

**IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ALABAMA
SOUTHERN DIVISION**

KHADIDAH STONE, EVAN
MILLIGAN, GREATER
BIRMINGHAM MINISTRIES,
and the ALABAMA STATE
CONFERENCE OF THE NAACP,

Plaintiffs,

vs.

WES ALLEN, in his official capacity
as Secretary of State of Alabama, and
STEVE LIVINGSTON and CHRIS
PRINGLE, in their official capacities
as Co-Chairs of the Alabama
Permanent Legislative Committee on
Reapportionment,

Defendants.

No. 2:21-cv-01531-AMM

Rebuttal report of Baodong Liu, Ph.D.

April 19, 2024

I have been asked to express my opinion on the expert reports of Drs. M.V. Hood III, Wilfred Reilly, Chris W. Bonneau, and Sean P. Trende to the extent they respond to my analysis or raise issues connected to those in my report. This report serves as a rebuttal to their expert reports.

This report first summarizes the limitations of Dr. Hood and Dr. Reilly's findings. Since Dr. Bonneau's report directly addresses my racially polarized voting (RPV) analysis, this report shows why Dr. Bonneau used a flawed and logically inconsistent methodology in his report. It also examines Dr. Bonneau's empirical findings and disproves his conclusions by using his own data. This report finally examines the false and misleading claim of Dr. Trende on the %BVAP threshold for Black-preferred-candidates to win in Senate District 7.

The Limitations of Dr. Hood's Report

Dr. Hood stated that his expert report was written to answer five questions, three of which have nothing to do with the Alabama State Senate redistricting, and none of which I believe are relevant to addressing whether Black voters in Alabama have an opportunity to elect candidates of their choice in the State Senate Districts in the Huntsville and Montgomery regions. Rather than focusing on the Huntsville and Montgomery regions in Alabama, Dr. Hood engaged in a cross-state analysis of the parameters of his own choices. He compared, for example, the voting patterns of Black voters in 20 other states to that of Alabama. He did not provide any reason why he chose the states with at least 10% of Black population, despite the fact that Alabama's Black population share is among the top five states in the nation at above the 25% level. None of his statistics about these states are about the voting choices of Black and white voters in the State Senate biracial elections in Alabama, but he concluded that "Black support for Democratic candidates across these jurisdictions could be characterized as being close to monolithic" (p. 6). His Tables 1 and 2 focused on the Black voter choices in his selection of states for the Presidential and other two statewide elections, but the same tables did not look at the white voter choices for the same elections based on the same polls. He also did not consider the race of the candidates in those elections either.

Throughout his report, Dr. Hood did not perform any RPV analysis when purporting to analyze the existence or extent of racial bloc voting. This is in contrary to his own professional recommendation when it comes to empirical analysis of vote dilution claims. In Dr. Hood's own published article, "From Legal Theory to Practical Application: A How-To for Performing Vote Dilution Analyses," the appropriate approach to an RPV analysis, according to Dr. Hood and his two co-authors, "must also consider the race/ethnicity of the candidates running for election. Of the elections available for analysis, the more relevant are those that feature a minority candidate from the racial/ethnic group suing the jurisdiction in question. For example, in a vote dilution suit brought by Latino voters, one would seek election contests featuring Hispanic candidates, while also keeping in mind the other criteria previously discussed" (Hood, Morrison and Bryan, 2017, p.546).¹ Using biracial elections in vote dilution litigation research is a widely held standard by experts. But Dr. Hood did not follow this long-standing practice he himself recommended in his publications, and did not conduct any racial polarization analysis whatsoever.

After a lengthy comparison of the 20 states with Alabama on non-RPV related topics, Dr. Hood mentioned one national election—the 2016 Republican presidential primary elections at the state level. According to his finding, Ben Carson, a prominent Black conservative candidate, received 10.24% of the votes cast in Alabama. But Dr. Hood did not perform any RPV analysis for Ben Carson in any of the state-level primary contests. My RPV analysis showed that Ben Carson received about 9% of the white vote in Alabama (see Liu's Rebuttal Report in the Milligan case dated December 20, 2021, p. 3) which certainly cannot be regarded as proof for white enthusiasm for a Black conservative candidate.

