Weakening the Voting Rights Act reduces minority representation and electoral competition

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Abstract

In April 2026, the U.S. Supreme Court issued the *Louisiana v. Callais* decision, weakening the Voting Rights Act (VRA). We estimate the effects of *Callais* on minority representation and electoral competition in the U.S. House under two scenarios: (1) congressional districts are drawn in a race-blind, nonpartisan manner without complying with the pre-*Callais* VRA, and (2) both parties pursue aggressive partisan gerrymandering without former VRA protections. Using state-of-the-art redistricting simulations that satisfy traditional redistricting principles and state-specific criteria, we evaluate the effects of *Callais*. We find that, in aggregate, the pre-*Callais* VRA produced aggregate levels of minority representation similar to race-blind nonpartisan redistricting, suggesting it conferred little partisan advantage. Under aggressive gerrymandering, however, *Callais* is likely to benefit Republicans while reducing minority representation, particularly in Southern states with large, geographically concentrated Black populations. It also further reduces electoral competition by 24 House seats, on average.

Keywords: redistricting • voting rights • minority representation • partisan gerrymandering

Introduction

In April 2026, the United States Supreme Court decided *Louisiana v. Callais*, eliminating key remaining protections for minority representation provided by the Voting Rights Act (VRA). For decades, Section 2 of the VRA had served as an effects-based standard for bringing litigation to challenge structural limits to minority voting power, such as districting plans that cracked or packed their communities. Chief among

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the changes in the *Louisiana v. Callais* decision (hereafter *Callais*) was imposing additional requirements for demonstrating minority vote dilution. The Court held that minority voting power could only be considered after accounting for all other possible considerations, including explicit partisan gerrymandering. Combined with the Court's 2013 decision in *Shelby County v. Holder*, *Callais* substantially weakens the VRA's remaining principal mechanisms for protecting minority voters' ability to elect their preferred candidates.

We quantify the consequences of weakening the VRA in congressional redistricting. We use algorithmic redistricting tools to investigate two scenarios: race-blind redistricting and aggressive partisan gerrymandering (Kenny et al. 2023; McCartan and Imai 2023; O'Sullivan, Imai, and McCartan 2026; Cannon et al. 2023). In our race-blind analysis, we generate alternative nonpartisan congressional redistricting plans that satisfy traditional redistricting principles and state-specific legal constraints while ignoring the pre-*Callais* interpretation of the VRA. Comparing these plans with an otherwise identical ensemble generated under the pre-*Callais* VRA regime enables us to estimate the consequences of *Callais* in the absence of partisan gerrymandering. We conduct a second analysis using explicitly gerrymandered plans designed to maximize the number of safe seats for the majority party in each state. These plans allow us to examine how partisan gerrymandering may affect minority representation under a weakened VRA. By comparing them with the race-blind nonpartisan ensemble, we quantify the effects of *Callais* under a scenario of nationwide partisan gerrymandering.

We find that weakening the VRA is likely to reduce minority representation in Congress and further diminish already low levels of electoral competition. Under race-blind, nonpartisan redistricting, the number of minority-opportunity districts declines by approximately 1.9 while the expected Republican seat share increases by about 1.1. These effects remain modest because most minority-opportunity districts persist even without VRA protections, as traditional redistricting criteria and the geographic concentration of minority voters often keep minority communities intact. This also suggests that the pre-*Callais* interpretation of the VRA protected minority representation without creating large partisan advantages.

We find that if states continue to aggressively engage in partisan gerrymandering, the expected loss in minority representation will become much more severe. Under a weakened VRA, partisan gerrymandering could reduce the number of minority-opportunity districts by approximately 13.1 seats, even if the national partisan effects largely offset one another as states respond strategically to each other's redistricting efforts. While the net partisan effect of all-out partisan gerrymandering ultimately depends on which states redraw their maps, we find consistent evidence across scenarios that without VRA protections minority representation and electoral competition would likely decline.

Our findings are the first to systematically quantify how weakening the VRA will likely influence congressional elections. Existing work has studied state legislative districts and shown that aggressive partisan gerrymanders in the absence of VRA protections are likely to eliminate opportunities for minority voters to elect their candidates of choice (Chen and Stephanopoulos 2020; Palmer and Schneer 2026). We also provide new ensembles of nonpartisan redistricting plans drawn for post-*Callais* analyses, which can be used to evaluate the partisan bias of ongoing mid-decade redistricting plans, supplementing existing nonpartisan ensembles under the pre-*Callais* VRA (McCartan et al. 2022).

Estimating the effects of *Callais*

Under *Callais*, map-drawers may treat compliance with the VRA as a secondary consideration, whereas compliance with federal law previously had to be established before other redistricting criteria were considered. In practice, this means that *Callais* permits map-drawers to prioritize other redistricting objectives, such as partisan advantage, even when doing so diminishes minority voters' ability to elect their preferred candidates. This change allows for more aggressive partisan gerrymandering because many states can now maximize partisan advantage without being constrained by the VRA.

We leverage large ensembles of algorithmically generated redistricting plans to estimate the effects of weakening the VRA under two distinct scenarios: (1) states adopt race-blind, nonpartisan redistricting and (2) states pursue aggressive partisan gerrymandering unconstrained by VRA requirements. To investigate the first scenario, we use a large national ensemble of "VRA-aware," non-partisan redistricting plans that could have been drawn under the pre-*Callais* legal regime while satisfying the VRA, traditional redistricting principles, and state-specific legal requirements (McCartan et al. 2022). We also generate a new national ensemble of "race-blind," nonpartisan redistricting plans that are unconstrained by the pre-*Callais* VRA requirements. Apart from these requirements, the plans satisfy the same criteria as the VRA-aware ensemble, including equal population, contiguity, compactness, and state-specific legal constraints. Comparing the two ensembles isolates the effect of removing VRA protections on outcomes such as minority representation and electoral competition under nonpartisan redistricting.

Next, we evaluate the consequences of partisan gerrymandering under a weakened VRA, assuming that states seek to maximize partisan advantage. Even before *Callais*, Florida began redrawing its congressional districts under the expectation that VRA protections would be weakened. Several states have since pursued similar strategies. For example, Tennessee lawmakers dismantled a majority-minority district in Memphis while creating an additional Republican-leaning district, explicitly citing partisan objectives. To analyze this all-out partisan gerrymandering scenario, we generate a national ensemble of redistricting plans designed to maximize partisan advantage without regard to the minority-representation requirements imposed under the pre-*Callais* VRA regime. In our optimization process, we operationalize partisan advantage as the number of safe seats held by the party controlling the state legislature. Comparing this gerrymander with the race-blind nonpartisan ensemble enables us to estimate the impact of *Callais* under a scenario of continued aggressive partisan gerrymandering.

Effects on minority representation

We find that *Callais* is likely to reduce the number of congressional districts in which minority voters can elect their preferred candidates, if states continue to engage in aggressive partisan gerrymandering. The top panel of Figure 1 displays the distribution of Democratic-majority districts by minority voting-age population (VAP) under four sets of redistricting plans: race-blind nonpartisan simulations (yellow 95% predictive intervals), VRA-aware simulations (black intervals), the currently enacted plans (left bar within each bin), and the optimized partisan gerrymanders (right bar within each bin). We use these simulations to evaluate changes to minority-opportunity districts, in which the preferred party of minority voters generally wins and minority voters make up a majority of the winning coalition. We find that the national total of minority-opportunity districts under race-blind simulations is similar to the corresponding total under VRA-aware simulations. This suggests that, in a world without partisan gerrymandering, the aggregate impact of *Callais* on the total number of such districts would likely be modest.

However, this aggregate comparison masks substantial variation across states. To examine this variation, we estimate the *differential harm* across racial groups. McCartan and Kenny (2026) defines *harm* as the decrease in probability of electing one's preferred candidate due to redistricting, relative to a set of counterfactual plans under which they would have elected their chosen candidate. Then, we take the *differential harm* by comparing this quantity across racial groups. The estimates shown in Figure 1 compare the rate at which minority and white voters are harmed by plans under each scenario.

The bottom panels of Figure 1 present estimates of differential harm between Black (left) or Hispanic (right) voters and white voters in states where the VRA could meaningfully affect congressional redistricting. Under race-blind nonpartisan redistricting (black bars), Black voters experience greater harm than white voters in several Southern states, including Alabama, Mississippi, and Louisiana. In these states, VRA constraints had previously required map-drawers to create districts that preserved minority communities' ability to elect their preferred candidates. At the same time, some states, including Michigan, Washington, and California, show reductions in differential harm for Black voters. These gains arise because race-blind simulations sometimes produce multiracial coalition districts rather than relying solely on single-race majority-minority districts. Thus, gains in some medium-sized and large Democratic-leaning states offset losses in traditionally Republican states. Figure A10 presents estimates for all states.

