

Social Choice 4/27/21 - partisan metrics

"waste" includes all losing votes & excess winning votes

1. For which of the following district outcomes do the two sides waste equal (or nearly equal) numbers of votes?

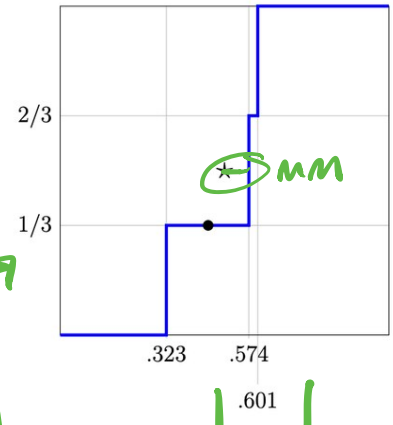
- (A) 49% Democratic, 51% Republican ← D waste 49%, R waste 1%.
- (B) 75% Democratic, 25% Republican ← both waste 25%.
- (C) 33.3% Democratic, 66.6% Republican ← D waste 33.3%, R waste 16.6%.

2. This is the seats-votes curve for a particular election with vote vector (V_1, V_2, \dots, V_m) , drawn from the Republican point of view. Which of the following are true? Mark all that apply.

They always agree on which side has advantage

- (A) $m=3$ and the mean-median score is greater than $1/3$
- (B) the mean-median score shows Democratic advantage while the partisan bias score shows Republican advantage
- (C) $m=3$ and two of the districts had nearly the same vote share
- (D) uniform partisan swing predicts that Republicans would with 66.6% of the seats if they had 60% of the votes

$MM = -.074$
yes: two jumps occur at nearly the same V value



m is the # of districts in this case you can see $m=3$ by the way seat share jumps from 0 to $1/3$ to $2/3$ to all.

This checks out! The blue curve is made via uniform partisan swing, and it shows Rs getting $2/3$ of seats if they had any vote share between .574 and .601