the last two columns of** **<<Table** 2 a comparison of actual EC votes with what would happened, *ceteris paribus*, under House district-based rules with and without a two-seat bonus for the statewide popular vote winner. For this series, we only include elections between 1956 and 2016.[[28]](#footnote-28) To construct this analysis, we used of presidential results aggregated to congressional districts. If a candidate receives a majority of the two-party vote in that House district, we say that they win that elector. The table indicates the percent of the two-party electors the Democratic candidate wins. In the first set of results, shown in column **7**, the majority winner of the state gets an additional two electors. It is, however, worth repeating that the effects of the various rules we consider are *ceteris paribus* ones. ~~As President-elect Trump was aware, if you change the rules, you change the campaign strategies of the candidates.~~

What we see in **columns 7 and 8** is that in recent elections, apart from 2016, there is a significant benefit to the Republican Party in shifting to one of the House-based electoral college rules shown in that table in terms of EC seat share. In 2016, although Democrats would have fared better under an election using House districts with a two-seat bonus than under the actual EC rule, Donald Trump would still have won. Looking to reversals, we see that replacing the present rule with one allocating electors based on the results of Congressional Districts can change outcomes*.* In 1960, 1976, and 2012[[29]](#footnote-29), for example, the outcomes would have been reversed (all three times benefiting the Republican candidate) if we allocated based on the results *within* Congressional Districts plus the plurality state winner getting two bonus seats. In 1976, however, not giving the two-seat bonus to the state plurality winner reverses yet again back to the actual winner, Jimmy Carter (i.e., benefits the Democratic candidate).

## **An EC based on an expanded House**

Now we turn to the fifth structural variation on the present Electoral College rules that we consider. Ladewig and Jasinski (2008), drawing on ideas in Taagepera (1972), have proposed that the House size should be decennially adjusted to equal the cube root of U.S. population.[[30]](#footnote-30) The cube root of the US population in 2010 was . Using this House size, a congressional seat's average size would be just 458,262 people. [[31]](#footnote-31) As it turns out, this would have insured that, had Congressional size been increased in 2010 according to this formula, even the smallest state would have received at least one congressional seat *based solely on the state population*. How would Electoral College malapportionment and outcome effects change if we increased the size of the House to make the allocation rule in that body more nearly proportional to the population of the state by using the cube root of population to determine House size?

One way in which House size could matter is when a reversal actually happened, so the popular vote winner has lost the election. Under this circumstance, as the House size grows to approximate the population size, eventually the popular vote winner will also win the Electoral College.Recalculating the 2016 election for a House size of (but now excluding the two bonus seats for each senator) yields Donald Trump 380 out of the 676 electors **(56.2%).** Again, as with the current Electoral College and the version that simply omitted the bonus Senate based electors, Trump would still have won the White House if the House size were 676. In this EC rule, he wins by 84 electors. Although this is a larger number of seats, the EC is also larger. **Since Trump won 306 out of 538 (56.8%) electors in 2016, his percentage would slightly decrease under the cube-root rule.** Trump won a plurality in the majority of states, so thesame Trump victory occurs if we add in the two seat “federal bonus”. In 2016, for House size to matter required a House size so huge as to be unrealistic: the effects of increasing House size do not affect the outcome in 2016 for any House size under at least 800 (data omitted for space reasons).[[32]](#footnote-32) **In the appendix, we also include a table that compares the Popular Vote and Electoral College under present apportionment with those using the Cube Root Rule of assembly size. These only include the Electoral College with and without the two-seat bonus, and the Whole-Number and Fractional Proportionality rules, both with and without two-seat bonus. The others do not have applicable measures since we cannot know the partisan composition of a House Delegation that has never existed, and the Popular Vote and Population rules would be the same regardless of the House size.**

