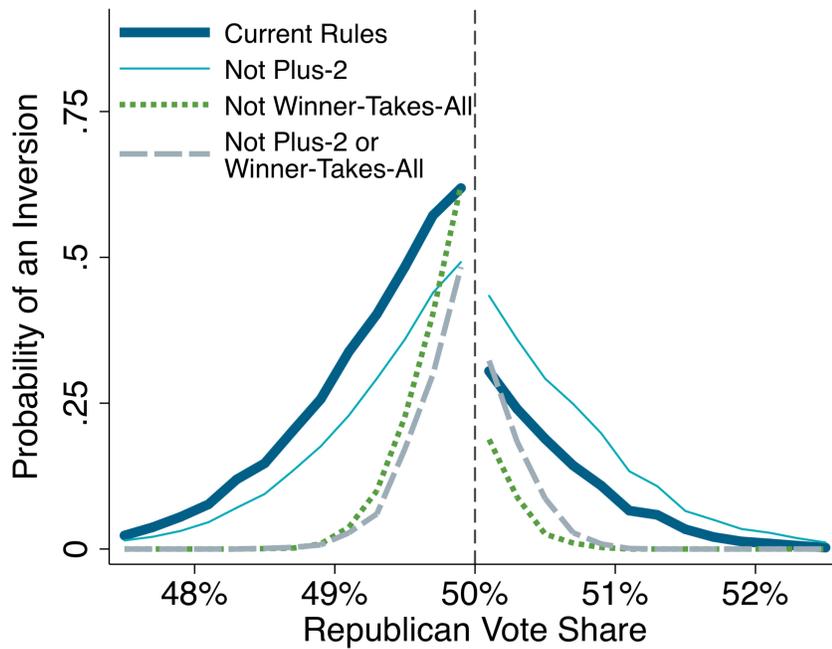


Probability of an electoral inversion, under hypothetical policy changes, using 1988-2016 election results.

Even if the Electoral College is modified, inversions will remain a statistical fact of Presidential politics. Indeed, eliminating the plus-2 Electors for Senators would make inversions *more* likely when Democrats lose the popular vote.



No change to the Electoral College other than a national popular vote would eliminate electoral inversions.

Simulations from UT-Austin economists reveal that widely-discussed features of the Electoral College System — including the two Electors that each state receives for its Senators — do not fully explain inversions.

An *inversion* in the Electoral College happens when the candidate who wins the popular vote is not the candidate who wins the Presidency. The University of Texas Electoral College Study showed inversions are very likely, especially in close elections. So, what features of the Electoral College cause inversions? Could a tweak to election laws or to the rules of the EC end inversions?

To better understand *how* the EC generates inversions, the UTECS team simulated outcomes under alternative aggregation rules, including changes to state law. One set of simulations eliminated the two elector ballots that each state receives for its Senators. This would make the number of Electors in each state

43% Probability of inversion under current Electoral College rules, within a 1% popular vote margin

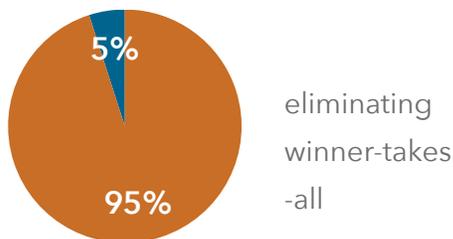
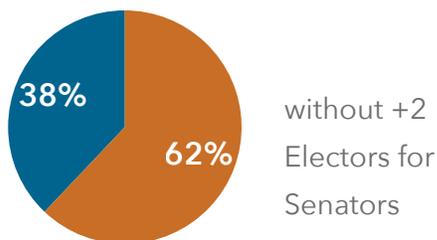
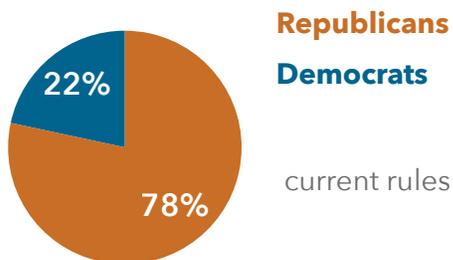
42% Probability of inversion after eliminating +2 Electors for Senators, within a 1% margin

36% Probability of inversion after eliminating winner-takes-all, within a 1% popular vote margin

1.3 million Difference in popular votes amounting to a 1% margin, under 2016 turnout

1 in 8 Fraction of elections since 1828 with a popular vote margin within 1%

When an inversion occurs, which party wins?



more proportional to population. A second change allocated each state's EC ballots in proportion to the state's popular vote (up to the nearest whole ballot), rather than awarding all EC ballots to the (possibly narrow) winner of the state.* The exercise clarifies what contributes to inversions: For example, is it primarily about the disproportional voting power of voters in small states?

Removing the two Electors for Senators would reduce partisan bias, but would leave the overall chance of inversions unchanged.

Neither change would eliminate the risk of inversions in a close election. Although the "+2" Electors feature has received much attention, reversing it leaves the chance of an inversion almost unchanged: in a close election, the probability decreases from 43% to 42%. The main effect of removing the "+2" is that probable inversions favoring Republicans are replaced with probable inversions favoring Democrats. The balance shifts, but inversions remain.

Eliminating "winner-takes-all" would cause a larger decline in the chance of inversions, but would *increase* partisan bias: almost all inversions would be won by Republicans. Both changes together leave in place high probabilities of inversions in close elections.

Many small causes combine to make inversions likely.

How could inversions still happen without winner-takes-all and without the "+2"? The explanation is that many factors contribute to inversions. Popular vote totals depend on the number of *voters*, but Electors are allocated based on the number of *persons* in the last census—including children and adults who cannot vote. Voter turnout is a different fraction of each state's population. In short, there is no reason to expect the Electoral College outcome to match the national popular vote in a close election. Only a national popular vote would eliminate the chance of mismatch between the President and the popular vote winner. No tweaks could do so.

UTECS Brief No. 2. September 2019. All statistical results are from "Inversions in US Presidential Elections: 1836-2016" by Geruso, Spears, and Talesara, available at utecs.org. *Citizen votes are held fixed in this exercise, so it is not meant for understanding how future elections might be affected as voters change behavior in response to new election rules.