¹ M.V. Hood III, Peter A. Morrison, and Thomas M. Bryan. 2017. "From Legal Theory to Practical Application: A How-To for Performing Vote Dilution Analyses." *Social Science Quarterly* 99 (2): 536-552.

Dr. Hood also did not analyze any Alabama's State Senate elections in this report. Instead, he once again cited Kenneth Paschal from State House District 73 as an "example of white voters electing a minority candidate." First, State House District 73 is not in the Huntsville or Montgomery region and so tells us nothing about white people have voted in the relevant areas. Second, Paschal won the Republican runoff election in 2021 with 51.1% votes cast, and defeated his white Democratic opponent in the Special General Election at the end with 74.7% of the vote. There is no RPV analysis in Dr. Hood's report to document the extent to which the white voters participated in this primary and voted for Kenneth. As I showed in my RPV analysis of my original rebuttal report for the Milligan case, the overall turnout level was extremely low (5.3%) in this primary, where only 1.7% of the white voting-age population cast their vote.² It is irrational to draw any broader conclusion from this low-visibility primary about white voters in Alabama embracing Black Republican candidates.

More recent elections in Alabama offer more evidence of the white bloc voting against Black candidates even in Republican primaries in the relevant Montgomery region. For example, in the 2024 Republican primary in Congressional District 2 of Alabama, eight candidates ran for office: four white candidates joined the race along with four other Black candidates. The four Black candidates finished 5th, 6th, 7th and 8th places after the election results were announced and together received only 6.2% of the total vote.³ In the Republican primary for the 2024 Montgomery County Commission District 3, Justin Castanza, a white candidate, ran against Cedric Coley, a Black candidate. Castanza won the Republican nomination with 80.38% of the votes cast. Unlike Dr. Hood's choices, these examples from the 2024 elections include the core of the Montgomery County based Senate District at issue. Any suggestion of widespread white willingness in Alabama to vote for Black Republican candidates has no empirical grounding from one isolated example from a House District located outside the relevant regions.

The Limitations of Dr. Reilly's Report

Dr. Reilly states that one of the questions he was asked to answer was: "Is there anything unique to Alabama about the alleged existence of racially polarized voting, or are any patterns of racially polarized voting in Alabama mirrored across the nation?" (p.3). While Dr. Reilly's report cites my findings of RPV in the Huntsville and Montgomery regions, he does not dispute these findings. Instead, he insists that this RPV was not because of racism, but due to the partisan differences between Black and white voters. But Dr. Reilly pursues this question using a flawed methodology on multiple levels while not answering his question about whether racially polarized voting in Alabama is mirrored across the nation at all.

First, Dr. Reilly claims that his research focus as a statistician "is examining the effect of multivariate regression analyses on the outcome gaps between American racial groups" (p. 1). Yet he performed no such multivariate regression analyses to dispute my RPV findings. He simply showed a univariate partisan distribution of Black voters in 16 states as well as Washington DC based on a single 2023 Pew Survey. He did not show the *white* voters' partisan

² As Dr. Hood indicated, Paschal faced no opposition in the 2022 general election. Thus, no RPV analysis can be performed for that election.

³ The white candidates are Albritton, Brewbaker, Dobson, and Harris, and the Black candidates are DuPriest, Gilberry, Shepperson, and Thomas.

distribution from the same survey. Of course, in doing so he failed to perform a true racially polarized voting analysis as such an analysis must account for multiple racial groups, not only one.