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# **DISCUSSION**

Using election results from the period 1868 to 2016, we have constructed **ten** counterfactual variants on the Electoral College for the purpose of comparing the actual EC results with those from various proposed reforms. Presidential elections have seen four occasions in this modern political party era of American history in which outcomes of the popular vote and the EC vote diverge, with two of these coming within the past two decades. **While some may argue that even once is too much, others view the relative small number of reversals as vindication for the founders (Hardaway 1994).** If we look at modifications to the Electoral College such as eliminating the two-state bonus, allowing for a more proportional distribution of electors, or switching to House district based outcomes, we only see that at the best they reduce the number of reversals by one, from four to three and at worst, with the House district-based outcomes, they actually increase the number of reversals. Moreover, with the partial exception of 2016, the years in which reversals occur under alternative electoral college arrangements are different from those in which they occurred under present EC rules. Thus, changing the rules in the ways identified above seems to serve no useful purpose. It does not eliminate or even substantially reduce the prevalence of reversals; all it does is change the years in which they occur.

We also considered the implications of a proposal by Ladewig and Jasinski (2008) to increase the size of the House (and thus of the Electoral College) by picking a House size that was proportional to the cube root of population.  Here we found that the election results in 2016 would have been unchanged, and only in **the already reversed 1876, 1888 and,** 2000 **elections and 1880 which wasn’t a reverse but nearly was** would this proposal lead to a different electoral outcome.[[33]](#footnote-33)

**Our analysis would be incomplete without a word about third-party candidates. The Electoral College system makes it very difficult for broadly-popular third-party candidates from receiving any electoral votes. Speaking about the third-party candidacy of Ross Perot in 1992, Bill Clinton strategist James Carville said it was “the single most expensive act of masturbation in the history of the world.”[[34]](#footnote-34) Simultaneously, the Electoral College does favor regionally based third-party candidacies by delivering electors from a small number of states but with very little by way of nation-wide percentages of the popular vote. In these situations, the third-party candidate is most likely to play a spoiler role by denying any of the major party candidates the necessary majority of electoral votes. Much of the focus on third-party candidates is based on their ability to “steal” votes in a particular swing state, thus denying someone of similar ideology essential votes. While true, it is perhaps more troubling that a third-party candidate could potentially win as little as one state, deny any candidate the necessary 270 electoral votes, and throw the contest into the House of Representatives, where each state gets an equal number of votes regardless of population size.**

**For those reformers who demand majoritarian winners as normative doctrine of democracy should look no further than the unstable coalition governments indicative of PR systems. Leaders emerge through post-election negotiation, and their party may not even receive a plurality of the votes. These consensuses take power away from the people in deciding their leaders. Reformers should also acknowledge that the Electoral College “wrong winner” is no less legitimate then any legislation passed by Senators representing a minority of the population, or Supreme Court decisions that largely are immune from public opinion and by design ignorant of electoral tides. As if that were not enough reason to dismiss the standard of majoritarianism, in the process by which the Electoral College would change, through Constitutional amendment, the smallest 34 states could ratify, with the blessing of state legislatures in those states where a slim majority of legislators which might represent the wishes of a small minority of voters, also violates the standard of majoritarian direct vote! The two-seat bonus afforded on the basis of statehood has been shown in this essay to be generally non-determinative of elections. However, one could imagine a normative argument that two is an arbitrary number of bonus seats, especially in light of the US House size being stagnant at 435. Perhaps states should have equal say in the selection of the president the way they do in legislative matters through the Senate. Any increase in state-bonus would increase disproportionality, but it might give smaller states a more uniform say in the selection of the president. While certainly far from perfect, the Electoral College is remarkably stable, usually produces clear victories which match the plurality winner, and in the words of one founding father, “excellent” (Hamilton, Federalist #68).**

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**Table 1: Electoral Contest Seat Shares using Alternative EC Voting Rules**

