


# Principles and Partisanship\*

## Explicit Rules Constrain Courts and Lawmakers

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### Abstract

Policymakers in America often hold power over democratic institutions, especially electoral institutions. Their decisions can place principled decision-making at odds with partisan goals, especially in polarized times. How do policymakers balance these competing interests? I argue that policymakers are more likely to side against partisan interests when the law is more explicit. I apply this to partisan gerrymandering in the United States, where map drawers can manipulate district boundaries to favor one party. This provides a hard test, where partisan interests are directly at odds with democratic principles and the stakes of any decision are high. Using new data on the 2020 redistricting cycle combined with redistricting simulations, I find that map drawers typically follow rules that protect partisan fairness. Further, if a partisan gerrymandering case is brought against a redistricting plan, courts are more likely to rule against a plan when there is an explicit law against partisan gerrymandering. When courts intervene, they consistently decrease the partisan bias of the plan. I then demonstrate that compliance with other, nonpartisan redistricting rules is highest when it is easiest to measure violations. This contributes optimistic evidence that rules effectively bind partisans.

**Keywords:** democracy • redistricting • courts • partisan gerrymandering • legitimacy

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## 1. Introduction

American democracy rests on a delicate balance of power between branches of government (Madison 1788). Much of this balance is driven by norms and expectations for how institutional actors *should* behave. However, in times of heightened polarization, these norms can break down (Kingzette et al. 2021; McCoy, Rahman, and Somer 2018). Significant debate has been raised about the extent to which the US, and other democracies, are in a period of democratic backsliding and decline (Levitsky and Ziblatt 2019; Levitsky and Ziblatt 2023; Grumbach 2023; Little and Meng 2023). For American democracy to be effective, the institution must be responsive to its constituents (Mayhew 1974). Yet, worries emerge that Congress may respond only to a subset of their constituents (Gilens and Page 2014; Hacker 2010). Similarly, courts can make decisions primarily based on their ideological goals and backgrounds (Segal and Spaeth 2002; Harris and Sen 2019). In such polarized times, how do partisan actors balance their interests with the principles of democracy?

Such concerns have been particularly salient in the context of legislative redistricting. Redistricting is the process of drawing the boundaries of electoral districts which are used to elect representatives to a legislative body, including the US House, most state legislatures, and many local governments. Manipulations to this process, known as *gerrymandering*, are frequent and can diminish the ability of voters to hold their representatives accountable (Kenny, McCartan, Simko, et al. 2023; Chen and Rodden 2015).

I argue that partisan actors will act in a principled manner when the rules of the game are explicit. Specifically, when norms are codified into rules, then actors are more likely to follow them. When rules are explicit, it is easier to know when they are broken and easier to hold actors accountable. Further, when rules are broken, then courts have a clear standard to evaluate the conduct against. Thus, courts should be more likely to take action in these cases.

To test this argument, I use data from the redistricting process in the United States. Redistricting is the process of drawing the boundaries of electoral districts. This process defines the representational link between voters and their representatives. Frequently, the people who draw these districts attempt to draw them in a way that benefits their party. Yet, partisan gerrymandering holds a relatively unique place in judicial proceedings, where only *state* courts can intervene in such cases. This provides a case where there is variation across states in the rules that control redistricting and, at least for partisan cases, distinct court systems that can enforce these rules. As such, while partisan gerrymandering may negatively impact representation in the US, it provides a strong case to study how political actors balance their interests with the principles of democracy, as discussed in Section 2.

I first look to all state legislative and congressional redistricting processes in the US from the 2020 cycle. I compare states with explicit rules against partisan gerrymandering to those without

such rules. Using a common measure of partisan fairness, the efficiency gap, I find that states with explicit partisan fairness rules have plans with lower measures of bias. Further, when cases are brought to allege that a plan is a partisan gerrymander, I find that courts are more likely to rule against the plan when there is an explicit rule against partisan gerrymandering. This is consistent with the idea that courts are more likely to rule against partisan interests when the law is more explicit.