Hispanic voters show a similar pattern of differential harm, though the effects tend to be smaller in magnitude. In several states, the differential harm is driven by changes to Black opportunity districts, where Hispanic voters would often share representation.

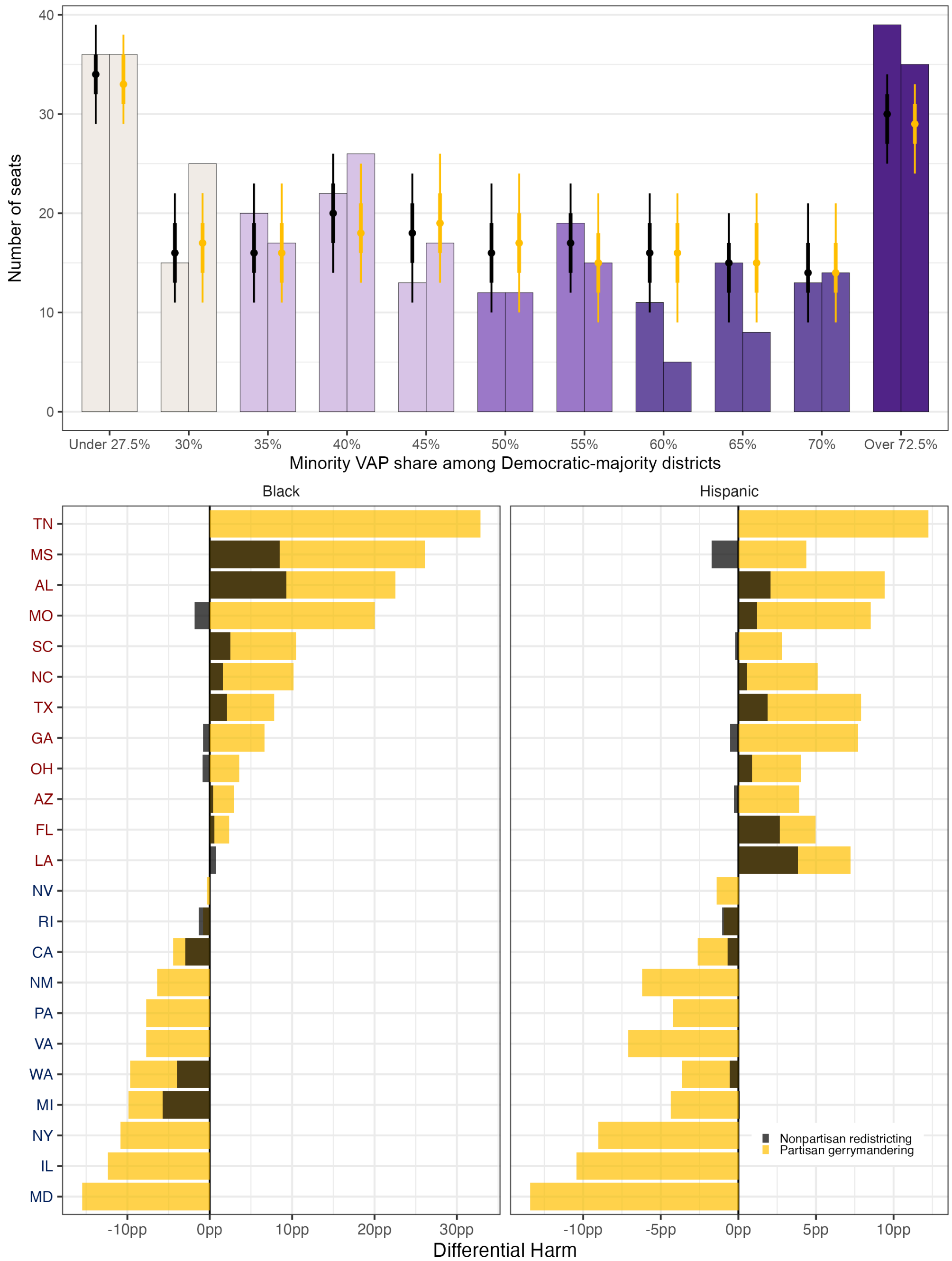

Figure 1: Weakening the VRA will change the nature of minority representation. The top panel shows the distribution of Democratic districts across minority voting age population share bins. Bars show the count of seats in each bin under enacted plans on the left and under optimized partisan gerrymanders on the right. Estimates with 95% simulation intervals show VRA-aware simulations in black and race-blind simulations in yellow. The bottom panels show differential harm for Black and Hispanic voters in selected states. Positive values indicate higher harm rates for minority voters than white voters.

These patterns suggest that the pre-*Callais* VRA primarily functioned as a protective floor for minority representation. Rather than creating many more minority-opportunity districts than what one would expect under race-blind nonpartisan redistricting, the VRA primarily protected the small number of districts where large, geographically compact minority communities would otherwise fail to elect their preferred candidates. In other words, we find that the VRA's principal effect was to increase the likelihood that minority-opportunity districts would be maintained where the redistricting process might otherwise have diluted them, rather than to generate substantial advantages for minority voters. Figure A3 shows how weakening of VRA protections alters the probability that a precinct falls in either minority-opportunity or competitive districts across simulated maps.

However, in the more likely scenario that states continue to aggressively gerrymander, we find these reductions in minority representation would be much larger. In this scenario, minority representation falls by approximately 15.0 seats from existing levels, or roughly by half. This is shown in Figure 1 by the large vertical gaps between the race-blind simulations (yellow intervals) and gerrymandered plans (right bars in each binned pair), as well as by the larger differential harm estimates in many states.

Effects on partisan control in Congress

Post-*Callais* redistricting can dramatically reshape individual state delegations, even if national partisan consequences are modest under race-blind, nonpartisan redistricting. As shown in the left panel of Figure 2, the differences between the simulated nonpartisan ensembles imply an average national shift of approximately 1.1 seats toward Republicans, albeit with substantial uncertainty. Several states lose Democratic-leaning districts when VRA constraints are removed, including Southern states such as Alabama and Mississippi. These effects are not universal, however. Due to the South's long history of residential segregation, many minority voters remain geographically concentrated in urban areas. As a result, even in the absence of VRA protections, many of these communities would continue to be placed in Democratic-leaning districts in a substantial fraction of simulated nonpartisan redistricting plans. Figure A1 shows the undifferenced versions of the left panel of Figure 2.