Second, Dr. Reilly performed no reliable analysis to answer his own follow-up inquiry about whether partisan preference solely or even primarily determines racial voting patterns in Alabama. His analysis focuses on only one variable at a time. While a univariate analysis can be useful in describing the characteristics of a single variable, it does not show to what extent this variable can be useful to explain another variable, or to be explained by another variable, as he seeks to do with race and party. Dr. Reilly did not conduct any bivariate analysis, not to mention relying on a multivariate regression method he claimed that he usually does as a statistician. In short, his findings presented no empirical evidence whatsoever about what has caused RPV in Alabama's Huntsville and Montgomery regions.

Response to Dr. Bonneau's Report

Similar to Dr. Reilly, Dr. Bonneau concluded that "The lack of success of African American candidates is not because of their race; rather, it is because they overwhelmingly run as members of the Democratic Party" (p.17). Unlike Dr. Reilly, however, Dr. Bonneau chose not to examine the partisan distributions of Black and white voters in Alabama. While Dr. Reilly grouped Black voters into three categories, that is, Republican/Lean Republican, No Lean, Democrat/Lean Democrat, Dr. Bonneau introduced straight-ticket voting as his primary instrument for analyzing partisan influence in Alabama. His emphasis on straight-ticket voting as the cause for RPV results, as shown below, is based on speculation, rather than rigorous statistical analysis.

Dr. Bonneau acknowledged that in Alabama no official record of party registration is available which prevented him from analyzing directly how political parties affect voting there. Yet he conducted no ecological inference analysis to measure the extent to which Black voters voted for the Democratic candidates. But he insisted that the information loss on party identification in Alabama due to lack of partisan registration can be overcome by studying straight-ticket voting. He compiled the Democratic and Republican straight-ticket vote shares in the State of Alabama in the 2018, 2020 and 2022 elections, and found that around two-thirds of Alabama votes in these three elections were cast through straight-ticket voting. He concluded that "most voters are voting for a political party, not a candidate (or candidates)" (p.4).

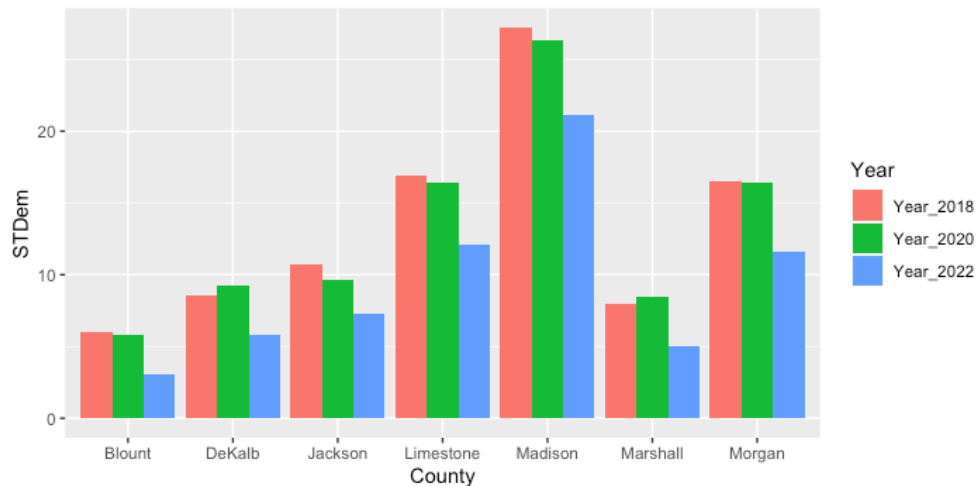
The problem is that it is not clear who are the "most voters" he was referring to. Dr. Bonneau does not explain whether he has any knowledge of these voters directly, nor the racial identities of these straight-ticket voters nor localities/precincts they voters resided in. One naturally asks if two-thirds of Alabama voters voted straight tickets, what is the racial distribution of these voters? Dr. Bonneau's report does not answer that question. A detailed look at his Table 1 and the data behind it undermines his thesis.

