Evaluation of the SCOPA congressional redistricting plan

John F Nagle 3/2/2018

This folder is focused on the plan provided by the Supreme Court of PA which was drawn using the traditional, neutral criteria. Typical of other plans drawn with these criteria, this plan tends to reduce the unfairness only by about half, to 7 D seats for 50% of the vote when I analyze it using both my 2012 & 2014 statewide data base (7s) or what I find using the Cook PVI 2012 & 2016 presidential election data base. However, there were reports that it is more favorable to Democratic voters, with 8 D seats for 50% of the vote, and that leads to an interesting story since my first report on 2/26/18 which I will return to on the second page of this report. But first let me return to that 2/26/18 presentation. The following table shows results for several plans for comparison to the SCOPA plan.



In order the plans are Current = 2011 enacted, Repub = R legislature submitted plan vetoed by the governor, SenateD = a plan submitted by the Senate Democrats, SCOPA=new court map, PetA=the first map submitted by the LWV petitioners, PetB=the second map submitted by the LWV petitioners, HouseD=plan submitted by the House Democrats. N12, N10 and N8 were three maps I drew. With respect to the traditional, neutral criteria, the Current plan and the N3 plan did not adhere well, the Repub, N8 and N10 plans adhered better, but not as well as the other plans.

The table indicates the data base used for evaluating the number of D seats at 50% of the vote, the D vote required to win half the seats and the number of responsive districts. These quantities are more fully defined in B-Evaluations and in the Technical directory.

Comparisons:

1. The predictions using the PVI data and my 7s data are in general agreement, a bit lower for PVI D seats and both higher and lower for D vote and Responsiveness.
2. My plan N12 respected the traditional criteria and also deliberately drew more responsive districts. That also resulted in being more favorable to D, i.e.,slightly higher D seats and lower D vote than for the other plans that adhered to the traditional criteria.
3. The SCOPA plan is overall a bit less favorable to Democrats than the plans drawn by the Petitioners and about the same as the plans submitted by the legislative Democrats.
4. All maps drawn following the traditional, neutral criteria are strongly biased in favor of Republicans. Only by discarding those criteria could I draw the N3 map that is nearly fair and most responsive.

II. Updated 3/2/18 analysis of the SCOPA plan using 2016 election returns data.

Here I come back to the issue that various people have claimed that the SCOPA map is less biased against the Democrats than the analysis in the preceding section. Notable reports have been issued by Nate Cohn of the Upshot/NYT. While I agree with much that is in these reports, they are somewhat confusing regarding the data bases that are quoted for the different results. Here, I start by using the political preferences based on 2016 Presidential election results given in Cohen’s first 2/19 /18 report. The Cohn line in the following table gives my calculations for the number of D seats at 50% vote, %D vote to obtain 9 seats and the number of responsive seats.

I then used the actual 2016 precinct level data for the Presidential race. Differences with the Cohn line can be attribute to round-off error in the Cohn numbers which were only given to two digits. I also used all the other statewide races, which included Senate and the offices of Attorney General, Auditor General, and Treasurer which I aggregated into the ‘rows’ line in the table. The ‘all’ line aggregated all the statewide returns and the ‘average’ line was the average of the four preceding lines. The penultimate line is from the 7s statewide 2012 and 2014 data and the last line is from the Cook PVI which give results like those of other neutrally drawn plans reported in the table on page 1. The first conclusion from this table is that Democrats fare better using any of the 2016 data than from using any of the older statewide data.

The second conclusions from this table is that Democrats fare better just using the 2016 Presidential data than from using any of the other statewide data. The 2016 Presidential data give the rosiest prediction for Democrats, so let us examine this difference further. The next graph compares district level results for the Presidential, Senatorial, and row data. The horizontal axis shows the fraction of the statewide vote at which each district is estimated to flip from R to D using my proportional shift method (see Technical directory and ELJ publication). The districts are ranked in that order. Of course, different data sets rank the districts differently as indicated by the black and orange CD numbers for the Presidential data and the row data respectively. The districts with purple numbers are completely safe; while their rank order shifts for the 7 safe R districts, that makes no difference to any of the measures. One might wish to surmise that this graph shows 8 D seats for 50% D vote for the 2016 Presidential data; the number is 7.81 because there are more responsive/competitive districts leaning D than leaning R and the calculation is described in the Technical directory.



The difference in the graphs between the 2016 P and row data is interesting. The Philadelphia suburban districts 1, 4, 5 and 6 vote more D for President than for the row offices. The reverse was true for districts 8 in the northeast and 17 in the southwest, but these latter two only partially compensate for the greater probability of D seats, especially from the competitive districts 1, 4, 6 and 7.

Cohn muses (2/21) that the SCOPA plan might have been drawn to favor Democrats. If so, I would further muse that it might have been drawn using the 2016 Presidential data rather than the other 2016 statewide data, and certainly rather than older data. If so, Democrats might be concerned that the future mood of the state might not be accurately reflected in the 2016 Presidential race and that data averaged over more races and longer times might be better indicators.

The larger concern, as always, is that even with the relatively more favorable 2016 Presidential data, the SCOPA map is still biased in favor of the Republicans, giving them at least a 10 to 8 advantage with 50% of the vote and requiring 52% D vote to obtain half the seats. And there are fewer than 6 responsive districts. SCOPA has probably done the best it could, but the constraints of the traditional, neutral districting criteria of not splitting antiquated boundaries of political subdivisions precludes obtaining really fair and responsive districts given the unfortunate political geography in PA.

Cohn references with commentary.

<https://www.nytimes.com/interactive/2018/02/19/upshot/pennsylvania-new-house-districts-gerrymandering.html> gives political preferences based on 2016 Presidential election results. I used these to calculate the Cohn line in the preceding table.

[https://www.nytimes.com/2018/02/21/upshot/gerrymandering-pennsylvania-democrats-republicans-court.html](https://www.nytimes.com/2018/02/21/upshot/gerrymandering-pennsylvania-democrats-republicans-court.html%20)  concludes that the SCOPA plan is more favorable to Dems than other maps submitted by Dems. That isn’t the case when I used the older 7s and PVI data sets. I also don’t think his 8.4 D number is valid. But I agree with his overall point; it is what I have been calling “anti-gerrymandering”.

<https://mobile.nytimes.com/2018/02/26/upshot/democrats-did-better-than-on-hundreds-of-simulated-pennsylvania-maps.html> makes interesting comparisons to Chen’s maps using 2016 data. (Note that one has to divide Cohn’s horizontal axis by 2). This piece again says that Dems would get 8.4 seats for the *average* contest, but the *average* 2016 contest had Dems getting 51.3% of the vote, so the 8.4 D seats is inflated as a measure of fairness. While I agree that the SCOPA map comes closer to fairness, I disagree with Cohn’s statement that it is eminently fair. But I appreciate that he declares that “the next big debate” should be whether nonpartisan maps should strive for partisan symmetry (my choice) or should try to avoid political considerations altogether.

Finally, the Seats/Votes curves from five data bases is shown next.

This provides estimates for the number of seats for any vote percentage.