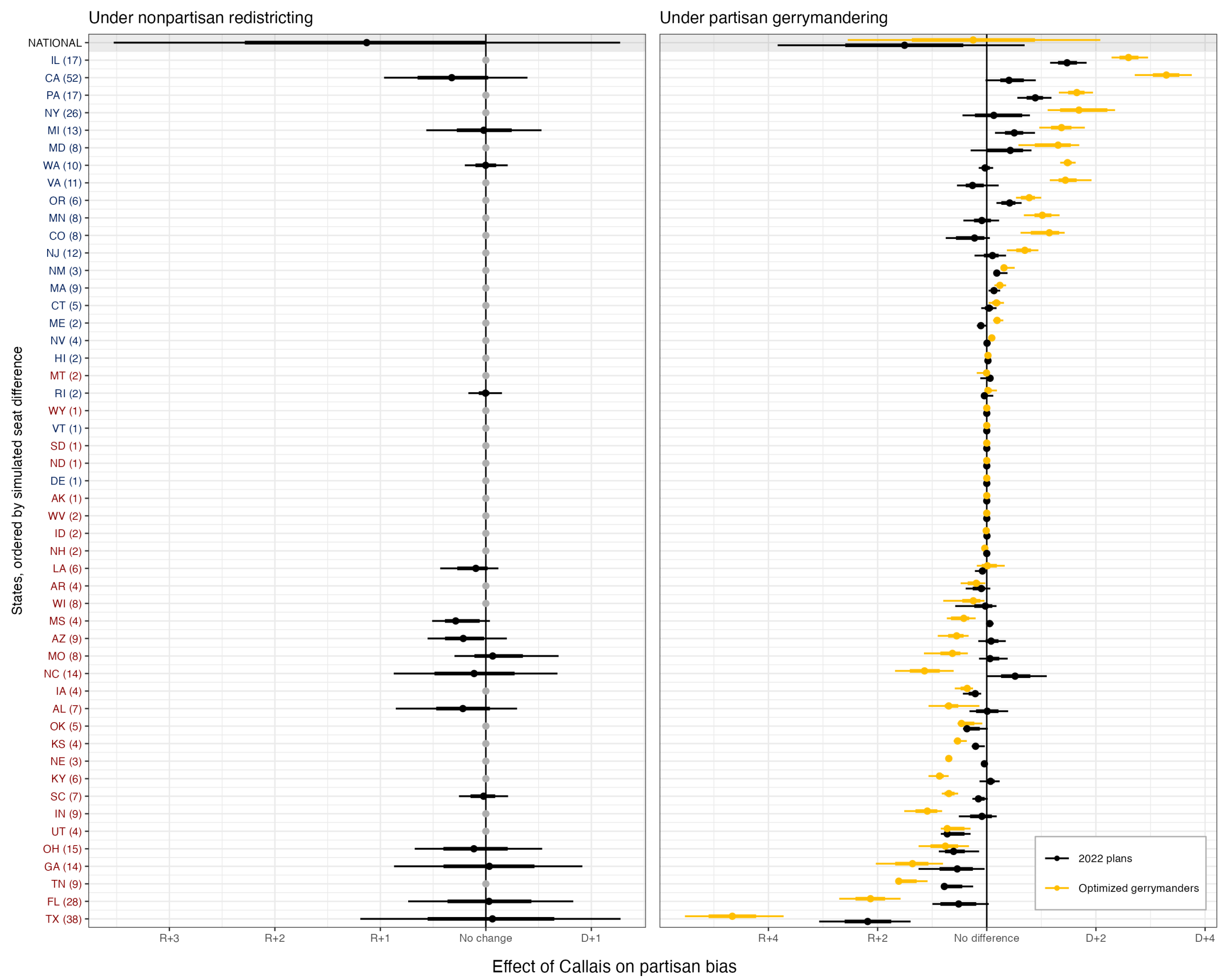

Figure 2: The left panel shows the effects of the Callais decision on partisan advantage under nonpartisan redistricting, where race-blind simulations would generally decrease Democratic seats in several states compared to VRA-aware simulations. Grey points indicate states where race-blind simulations are already consistent with VRA requirements. The right panel shows these effects could be much greater under aggressive partisan gerrymandering. Estimates with 95% confidence intervals show differences from optimized partisan gerrymanders (yellow) and enacted plans (black), with width indicating the simulation range. States are sorted vertically by the size and direction of the change. The national estimates aggregate effects across states.

However, in practice, many states are likely to exploit the additional leeway created by a weakened VRA to draw district boundaries that favor the party controlling the redistricting process. Like with minority representation, we see much larger partisan effects under the gerrymandering scenario. Opportunities for additional Democratic-leaning districts arise primarily in large and medium-sized states such as Illinois, New York, and California, where the weakening of VRA constraints expands the set of feasible redistricting plans. Opportunities for additional Republican-leaning districts are primarily concentrated in Southern states, where the removal of VRA protections may permit the reconfiguration of existing majority-minority districts. In states including Tennessee and Alabama, such changes have resulted in several more Republican-leaning districts than we would expect under race-blind, nonpartisan redistricting. Figure A2 shows how these opportunities vary across states relative to the enacted and optimized plans, while Figure A5 shows the geography of the maximum set of these optimized plans, including where our set of examlpe optimized gerrymanders would pack and unpack majority-minority districts or remove competitive districts.

An all-out gerrymandering race does not produce a clear national partisan winner if both parties fully exploit the opportunities available to them. Figure A7 reports these optimized delegations on a district-by-district basis. Under this scenario, the estimated national effect remains slightly favorable to Republicans, but the advantage is smaller than under race-blind nonpartisan redistricting and is accompanied by substantial uncertainty. This result depends critically on both parties being able to pursue aggressive redistricting strategies wherever opportunities exist. In practice, some of the largest opportunities for Democratic gains are located in states where redistricting reform would face institutional barriers, as discussed in the next section. Consequently, a modest Republican advantage could become larger if Democrats are unable to capitalize on these opportunities while Republicans continue to do so elsewhere, as shown by the restricted scenarios in Figure A8 and Figure A9. Table A1 summarizes these scenarios, which vary the political and institutional barriers that Democrats and Republicans would need to clear to convert redistricting opportunities into seats. Figure A6 shows that the enacted 2026 plans with states that have already redrawn produce a larger net Republican advantage relative to 2024.

Our partisan results show that a weakened VRA creates broad, but surprisingly balanced, opportunities for partisan gain through gerrymandering. Whether states will fully exploit these opportunities, however, remains uncertain. Some large Republican-controlled states may decline to pursue further gerrymanders, as recent developments in Indiana and South Carolina suggest. Democratic-controlled states, meanwhile, may choose not to dismantle existing minority-controlled districts for explicit partisan gain, or may face procedural barriers to doing so. Further, we find aggressive gerrymandering would also likely lead to a steep decline in electoral competition, reducing competitive seats by 24.0, as demonstrated in Figure A4.

Limitations of our analysis

Our race-blind simulations characterize the range of feasible redistricting plans under specified legal and procedural constraints. They do not represent predictions of the plans that states will ultimately enact. Some states have already begun redrawing district boundaries in response to *Callais* with the explicit goal of increasing partisan advantage. Therefore, enacted plans may differ substantially from the distribution of simulated plans. Instead, the race-blind simulations are best viewed as a benchmark for understanding the consequences of weakening the VRA as compared to nonpartisan redistricting. They are particularly informative for states that prohibit partisan gerrymandering or rely on independent redistricting commissions. Our optimized plans therefore illustrate the partisan opportunities created by a weakened VRA for mapmakers willing and able to exploit them, rather than forecasting the specific choices states will make.

Net national estimates under our gerrymandering scenario also depend on which states ultimately redraw their plans. State legislatures may choose less aggressive maps for a variety of reasons, such as litigation risk, constituent opposition, or incumbent protection. Conversely, some legislatures may pursue more aggressive strategies than those considered here, accepting greater risk of future losses in exchange for the possibility of larger seat gains. Democratic gains would require states such as New York, New Jersey, and Virginia to overcome existing independent commissions or other institutional constraints through legislation or constitutional amendments. These obstacles can be surmountable but not automatic —California, for example, overcame them through Proposition 50. Republican gains, by contrast, depend on Republican-controlled states redrawing aggressively and surviving state and federal litigation. States such as North Carolina and Texas may face additional risks because they have already implemented aggressive gerrymanders that dilute previously safe Republican districts in order to create additional Republican-leaning seats. Thus, if only one party is able to exploit the post-*Callais* environment effectively, the national partisan effect could differ substantially from the balanced benchmark reported above.

Lastly, our use of opportunity districts as a measure of minority representation necessarily abstracts from the legal, political, and electoral factors that ultimately determine whether minority voters can elect their preferred candidates. Some districts that appear to provide minority electoral opportunities may fail to do so in practice, for example if a minority-preferred candidate loses in a primary election. Conversely, districts that fall below a given minority population threshold may still provide substantial electoral influence through coalition voting or high levels of crossover support from nonminority voters.

Conclusion

Callais represents a significant weakening of the legal protections that have historically aided minority representation in congressional redistricting. Our analysis suggests that the decision is likely to reduce minority representation in Congress. Under race-blind redistricting, some minority-opportunity districts survive because high levels of residential segregation, combined with traditional redistricting criteria such as contiguity and compactness, often keep minority communities intact. Many other minority-opportunity districts, however, disappear, particularly in the South, because the pre-*Callais* VRA required map-drawers to avoid cracking minority communities across multiple districts or packing them within a small number of districts.

Partisan gerrymandering is likely to exacerbate these losses and lead to even lower levels of electoral competition. Strategic gerrymandering can create large state-level changes in minority representation, even when partisan effects could offset each other nationally. In this way, a focus on the national seat balance of post-*Callais* redistricting could understate the decision's consequences for representation. If states continue their ongoing tit-for-tat redistricting war and pass plans in response to one another to keep the net partisan effects small, our estimates imply large declines in minority representation and electoral competition.

Congress could reduce these harms by enacting a federal ban on partisan gerrymandering. States can also adopt reforms like independent redistricting commissions, which existing work has shown reduce gerrymandering by constraining partisan actors (McCartan et al. 2026). These solutions, though may be unlikely, are effective, as when rules such as bans on partisan gerrymandering or procedures like independent commissions exist, our simulations show that both the partisan and minority representation effects of *Callais* are constrained, reducing the risk of lower minority representation and competitiveness even without VRA requirements.

Materials and methods

Race-blind ensembles are generated by modifying prior simulations that included VRA constraints (McCartan et al. 2022). We use the same redistricting simulation tools (McCartan and Imai 2023; O'Sullivan, Imai, and McCartan 2026). The pre-*Callais* ensembles are VRA-aware and were drawn to comply with traditional redistricting criteria, state-specific rules, and the pre-*Callais* interpretation of the VRA requirements. The post-*Callais* ensembles remove racial constraints while retaining the same requirements for equal population, contiguity, compactness, and state-specific rules. Comparing these two ensembles isolates the effects of removing prior VRA protections under a nonpartisan redistricting process.