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| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **Year** | **Popular Vote** | **Actual Outcome** | **House Delegation-Weighted** | **State Population-Weighted** | **Proportional Representation** | **Two-Seat Bonus** | | 1868 | 47.3% | 27.5 | 28.4 | 47 | 46 | -0.9 | | 1872 | 44.1% | 18 | 18.5 | 43.7 | 42.3 | -0.5 | | 1876 | 51.5% | **49.9** | 51.2 | 51.4 | 51.2 | -1.3 | | 1880 | 49.9% | 42.3 | 40.3 | **50.9** | **50.4** | 2 | | 1884 | 50.3% | 54.6 | 55.1 | 51.3 | 50.6 | -0.5 | | 1888 | 50.4% | **41.9** | **40.6** | 52.2 | 52.4 | 1.3 | | 1892 | 51.7% | 61 | 63.2 | 52.1 | 52.3 | -2.2 | | 1896 | 47.8% | 38.9 | 36.4 | **50.4** | **50.3** | 2.5 | | 1900 | 46.8% | 34.7 | 33.9 | **50** | **50.3** | 0.8 | | 1904 | 40% | 27.9 | 28.2 | 45.5 | 44.1 | -0.3 | | 1908 | 45.5% | 32.3 | 31.7 | 49.5 | 49.5 | 0.6 | | 1912 | 64.3% | 95.7 | 96.1 | 67.5 | 70.4 | -0.4 | | 1916 | 51.6% | 52 | **49.7** | 56.2 | 57.3 | 2.3 | | 1920 | 36.1% | 23.9 | 24.1 | 41 | 39.2 | -0.2 | | 1924 | 34.8% | 25.6 | 25.7 | 40.6 | 38.8 | -0.1 | | 1928 | 41.2% | 16.4 | 16.3 | 44 | 42.7 | 0.1 | | 1932 | 59.1% | 88.9 | 89.2 | 63.2 | 65.3 | -0.3 | | 1936 | 62.5% | 98.5 | 99.1 | 66 | 68 | -0.6 | | 1940 | 55% | 84.6 | 85.7 | 59.2 | 60.6 | -1.1 | | 1944 | 53.8% | 81.4 | 82.8 | 57.5 | 58.9 | -1.4 | | 1948 | 52.4% | 62.3 | 61.8 | 54 | 55.4 | 0.5 | | 1952 | 44.5% | 16.8 | 16.3 | 45.4 | 43.9 | 0.5 | | 1956 | 42.2% | 13.9 | 13.8 | 43.5 | 42.2 | 0.1 | | 1960 | 50.1% | 59 | 61.6 | 50.3 | 51 | -2.6 | | 1964 | 61.3% | 90.3 | 90.8 | 59.6 | 61.5 | -0.5 | | 1968 | 49.6% | 40.5 | 42.2 | 49.3 | 49.4 | -1.7 | | 1972 | 38.2% | 3.2 | 3 | 37.4 | 35.1 | 0.2 | | 1976 | 51.1% | 55.2 | 57.1 | 51.1 | 50.9 | -1.9 | | 1980 | 44.7% | 9.1 | 8 | 44.7 | 43.3 | 1.1 | | 1984 | 40.8% | 2.4 | 2.1 | 40.5 | 38.7 | 0.3 | | 1988 | 46.1% | 20.8 | 20.6 | 46 | 45.2 | 0.2 | | 1992 | 53.5% | 68.8 | 69.7 | 53.2 | 53.5 | -0.9 | | 1996 | 54.7% | 70.4 | 72.2 | 54.5 | 54.6 | -1.8 | | 2000 | 50.3% | **49.6** | 51.6 | 50 | 50.2 | -2 | | 2004 | 48.8% | 46.8 | 48.6 | 48.4 | 48 | -1.8 | | 2008 | 53.7% | 67.7 | 70.2 | 53.5 | 53.7 | -2.5 | | 2012 | 52% | 61.7 | 63.8 | 51.5 | 50.9 | -2.1 | | 2016 | 51.1% | **43.3** | **43.8** | 50.6 | 50.2 | -0.5 | |