First, a careful read of Dr. Bonneau's Table 1 showed that the straight-ticket voting has been increasingly a Republican phenomenon. Between 2018 and 2022, the ratio of Republican straight-ticket voting increased from 38.4% to 45.6%. When it comes to Democratic straight-ticket voting, the ratio declined from 26.8% to 21.0% in the State of Alabama. Moreover,

Bonneau's own data at the county level showed the problematic use of straight-ticket voting as a method to compare the effects of party and race. Dr. Bonneau compiled a spreadsheet with the county-level measure of straight-ticket voting statistics in the Huntsville region (see "Huntsville.xlsx" in Dr. Bonneau's data replication folder). By using the data in this file, I was able to generate Figure 1 which shows in all seven counties of the Huntsville region the Democratic straight-ticket voting has declined over time. In Madison County, which has the largest share of Black voters in the Huntsville region, the decline of Democratic straight-ticket voting is especially pronounced.

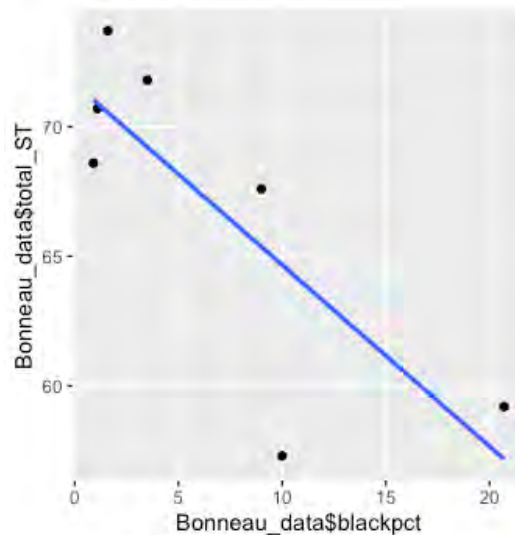
In a separate file called "Al countydata 00-22.xlsx" Dr. Bonneau also listed the data about the voter registration and racial components of the counties. Incorporating this racial component data with the straight-ticket voting data in his Huntsville excel sheet, I was able to generate Figure 2 which shows a negative relationship between Black percentage and the use of straight ticket voting.⁴ The blue best fitting line shows that for every percent increase in Black voters in a county there is a decline of .7% in straight-ticket voting. In other words, the counties with more Black voters in the Huntsville region see less straight ticket voting. Thus, to use straight-ticket voting as the indication of Black voters taking primarily partisan cues, rather than primarily using racial cues, in voting in the Huntsville region is problematic.

Figure 1
Democratic Straight-ticket Voting in Huntsville Region



⁴ Dr. Bonneau did not provide any data about the Montgomery region as he did for the Huntsville region. Thus, Figures 1 and 2 of this report only rely on his Huntsville data.

Figure 2
The Negative Relationship between Black Electorate
and Straight-ticket Voting in Huntsville Region



Dr. Bonneau attempted to use straight-ticket voting to suggest that political parties have replaced race as the determinant of vote choice. But he forgot that political parties are dependent upon how voters sorted themselves in the first place, and often this sorting process is along the racial lines. In his influential book, *Unstable Majorities: Polarization, Party Sorting and Political Stalemate*, prominent political scientist Morris Fiorina pointed out the exact mistake committed by experts such as Drs. Bonneau, Hood and Reilly because of their over-exaggeration of partisan patterns. To study whether voters use straight ticket voting or split-ticket voting, according to Fiorina, scholars need to analyze not only voters but also who are the candidates that are running the elections (Fiorina, 2017, pp. 137-138).⁵ Fiorina explained that “Obviously sorting produces partisan polarization...The problem with using the term ‘partisan polarization’ is that in common usage the modifier ‘partisan’ often gets omitted and then forgotten. Given that as much as 40 percent of the electorate claims not to be partisan, casual references to polarization exaggerate the divide in [partisan] public opinion” (pp. 47-48). Dr. Bonneau fails to examine the candidates in these elections particularly the race of those candidates.