Simulated partisan gerrymanders are generated with heuristic optimizers. We use short-burst optimization to search for plans that improve the target party's expected seat count (McCartan 2024; Cannon et al. 2023). Across states, we use several scorers and Markov chain Monte Carlo algorithms (Kenny 2026a; Autry et al. 2021) to search for plans that optimize the expected number of reasonably safe seats for the target party. We define a safe seat as one in which the majority party received at least 53% of the two-party vote in the 2024 presidential election. For every state, we run the optimization algorithm over two dozen times to discourage our optimizations from converging to similar local optima. We used Claude Opus 4.8 to assist in writing scaffolding code for running our simulations on a computing cluster and OpenAI GPT-5.5 for improving `ggplot2` plot code. Additionally, we include and score several hand-drawn gerrymanders which were publicly published on Dave's Redistricting App. The target party is chosen based on which party has majority control of the legislature, and either the governor's office or a supermajority veto. In states that have divided control of the state legislature, we optimize for the party that controls the governor's office. These optimized plans approximate the reasonable, available partisan gains under a weakened VRA.

Expected seats are estimated from recent election data. Our baseline uses 2024 electoral estimates (Kenny 2026b). District vote shares are translated into expected seats using an existing model that is calibrated based on prior congressional swings (Kenny et al. 2023). Estimates for harm rely on estimates of vote choice by race at the precinct level for the 2020 presidential election (Kenny 2023).

We define minority-opportunity districts as typically Democratic seats with more than 35% minority VAP, rather than as districts where minority voters necessarily make up an absolute majority. We use the complement of the non-Hispanic white VAP as the minority population.

Data and code availability

All simulated plans are available on the Harvard Dataverse (Kenny et al. 2026a). All other code and data is included in the replication package for the manuscript, available on the Harvard Dataverse (Kenny et al. 2026b).

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A. Appendix

A.1. Raw simulation and gerrymandering changes

Our analysis in the main text relies on two comparisons: between VRA-aware simulations and race-blind simulations (both are nonpartisan), and between optimized partisan gerrymanders and non-partisan race-blind simulations. Here, we present additional state-level summaries for these comparisons. Figure A1 shows Democratic seat shares under the VRA-aware and race-blind simulations in selected states. Figure A2 shows the corresponding state-level changes from enacted plans to optimized gerrymanders, measured relative to the race-blind non-partisan simulations. These are the differences in the medians in the right pane of Figure 2. Figure A3 maps where the two nonpartisan ensembles diverge, showing the change in the share of simulated plans that place each precinct in a minority-opportunity Democratic district or a competitive district once racial constraints are removed.

A.2. Electoral competitiveness

Figure A4 shows how weakening the VRA would likely affect electoral competition. The number of competitive districts is already low, as shown by the gap between the VRA-aware simulations and enacted plans (Kenny et al. 2023). The optimized partisan gerrymanders further reduce the number of districts near 50% Democratic vote share. This is expected, as turning competitive seats into safe seats is a typical strategy for drawing gerrymanders.

A.3. All-out gerrymandering district-level implications

In the main text, we report the national partisan consequences of an all-out gerrymandering scenario at the state-level (see Figure 2). Here, we report the district-level changes which make up those national estimates. Each row presents the districts by state, for the newly enacted plans in 2026 and optimized plans for the 2028+ possible redraws. Each district shows modelled partisanship using the 2024 electoral baseline and the model described in Material and Methods. For all figures, the black vertical line indicates the 2024 cutpoint between Democratic and Republican seats.

- If the line is between two red boxes, this indicates a pro-Republican change.
- If the line is between two blue boxes, this indicates a pro-Democratic change.
- If the line sits between the red and blue boxes, there is no change in seats by party for that state.

Figure A6 shows the enacted plans as of June 15, 2026 for states with 2026 redraws. The immediate effect of redrawing plans for 2026 is a larger Republican advantage than in 2024. Figure A7 includes all states with optimized plans in the 2028+ opportunity set. Compared to 2026, if all states engage in redistricting then the advantage would diminish for the Republicans. Figure A8 restricts the analysis to states where one party controls the legislative chambers involved in redistricting. This restriction produces a similar national balance to the 2028+ possible redraws, with a smaller estimate of Democratic seats. Finally, Figure A9 removes Arizona, Colorado, New Jersey, New York, Virginia, and Washington. These states are places where pursuing the optimized plan would likely require overcoming large institutional barriers, including constitutional amendments. Excluding these states modestly increases the Republican advantage.

Table A1 pools the district-level results across the gerrymandering scenarios, showing whether partisan changes come from safe seats, lean seats, minority-representation changes, or reduced competitiveness. District vote shares aggregate precinct-level 2024 presidential results (Kenny 2026b), and minority VAP shares come from the 2020 Census data underlying the simulation maps (McCartan et al. 2022). The 2022 row uses the enacted plans from the 50-state simulations, the 2024 row uses the 119th Congress district boundaries, and the 2026 row substitutes the newly enacted plans in states that have redrawn. Expected seat counts in every row are computed from the same election data, so differences across rows reflect boundary changes rather than candidate or turnout effects (Kenny et al. 2023).

Table A1: Scenario-level seat, minority-representation, and competitiveness counts. Seat bins use 2024 two-party presidential vote share by district. Competitive districts are 45-55% Democratic. MMD means minority VAP >50%; opportunity means minority VAP >35%. Net rows show changes in Republican seats and total opportunity districts versus the 2022 actual plans.

Measure	2022 actual	2024 actual	2026 redraws	2028+ all optimized	2028+ leg. control	2028+ excl. barriers
R 63+	100	95	82	68	67	70
R 53-63	104	109	133	153	156	156
R 50-53	24	26	21	5	10	13
D 50-53	34	31	26	17	16	16
D 53-63	81	81	88	130	120	111
D 63+	92	93	85	62	66	69
MMD D	98	100	96	86	89	85
MMD R	20	20	21	21	21	20
Opp D	148	146	140	137	137	129
Opp R	68	67	79	93	93	97
Competitive	92	91	75	59	65	67
D total	207	205	199	209	202	196
R total	228	230	236	226	233	239
Net R	0	2	8	−2	5	11
Net opp	0	−3	3	14	14	10

A.4. Minority voting power

Figure A10 shows the full-state version of the differential harm estimates shown in the main text. This measures whether Black and Hispanic voters are more likely than White voters to be harmed by a plan. We show these differences for race-blind simulations and optimized gerrymanders separately. Counter-intuitively, some partisan gerrymanders can create additional opportunities for minority voters, or create majority-minority Democratic districts where they were previously less secure. In Nevada, for example, the optimized Republican plan packs parts of NV-1, NV-3, and NV-4 in ways that creates a single majority-minority district, as opposed to the three opportunity districts prior. Other regions, especially the South, lose minority voting power more unequivocally. For example, partisan gerrymandering in Mississippi would be likely to create four safe Republican seats, even though each district would have roughly 40–50% minority VAP.