**NOTE: Popular vote values are given as the Democratic candidate’s percent of total Electoral College two-party vote. Reversals from the National Popular Vote are in Bold.**

Appendix XX



1. **The election of 1876 stands out as one in which the “wrong president” was elected. A number of electors were disputed due to irregularities in votes, and the eventual outcome was arranged by informal agreement in what is known as the Compromise of 1877. This awarded 20 electoral votes to Rutherford Hayes, the loser of the popular vote, enough to give him a one elector victory in the EC.** [↑](#footnote-ref-1)
2. Argentina and Bolivia once had electoral colleges (personal communication, Matthew Shugart, February 2018). Many presidential democracies elect have a runoff procedure to select a president in a multi-candidate contest such that, if no candidate receives a certain percentage of the vote, there will be a second round involving two or more of the candidates with the most votes (Birch, 2003). All parliamentary democracies choose their executive via an indirect form of election. While the prime minister will normally need to command majority support in the national parliament, a prime minister can sometimes govern with only minority support. Minority governments can be quite common in some countries, e.g., Denmark. [↑](#footnote-ref-2)
3. “**Diverge”, “reverse”, “wrong winner”, “misfire”, “divided verdict,” “reversal of winners, “representative inconsistency”, “compound majority paradox”, “referendum paradox”, “majority defeat”, and “inversion” have all been used to describe a situation when the winner of the most votes does not win the office (Miller 2012).** [↑](#footnote-ref-3)
4. Both sides are right (**Longley and Peirce 1999, pg 153**). However, when we look at the likelihood that an individual voter in any given state will be pivotal (e.g., using game theoretic indices of pivotality such as the *Banzhaf index* (Banzhaf, 1965) or the *Shapley-Shubik* value (Shapley and Shubik, 1954; see also Shapley and Mann, 1962) as far back as Owen (1975) it has been recognized that these two effects -- greater large state pivotality and small state overrepresentation relative to population—tend in opposite directions, making the *a priori* “power” scores of individual votes to influence EC outcomes much more similar across states than one might think (see Gelman, Silver, and Edlin, 2012; cf. discussion in Grofman and Feld, 2005; Stromberg, 2008). [↑](#footnote-ref-4)
5. In nearly every poll in the Roper Center for Public Opinion Research iPOLL data bank, the public is split about eliminating the Electoral Colleges, especially along partisan lines, albeit with majorities favoring a change to popular vote. After the bitterly fought 2000 election, 41% of Republicans would have amended the Constitution while 75% of Democratic respondents would have liked to see a change, with an overall support for change of 59% and with 3% of those polled with no opinion (Cable News Network, USA Today. Methodology: Conducted by Gallup Organization, December 15 - December 17, 2000. [USGALLUP.00DC15.R28]). After the even more bitterly fought 2016 election, Gallup asked again about the Electoral College, this time 49% choose the option to amend the Constitution (Gallup Poll 2016 [USGALLUP.120216.R01]. November 28-29, 2016). Again, there was a strong partisan split. Republican support of the current system significantly increased after the election. Gallup found that only 19% of Republican or leaning Republicans favor a system where the winner is the candidate that wins the popular vote (compared to 81% of their Democratic counterparts).In 2011, the numbers were 54% and 69%, respectably, who favored amended the Electoral College to a popular vote system. (http://www.gallup.com/poll/198917/americans-support-electoral-college-rises-sharply.aspx) Aldrich, Reifler and Munger (2014) have modeled the circumstances where we might expect changes in preferences about the desirability of the Electoral College. [↑](#footnote-ref-5)