Race or Party as the Cause for RPV?

All of Dr. Bonneau’s statistical analyses of partisan effect in Alabama in general and in the Huntsville region in particular are based on rudimentary correlational analyses. As the famous saying goes, “correlation doesn’t mean causation”. However, Dr. Bonneau implies that his correlative findings show causation.

⁵ Fiorina, Morris P. (2017). *Unstable Majorities: Polarization, Party Sorting and Political Stalemate*. Hoover Institution Press.

His bivariate correlation analysis failed to show any causal effect because he did not perform what social sciences called controlled comparisons. To do so, the scientist needs to at least control an additional variable, other than party, to show that partisan effect still holds. None of Dr. Bonneau's tables holds party constant to test the effect of race, or holds race constant to test the effect of party.⁶ But he mistakenly asserts that his findings are controlled comparison to show the causal effect. He even stated "holding other things constant" when he discussed his findings in Table 4 on page 16 which is only a bivariate regression table without any "other things" held constant in the first place.

To compare the effect of party with that of race, and also to directly address the question of whether the Black voters in Alabama always voted for the Democratic Party regardless which racial candidate is on the ballot, once again I used Dr. Bonneau's own data at the county level. Five Alabama State Senate elections involved both a Black and a white candidate, i.e., a biracial election. These five districts are State Senate Districts 2, 7, 23, 27, and 33 in 2022. I ran an RxC RPV analysis for these five biracial elections, and the results are shown in Table 1.

As shown in Table 1, these biracial elections were racially polarized in that more than 64% of the Black voters voted for the Democratic candidates who are also Black whereas only about 29% of the white voters voted for these Black Democratic candidates.

Table 1
Analysis of Racially Polarized Voting in the Biracial State Senate Elections

Group	Black Cand	White Cand	All-others
White	0.288 (0.273, 0.309)	0.709 (0.686, 0.725)	0.003 (0.002, 0.005)
Black	0.642 (0.62, 0.666)	0.35 (0.325, 0.373)	0.008 (0.005, 0.01)
Total	0.461	0.535	0.004

I further tested whether it was only because of party, rather than race, that led to the racially polarized voting. To do so, I also examined the 2022 non-biracial State Senate elections in Senate Districts 12, 21, and 29 for which Dr. Bonneau provided the data. All these State Senate elections involved Democratic and Republican candidates, but none of the candidates were Black. Thus, the racial cue was taken away and partisan cue remained. As shown in Table 2, using Dr. Bonneau's own data and assuming its accuracy, these elections were not racially polarized: Black voters were no more likely than white voters to cast their vote for the Democratic candidates. Both racial groups cast about 25% of the vote for the white Democratic candidates. In short, based on this limited analysis of the elections data relied on by Dr. Bonneau, RPV only existed in the State Senate elections which involved both Black and white candidates based on Dr. Bonneau's data. It is, therefore, highly likely that race, above and beyond party, led to RPV in these elections based on his data.

⁶ For the importance of controlling variables to establish causal relationships in social science research, see, for example, Gerring, John. (2012). *Social Science Methodology: A Unified Framework*. 2nd edition. Cambridge University Press.

Table 2
Analysis of Racially Polarized Voting in the Non-Biracial State Senate Elections

Group	Dem Cand	Rep Cand	All-others
White	0.229 (0.204, 0.247)	0.761 (0.743, 0.787)	0.001 (0.008, 0.013)
Black	0.248 (0.222, 0.278)	0.75 (0.721, 0.777)	0.008 (0.005, 0.01)
Total	0.252	0.742	0.007

Another way to test the relative effects of race, as opposed to party, is to analyze the elections where the party cue is taken away. In this regard, both Dr. Hood and Dr. Bonneau mentioned the Republican primary of State House District 73 election in 2021. But as I explained above, non-statewide primary elections usually draw very low turnouts among even partisan voters. Dr. Bonneau further mentioned the Democratic State House District 74 primary which featured a Black candidate, Malcolm Calhoun, who lost to the white candidate, Phillip Ensler. I performed an ecological inference analysis and found that the Black turnout was as low as only 5% in that election whereas the white turnout was slightly higher at the 7.1%. In the meantime, the other racial group (i.e., neither Black nor white) turned out at more than 11%. Thus, that Democratic primary was not an election one can rely on to make valid inference about RPV in general.