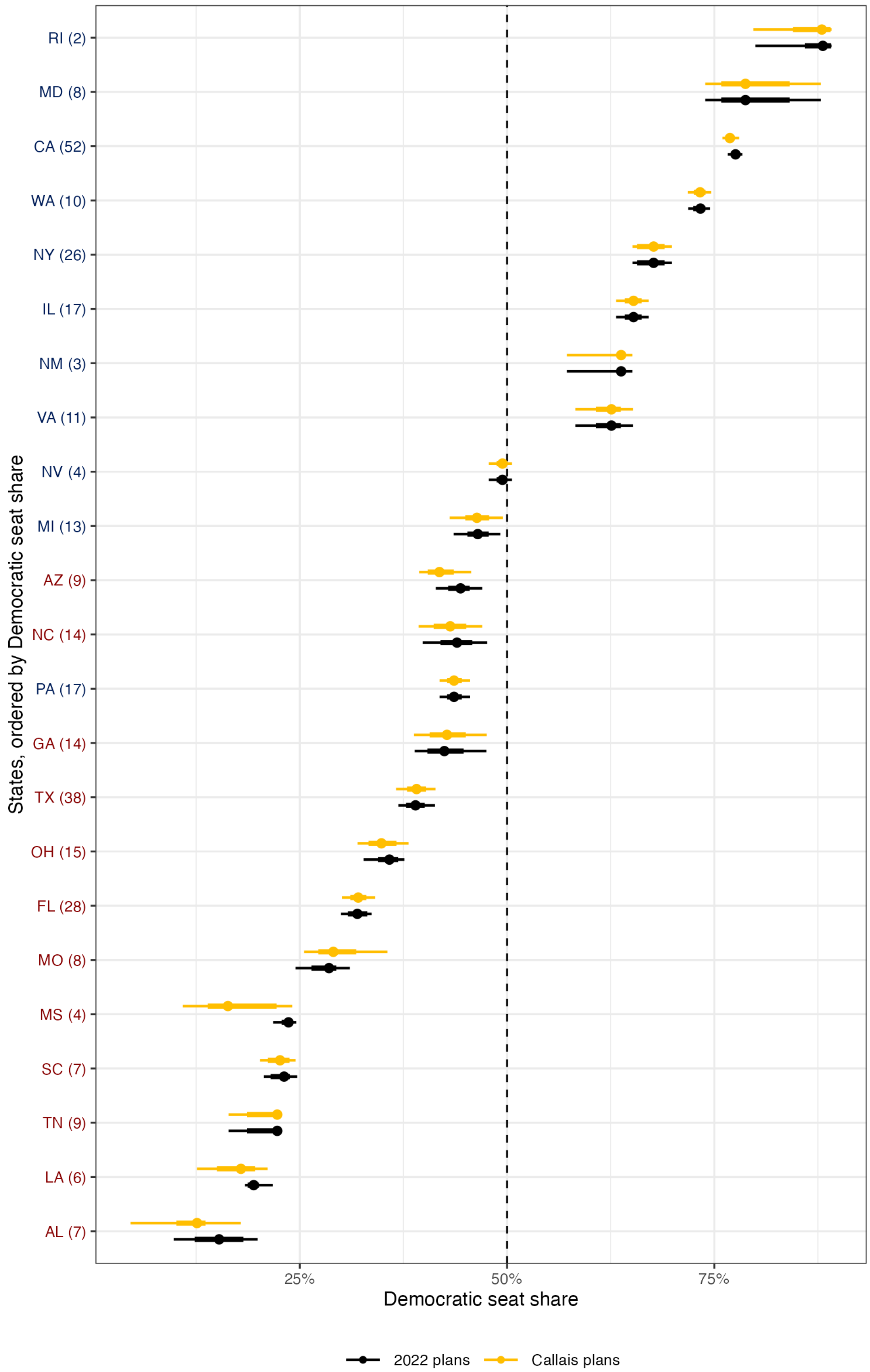

Figure A1: Democratic seat shares under VRA-aware and race-blind simulations. Points show the median Democratic seat share, and intervals show simulation ranges. Black estimates show VRA-aware simulations, and yellow estimates show race-blind simulations. States are ordered by Democratic seat share under the VRA-aware simulations.

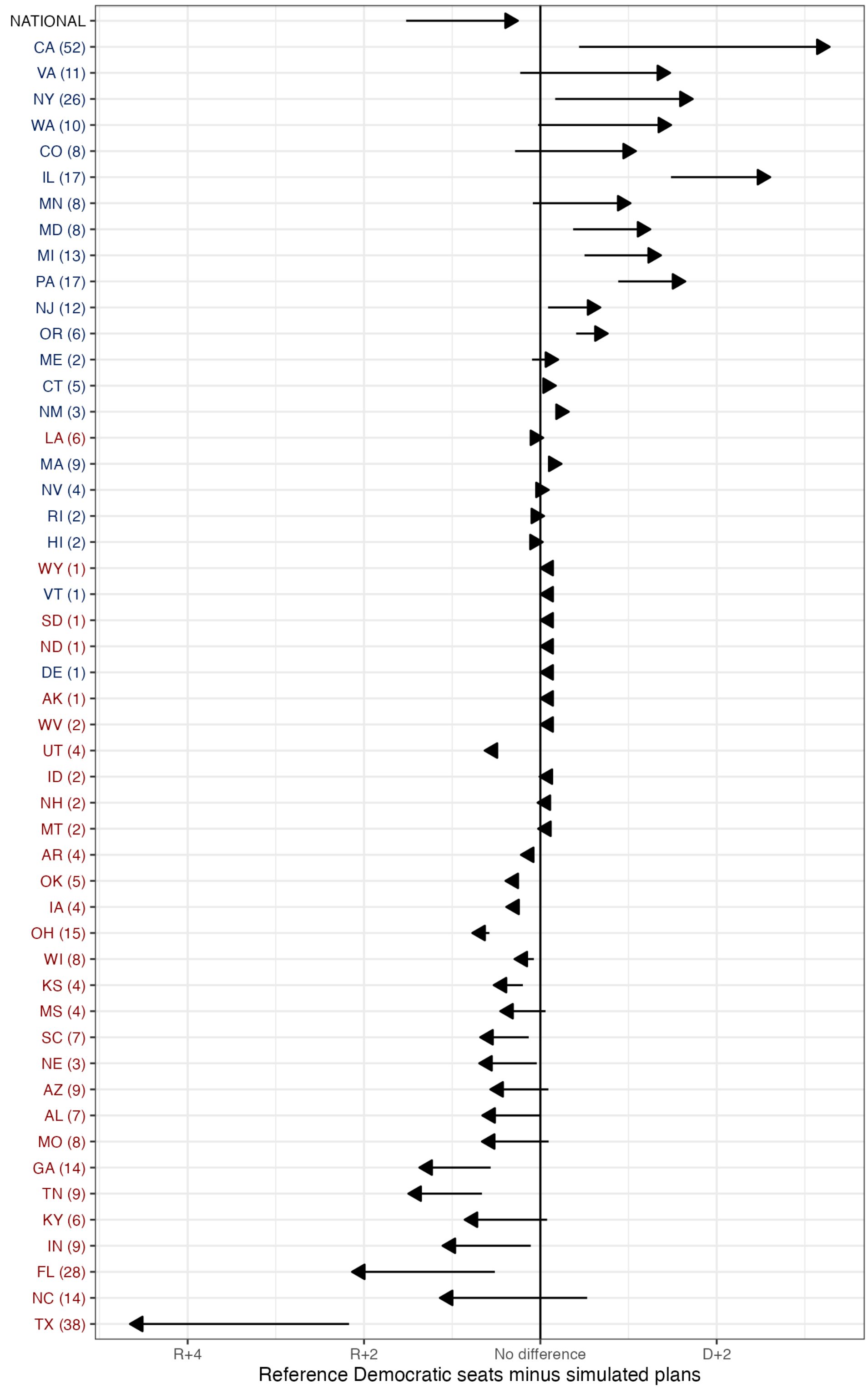

Figure A2: Change in partisan advantage from enacted plans to optimized gerrymanders. Arrows start at the partisan advantage of the enacted 2022 plan and end at the partisan advantage of the optimized gerrymander. Positive values indicate a Democratic advantage relative to race-blind simulations, while negative values indicate a Republican advantage. The national estimate aggregates median differences across states.

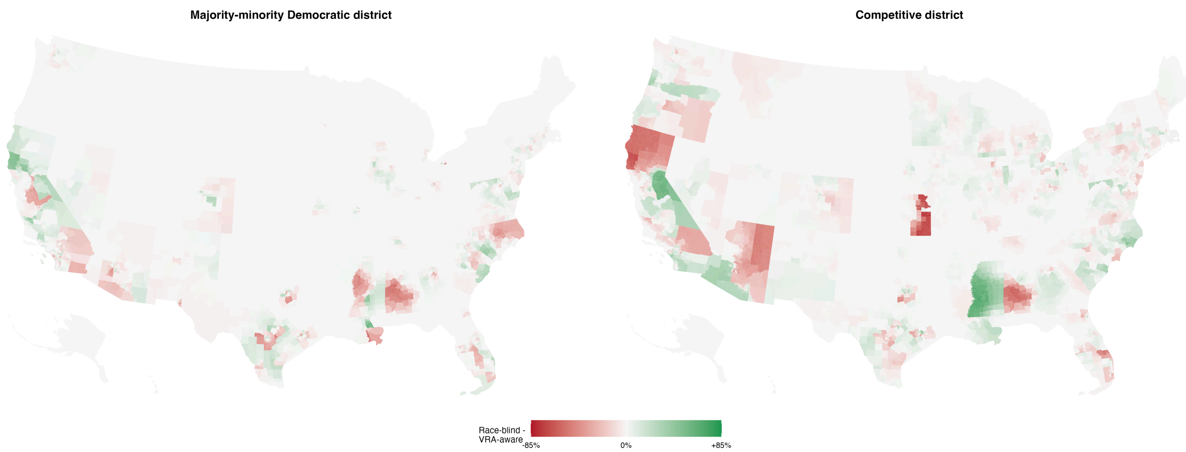

Figure A3: Changes in minority and competitive district occurrence under race-blind simulations. Maps show the difference between race-blind and VRA-aware simulations in the share of plans placing each precinct in a majority-minority Democratic district (left; minority VAP above 35% and Democratic vote share above 50%) or a competitive district (right; 45–55% Democratic vote share). Green areas fall in such districts more often once racial constraints are removed, and red areas less often.