6. See also Grofman and Feld (2005). [↑](#footnote-ref-6)
7. **Google trends reveals spikes in the popularity of searches of the term “electoral college” in the months before a presidential election, and then quickly diminishing to near zero shortly after the election. See Appendix XX for Figure XX1 representing this trend.** [↑](#footnote-ref-7)
8. S.J. Res 28 1979; National Popular Vote Bill --enacted in 11 states. [↑](#footnote-ref-8)
9. For a discussion of the downside of EC reform see e.g., Dewitt and Schwartz (2016). For issues of problematicity of the meaning of “popular vote” see Gaines (2001). **There are numerous other methods proponents of reform have advocated, most notably Ranked Choice Voting, which we do not consider given the different structure the election would take and because a lack of data on the preference ordering of candidates among the electorate. Any attempt to simulate these hypotheticals would be futile.** [↑](#footnote-ref-9)
10. **For states that enter the Union after a Census has been taken but are still allocated Electoral seats, we take the population in subsequent Census** [↑](#footnote-ref-10)
11. **Article II, Section I, US Constitution** [↑](#footnote-ref-11)
12. **The effects of third party candidacies on electoral outcomes is indeed worth further investigation but desires a normative discussion that is beyond the scope of the current exercise.** [↑](#footnote-ref-12)
13. This can be found in **<< Table 1** where the first in the set is the column and the second is the row. [↑](#footnote-ref-13)
14. **Technically the Popular Vote is not a population rule, since it only accounts for voters and doesn’t represent the differences in turnout among the many demographic, gender, or economic groups and across different states.** [↑](#footnote-ref-14)
15. For the purposes of this calculation, Washington D.C. will still be counted for one house vote in periods after 1960 despite not having a voting member of the House of Representatives. As per the twenty-third amendment, adopted in 1961, D.C. is allocated 3 Electoral College votes regardless of its population. [↑](#footnote-ref-15)
16. **The US Census has used this method since 1940. For more details see 2 U.S.C § 2a (1941), http://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title2-section2a&num=0&edition=prelim** [↑](#footnote-ref-16)
17. **We recognize that there are many different formulas that can be used to allocate seats, and that the differences might, in the words of Gallagher (1991, pg 33), “produce significantly different seat allocations for a given distribution of votes…” and that “each PR method minimizes disproportionality according to its own principles”. When the direct vote is particularly close, choice of apportionment method might be determinative (Gaines and Jenkins 2001). For the purposes of this essay, we only look at the alternative results based on the apportionment used by the US Census for determining Electoral College seats. Any differences in election outcomes derived from the different PR formulas used serve to highlight our principle finding of this essay, i.e., that different rules will produce different results regardless of the method chosen, and none are inherently better than the others.** [↑](#footnote-ref-17)
18. Maine adapted this rule in advance of the 1972 presidential election, while Nebraska enacted it starting with the 1992 election. A split has occurred once in each of these states. In 2008, Barack Obama won Nebraska's 2nd Congressional District, picking up a Democratic electoral vote in that state for the first time since 1964. In 2016, Donald Trump won Maine's 2nd Congressional District. [↑](#footnote-ref-18)
19. ~~Because seats to the U.S. House have been reallocated after each decennial census roughly on the basis of population, with the possible exception of 1920, we would expect that there should be little difference between the~~ *~~Population Unit Rule~~*~~, and the~~ *~~U.S. House District Proportional Rule~~*~~.~~