Alabama, however, does allow researchers to distinguish the effect of race from that of party because of the availability of non-partisan mayoral runoff elections. Whoever wins the first two places in primary elections, regardless of party affiliation, enters into a runoff in these mayoral elections, if the primary results lead to no majority-vote winner in the first round.⁷ Three such mayoral runoff elections took place recently in the Montgomery and Huntsville regions. They are the 2019 and 2023 Montgomery Mayoral runoffs and the 2020 Mayoral Runoff for the City of Decatur. Table 3 shows the RPV analyses for these non-partisan biracial elections.

As shown in Table 3, when the party cue is taken away and only racial cue remains, the elections are racially polarized. All Black candidates received at least 74% of the Black votes and less than 30% of the white votes in these mayoral runoffs. White people voted at similar levels for white candidates. Once again, it is race, rather than party, that drove the election outcomes in these runoff elections.

⁷ Running RPV analysis for the one-on-one primary runoff between a Black candidate and a white candidate produces statistically much more accurate and reliable estimates than running RPV for the initial primary among three or more candidates because two or more candidates from a same racial group in the initial primary may lead to the necessity of combining their votes in one EI operation of RPV analysis.

Table 3: Racially Polarized Voting in Mayoral Runoff**A. The 2019 Montgomery Mayoral Runoff**

Group	Black Cand	White Cand
White	0.216 (0.13, 0.298)	0.784 (0.702, 0.87)
Black	0.872 (0.813, 0.912)	0.128 (0.088, 0.187)
Total	0.697	0.303

B. The 2023 Montgomery Mayoral Runoff

Group	Black Cand	White Cand
White	0.296 (0.217, 0.359)	0.704 (0.641, 0.783)
Black	0.911 (0.877, 0.948)	0.089 (0.052, 0.123)
Total	0.697	0.303

C. The 2020 Decatur Mayoral Runoff

Group	Black Cand	White Cand
White	0.292 (0.215, 0.348)	0.708 (0.652, 0.785)
Black	0.74 (0.583, 0.914)	0.26 (0.086, 0.417)
Total	0.458	0.542

Response to Dr. Trende's Report

The assumption of Black Alabamians always voting for Democratic candidates at the same level without regard for the race or racial cues from the candidate was elevated to even a higher level in Dr. Trende's report. Dr. Trende insists that Black-preferred-candidates (BPCs) always receive a constantly high rate of votes from Black voters and another constant rate from white voters, presumably regardless of the candidate's race or other factors. More specifically, Dr. Trende stated that "the Democratic candidate earns almost unanimous support from Black voters, and typically wins about 1/3 of the support from White voters" (p.26).

With the assumption of these racial-vote ratios for BPCs (in addition to the unknown turnout rates that is not explicitly reported), Dr. Trende conducted his effectiveness analysis and displayed his finding as a line chart in Figure 12 of his report. Based on this chart, he concluded that "even in the 25% BVAP range, the Black candidate of choice would win regularly" in District 7 (p.26).

Dr. Trende's above conclusion cannot stand any scholarly scrutiny. First, there is a strong consensus in voting literature in American political science that both white majority voters and Black minority voters are sensitive to not only who are the candidates on the ballots, but also the racial makeup of the electorate in the district where they make their voting decisions (for the explanations for why political parties have evolved over the U.S. history in different racial contexts around different formations of racial and religious coalitions, see my most recent book, *Political Volatility in the United States: How Racial and Religious Groups Win and Lose*).⁸ White crossover voting for Black candidates has never been stable in the American elections, and particularly not so in Alabama. Even President Barack Obama saw his white crossover voting decline in his second presidential election. Thus, to assume the rate of Black voters at the almost unanimous support level constantly and white crossover vote always at about 1/3 level for BPCs are unrealistic to say the least.