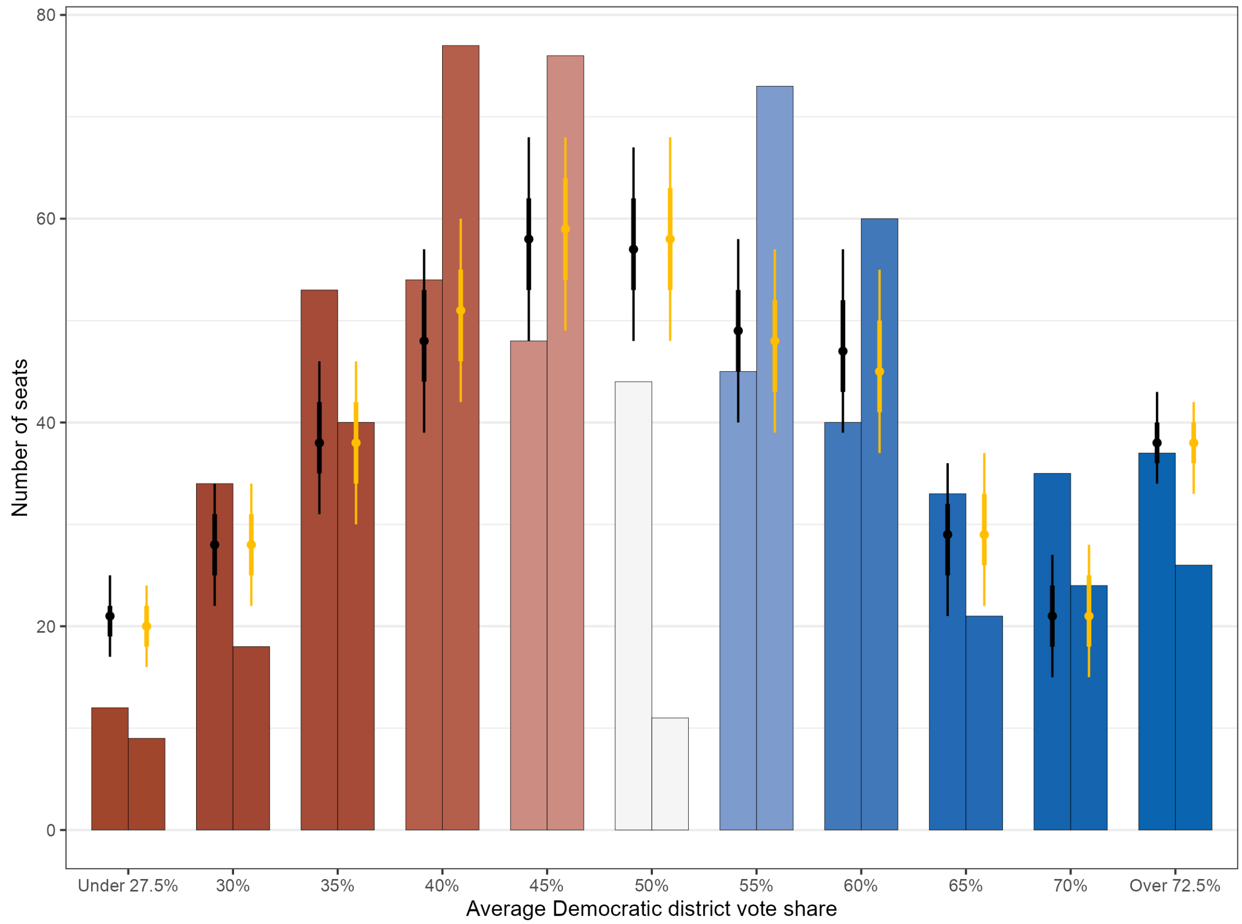

Figure A4: Weakening the VRA would reduce electoral competition. Bars show the number of seats in each average Democratic vote-share bin under enacted plans and optimized partisan gerrymanders. Point estimates with simulation intervals show VRA-aware simulations in black and race-blind simulations in yellow. Districts near 50% are the most competitive.

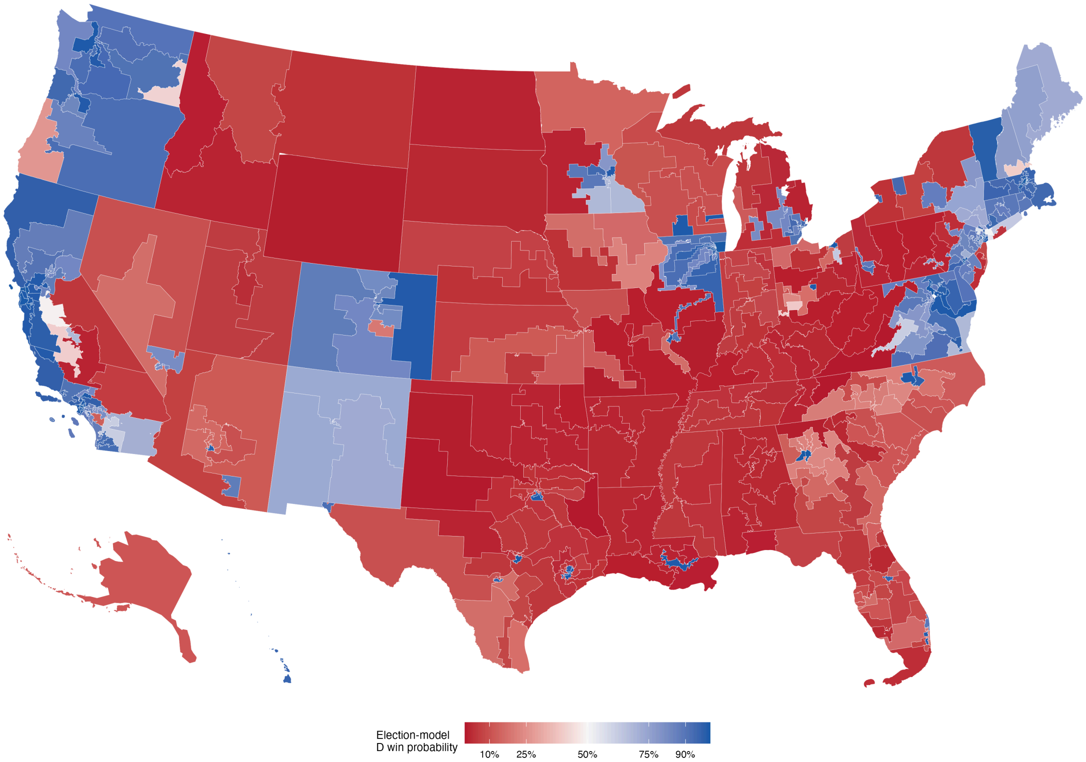

Figure A5: Optimized congressional districts in the all-out gerrymandering scenario. Districts are colored by the election-model Democratic win probability under the full 2028 opportunity-set optimized plans. Blue districts favor Democrats, red districts favor Republicans, and lighter shades indicate more competitive districts.

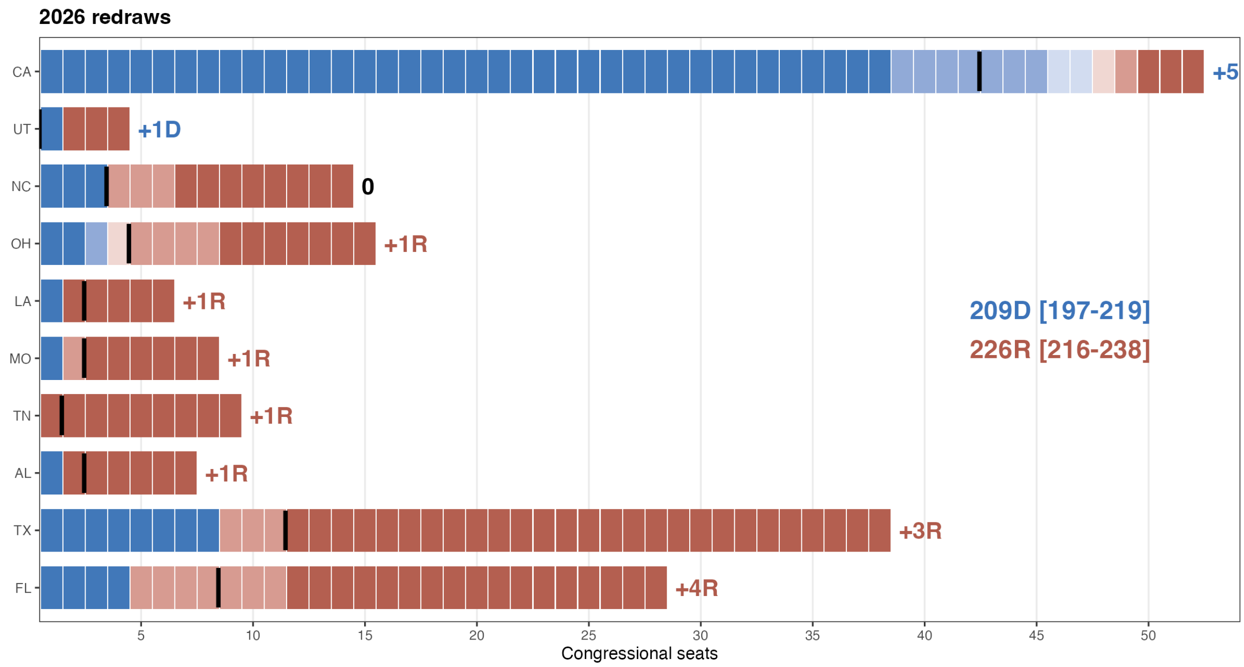

Figure A6: District-level consequences of enacted 2026 plans. Each row shows the enacted 2026 state plan by modeled district win probability. Blue segments indicate Democratic districts and red segments indicate Republican districts, with darker colors denoting safer seats. The vertical mark shows the 2024 expected change point between partisan control.