    **Although this plan is more proportional then the state-unit rule plans including the current Electoral College, it is not a proportional plan since it still awards electors on a winner-take-all basis, except now at the Congressional District level. Given the potential for partisan gerrymanders, this plan may end up being *less* proportional then a winner-take-all state rule.** [↑](#footnote-ref-19)
20. S.J.Res. 12, 90th Cong., first sess. [↑](#footnote-ref-20)
21. As noted earlier there has been a recent attempt to avoid change in the present Electoral College that would be impossible to achieve without a Constitutional amendment while still assuring concordance with popular vote outcomes by creating a compact of all the states such that they would report Electoral College results as if the national popular vote winner was the winner in the state. **This proposal would only take an act a Congress, since it sets the size of the US House and thus the percentage of Electors that are allocated via population.** ~~We treat this proposal as equivalent to a national popular vote.~~ [↑](#footnote-ref-21)
22. **Only one state voted for it during the Constitutional Convention while nine voted against. It was again brought up in Congress as a proposed amendment in 1816, and since then has been proposed in Congress at least 100 times, every time failing.** [↑](#footnote-ref-22)
23. **When votes are not proportional or have the same likelihood of pivotality, resources will be distributed unevenly. For a discussion of the equilibrium in the Electoral College, see Lizzeri and Persico (2001).**  [↑](#footnote-ref-23)
24. **The Electoral College often appears to give the President-elect a landslide victory even when the Popular vote is close. This is a result of the winner-take-all rules that translate even small pluralities into 100% of the state’s electoral slate. By definition, Electoral College victories are always over 50%, while popular votes have been as low as 38% (in 1860). No president has won with a smaller percentage of the Electoral College then popular votes.** [↑](#footnote-ref-24)
25. **That is, nearly 14% of the vote went to candidates who did not finish in the top two, and if we had a good way of determining the preferences of voters for these other candidates had only the two mainstream candidates been on the ballot, we might find that Hubert Humphrey might have led in the popular vote instead. George Wallace’s independent campaign drew support primarily from the south, capturing 46 electoral votes from five southern states. Even had Humphrey won all 9.9 million of Wallace’s voters and the 46 EC votes that accompanied them, he still would have lost in the Electoral College.** [↑](#footnote-ref-25)
26. In the same tweet in which President Trump said that the Electoral College was "genius", he also claimed that he would have won the popular vote if, rather than the present EC system, who won the popular vote decided who got elected president. Under that rule for deciding outcomes he said he would have campaigned in populous states that were being conceded to the Democrats under the present winner-take-all feature of the Electoral College. [↑](#footnote-ref-26)
27. **In an election that was decided not by the votes of the people but instead by a deal between the Democratic and Republican candidates that involved the federal government ending Reconstruction in the South.** [↑](#footnote-ref-27)
28. No official source maintains records for Congressional District level presidential returns, leaving it to interested parties to piece together data to obtain these results. The source of this data in our analysis come from Professor Brunell (University of Texas, Dallas) for the period from 1956-2008 and the internet site DailyKos.com for 2012 and 2016. Any errors in the data remain the responsibility of the present authors. [↑](#footnote-ref-28)
29. There is an especially large difference when allocating by Congressional District in 2012, due in no small part by the aggressive House gerrymandering that took place in the census before the election, mostly to the benefit of Republicans. (McGann et al 2016). Once incumbents are in place, who’s election is in part or largely due to gerrymandering, since benefit from incumbency advantage reduces the vote shares of challengers, *ceteris paribus*, apparent partisan bias in subsequent elections may appear lower (Theodore Arrington, personal communication, February, 2017). [↑](#footnote-ref-29)
30. Taagepera (1972) argued that, for optimal communication purposes between representatives and those they represent, an assembly size should be the cube root of the polity’s population. [↑](#footnote-ref-30)
31. In addition to the work of Ladewig and Jasinski (2008),the effects on presidential outcomes under the EC of increasing/varying the size of the House have been studied by other authors (e.g., Neubauer and Zeitlin, 2003; Barthélémy, Martin and Piggins, 2014; Miller, 2014). Here we limit ourselves to consideration of results in 2016 under the cube-root proposal. [↑](#footnote-ref-31)
32. In 2000, in contrast, an increase in the size of the House could have mattered in that, in most House sizes starting above 493, including all of them above 655, the popular vote winner, Gore, would also have won the Electoral College (Neubauer and Zeitlin 2003). [↑](#footnote-ref-32)
33. There might have been an effect in 1876 but that is hard to assess.  Differences between a cube-root based EC and the current EC are generally less than 1% and average just 0.3%. [↑](#footnote-ref-33)
34. As quoted in the Los Angeles Times: <http://articles.latimes.com/2012/apr/01/entertainment/la-ca-second-look-20120401> Thanks to Joshua Zingher for this reference on twitter. [↑](#footnote-ref-34)