Second, we can do a simple verification study of Dr. Trende's claim that the BVAP at the 25% range is sufficient for BPCs to win in District 7. To make our calculation extremely easy to follow, let us say that the total number of votes cast in a given election in District 7 is represented by the letter V, and we know from Dr. Trende's assumption that Black voters are 25% of the voters and white voters represent the other 75% of the voters in this given election. Let us further assume that Black turnout is 100% and they vote for the BPC at a stunning and unrealistic 100% level. At the same time, white voters also turn out at an unrealistic 100% level and 33% of them vote for the BPC. Thus,

$$\begin{aligned}
 &\text{The \% of total votes cast for the BPC} \\
 &= \text{total Black votes for BPC} + \text{total white votes for BPC} \\
 &= 25\% * V * 100\% * 100\% + 75\% * V * 100\% * 33\% \\
 &= 25\% V + 24.75\% V \\
 &= 49.75\% V
 \end{aligned}$$

In other words, the BPC in this hypothetical racial context received a total of 49.75% of the total votes, which is still less than the majority threshold to win. The BPC's opponent would have received 50.25% of the total votes cast and won the election. Notice the above calculation was based on the unanimous support of Black voters and 33% white crossover for the BPC, and both racial groups turned out at 100%. Of course, these are unrealistic assumptions. But even with these assumptions in an ideal scenario, the BPC still would have lost in this hypothetical district with 25% of the electorate as Black.

In short, Dr. Trende's effectiveness analysis relied on unrealistic assumptions. There is little basis for his conclusion about the 25% BVAP range to perform for BPCs or his reasoning on how to test the effectiveness of %BVAP in the first place. The true reality in Alabama elections is that Black voters usually turn out at a lower rate than do white voters; for both racial groups the race of the candidate is an important factor in deciding who to support.⁹

⁸ Liu, Baodong. *Political Volatility in the United States: How Racial and Religious Groups Win and Lose*. Lexington Books. (2022 Hardcover, 2023 paperback).

⁹ For detail Black and white turnout rates historically, see Liu, Baodong. *Political Volatility in the United States: How Racial and Religious Groups Win and Lose*. Lexington Books. (2022 Hardcover, 2023 paperback), p.157.

Conclusions

Overall, Defendants' experts did not dispute my findings that RPV exists in the jurisdictions concerned in this lawsuit, and the main thesis of their reports is that the political parties were the sole or primary cause for the racially polarized voting discovered in my report. Instead of conducting any RPV and partisan polarization analysis on their own, Dr. Hood and Dr. Reilly only used univariate analysis by focusing on one variable at a time, and insisted incorrectly and with little support that RPV was not a result of racial differences between white and Black voters, but rather purely a consequence of partisan polarization.

Without investigating the effect of partisanship by controlling for race, Dr. Bonneau used the statistics of straight ticket voting at the county level to make his overarching argument that race has disappeared in influencing Alabama politics, and parties are in total control of the political landscape in terms of election outcomes including RPV. To test the validity of his argument, this report adopted the data directly from Dr. Bonneau, and demonstrated why after all it is race more so than political party that was the driving force for the RPV patterns that stubbornly endured in the Huntsville and Montgomery regions of Alabama. Finally, this rebuttal report proves why Dr. Trende's claim that only 25% BVAP is needed to elect Black-preferred-candidates in State Senate District 7 was made by unrealistic and irrational assumptions and was factually false based on a simple verification analysis.

I declare under penalty of perjury that the forgoing is true and correct. Executed on April 19, 2024.

A handwritten signature in black ink, appearing to be 'Baodong Liu', written over a horizontal line.

Baodong Liu, Ph.D.