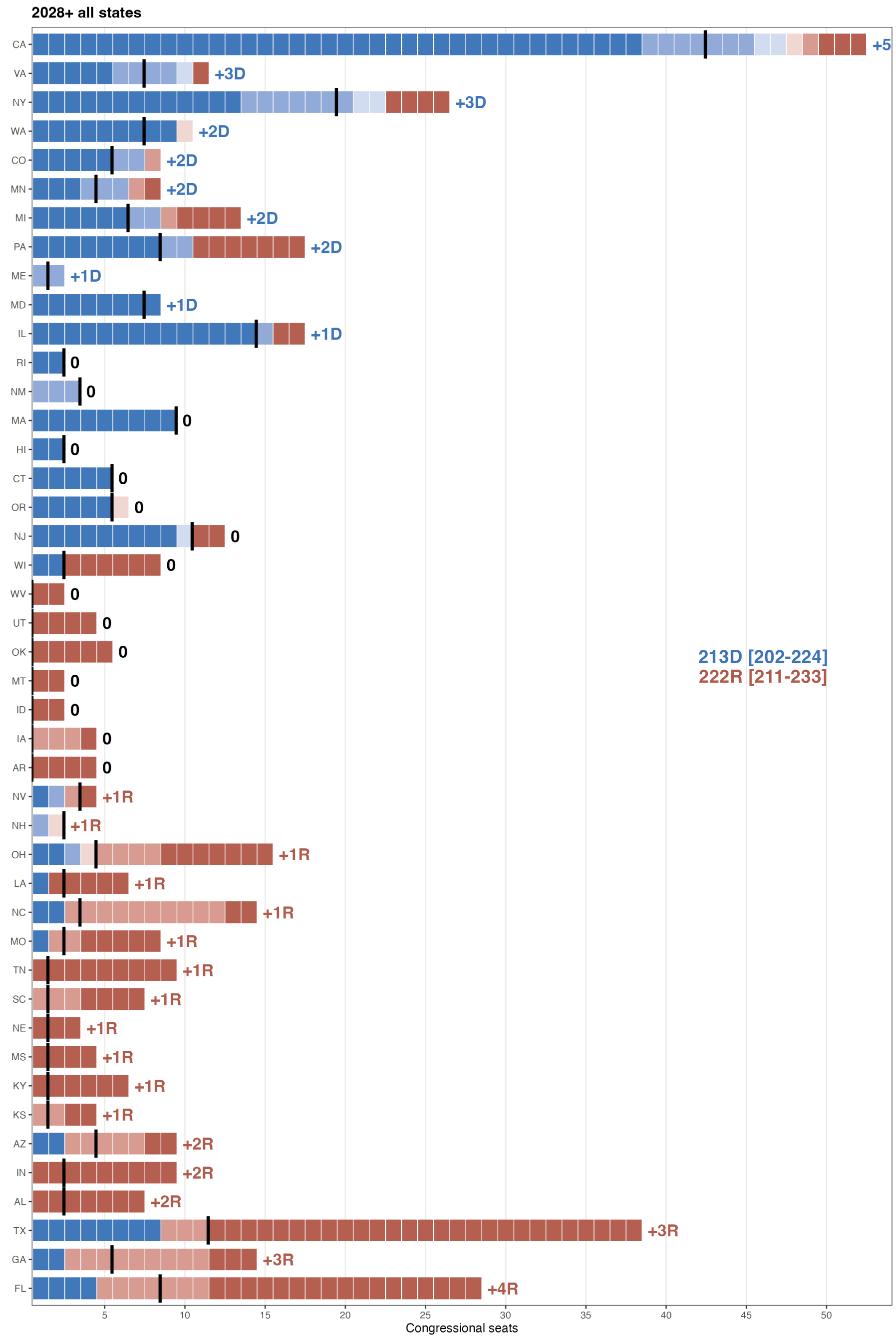

Figure A7: District-level consequences of optimized gerrymanders in all states. Each row shows an optimized state plan by modeled district win probability. Blue segments indicate Democratic districts and red segments indicate Republican districts, with darker colors denoting safer seats. The vertical mark shows the 2024 expected change point between partisan control.

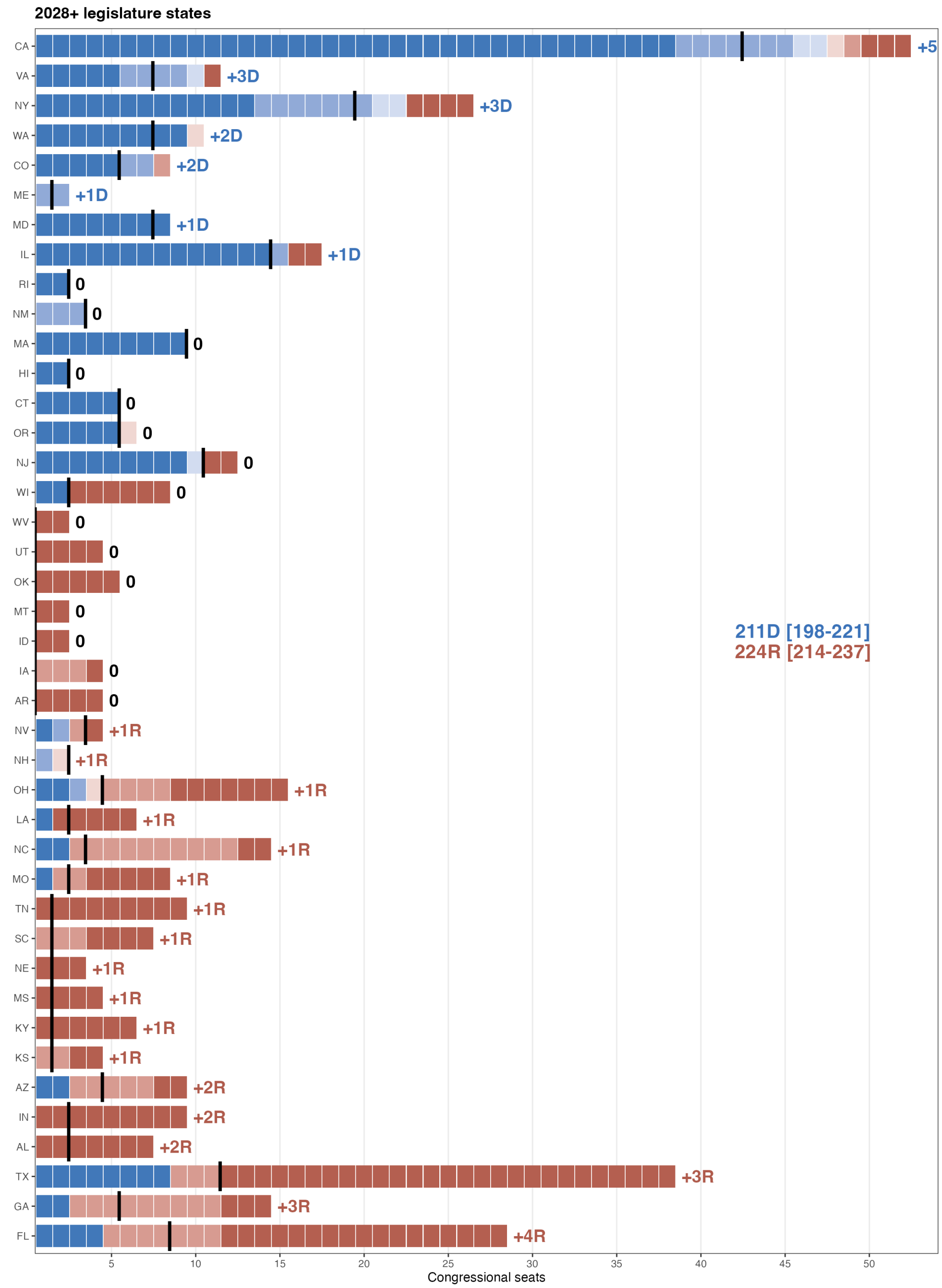

Figure A8: District-level consequences when only states with full legislative control gerrymander. Each row shows an optimized state plan by modeled district win probability. Blue segments indicate Democratic districts and red segments indicate Republican districts, with darker colors denoting safer seats. The vertical mark shows the 2024 expected change point between partisan control.

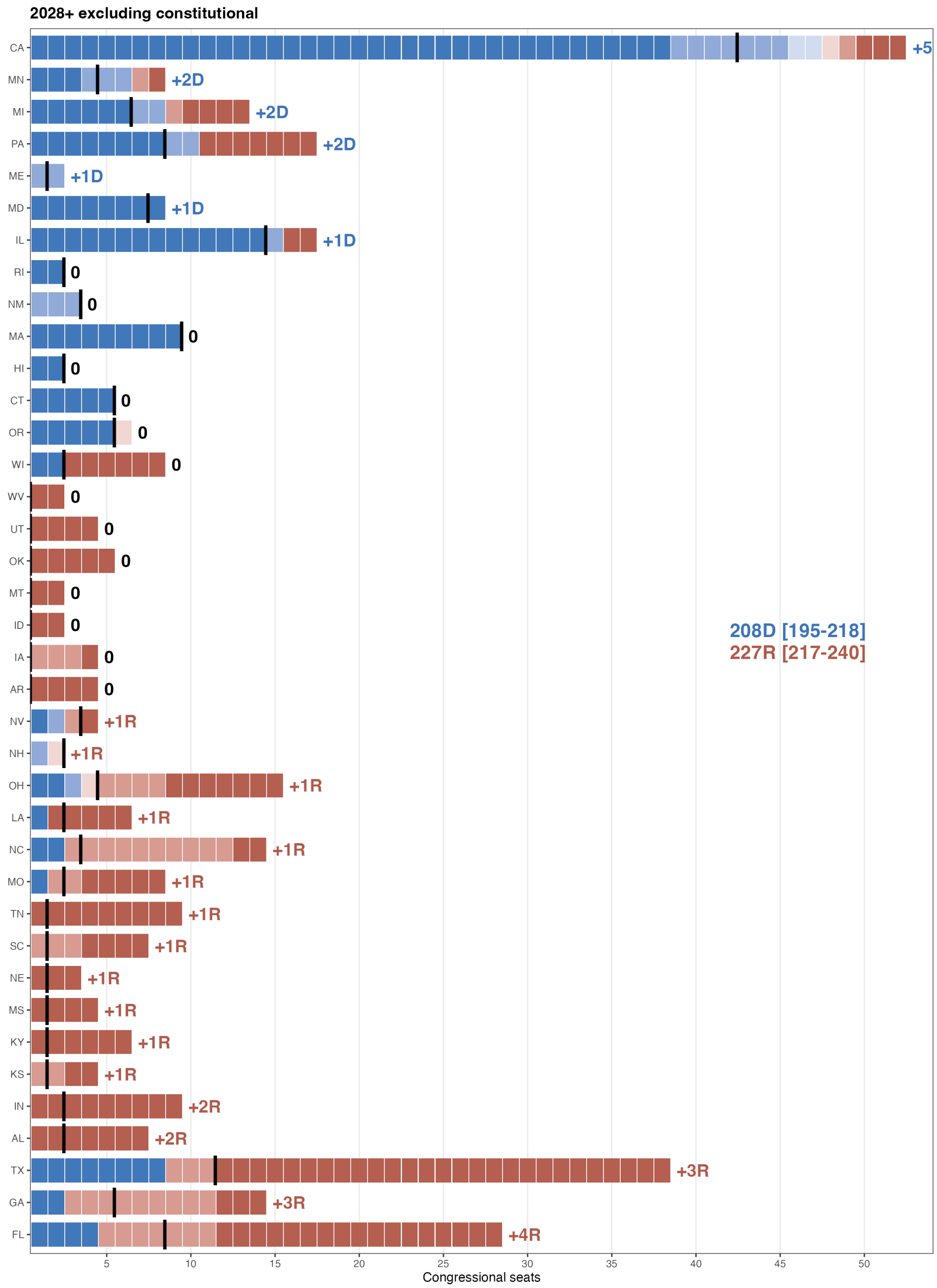

Figure A9: District-level consequences after excluding states with large institutional barriers. Each row shows an optimized state plan by modeled district win probability. Blue segments indicate Democratic districts and red segments indicate Republican districts, with darker colors denoting safer seats. The vertical mark shows the 2024 expected change point between partisan control.

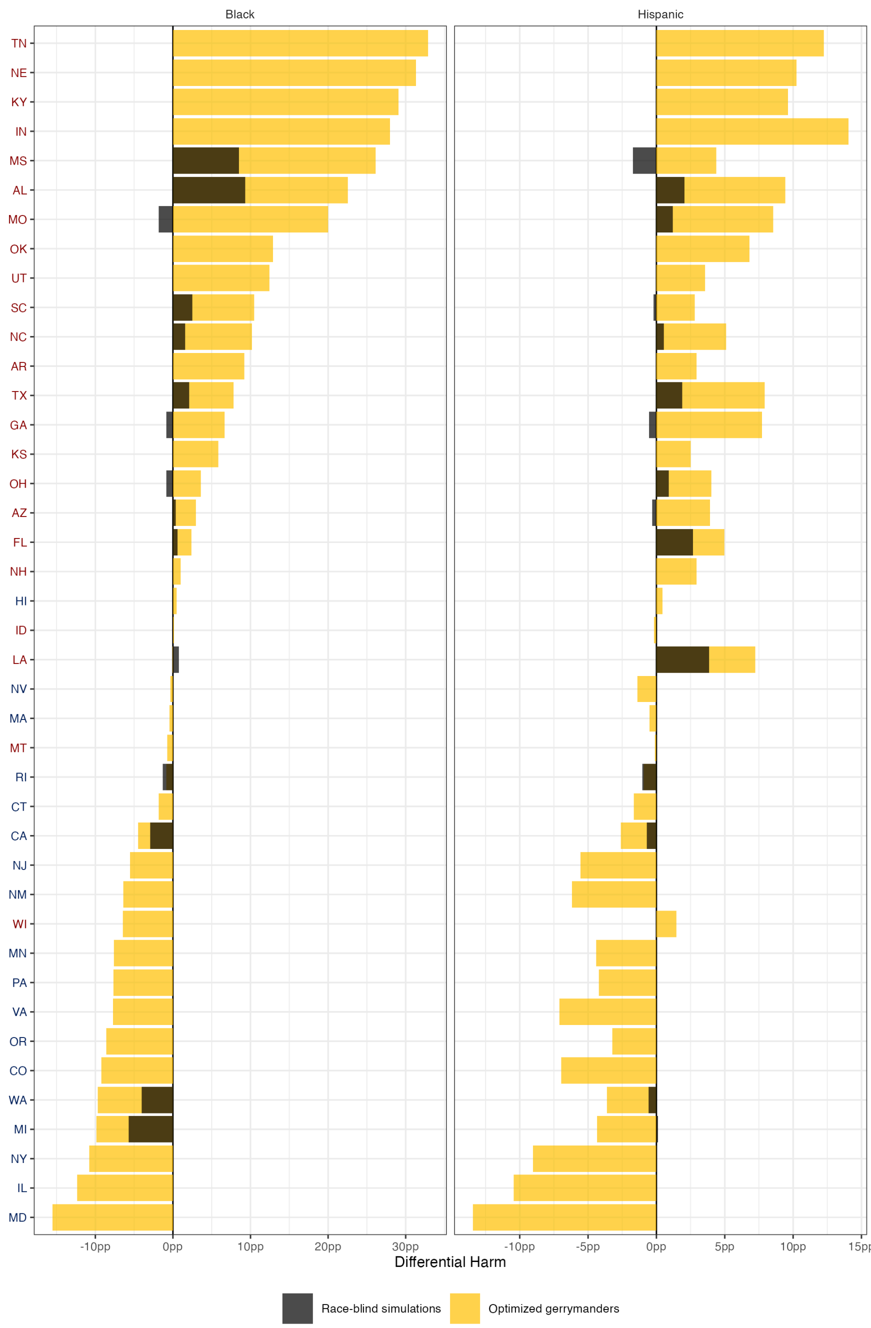

Figure A10: Differential harm by race across states. Bars show the difference between the harm rate for Black or Hispanic voters and the harm rate for White voters in each state. Black bars show differential harm under race-blind simulations, and yellow bars show differential harm under optimized gerrymanders. Positive values indicate that Black or Hispanic voters are harmed at higher rates than White voters. Negative values indicate lower rates of harm than White voters.