Prior work has looked at how courts balance their interests with the law. Concerns about actors in this context are frequently framed in terms of the *legitimacy* of the court and its decisions. When the Supreme Court makes unpopular decisions, support for the institution decreases (Gibson and Nelson 2014). A similar public-opinion mechanism is proposed in Clark (2009), where public opinions on the court are expressed through congressional elections. Of course, this is not without limits, as the public may already be evaluating court legitimacy through their own partisan lens (Bartels and Johnston 2013). Recent work, however, has also pointed to the value of assessing if decisions are made based on principled legal interpretations, rather than looking only to public support (Fuentes-Rohwer 2018). Such an approach is consistent with work that indicates that views of the legitimacy of courts come from a more complex set of individually-held values, rather than ideology (Gibson 2007).

A key question in this literature is how to evaluate whether a decision is principled. One approach is to assess if the decision is consistent with public opinion, as in Clark (2009). This is a potentially useful approach, but responsiveness to public opinion is not necessarily a good measure of if a decision is principled. Other work, evaluates the decision on the basis of existing precedent and if the decision is consistent with that precedent. That type of analysis lacks a clear standard, as many landmark decisions that are regarded as *good* decisions, like *Brown v. Board of Education* (1954), were not consistent with existing precedent, but would be considered principled decisions.

I argue that a better approach is to evaluate if the decision is consistent with underlying democratic principles. By applying this to partisan gerrymandering, we can easily evaluate if there is a rule against partisan gerrymandering in place. Further, we can evaluate if a plan is itself a partisan gerrymander. This allows us to side-step the issue of evaluating if a decision is consistent with existing precedent or with public opinion, as we can evaluate if the decision is consistent with the rules that are in place.

Finally, I test how compliance with rules varies based on the clarity of the rules. Using a new collection of redistricting rules, I measure how states comply with these rules by comparing the enacted plans to a set of simulated plans that follow the rules (McCartan et al. 2022; Kenny et al. 2024). Notably, these rules differ in clarity, where some rules, like checking if a county is split, have a clear standard, while others, such as the compactness of a district, lack such a standard. I find

that the mapdrawing process results in more compliant plans when the rules are clear compared to when rules lack an inherent standard.

Limited work has been done to evaluate compliance with rules in the redistricting process. Using data from the 1990 state legislative redistricting cycle, [Forgette, Garner, and Winkle \(2009\)](#) demonstrates that states with politically neutral redistricting criteria tend to produce fewer uncontested districts. Further, using an early redistricting simulation algorithm, [Altman \(1998\)](#) demonstrates that the presence of a compactness rule is unlikely to constrain map drawers. By using a new collection of redistricting rules and modern simulation techniques, I provide a more comprehensive evaluation of how compliance with rules varies based on the clarity of the rules.

The remainder of this paper is organized as follows. In [Section 2](#), I introduce the process of redistricting and explain why partisan gerrymandering offers a good case to study the balance between partisanship and principles. In [Section 3](#), I then demonstrate how legislatures and mapdrawers largely follow rules when they exist. In [Section 4](#), I show that courts intervene to reduce the bias in redistricting plans. I then expand from partisan gerrymandering to the broader set of rules that govern redistricting to show how the explicitness of the rules can affect the behavior of mapdrawers. Finally, I conclude in [Section 6](#) with a discussion of the implications, especially as applied to designing reforms to democratic institutions.

## 2. Application to Partisan Gerrymandering

### 2.1. Redistricting in the United States

Redistricting occurs each decade following the decennial census to ensure that districts are equally populated. Much of the redistricting process is uncontroversial, such as ensuring that districts are contiguous and that they have roughly equal populations. However, partisan considerations are highly salient and frequently controversial. When partisan considerations override other concerns, map drawers can create districts that are favorable to their preferred party or candidates for office, in a process known as *partisan gerrymandering*. In many states, the legislature is in charge of drawing its own districts and the districts for other offices. This heightens the risk of gerrymandering, as the legislators hold a conflict of interest, where they hold a direct stake in the outcome of the redistricting process.

Partisan gerrymandering is widespread in the United States ([Kenny, McCartan, Simko, et al. 2023](#)). As a result, many states have sought to reform the process by creating independent commissions and moving decisions away from election officials. Redistricting commissions are broadly associated with increased competition and decreased bias in redistricting plans ([Nelson 2023](#); [Best et al. 2021](#); [Carson, Crespin, and Williamson 2014](#); [Carson and Crespin 2004](#)). Recent work demonstrates that reform efforts that constrain political actors in this process *cause* more responsive outcomes ([McCartan et al. 2024](#)). These reforms are quite varied and only implemented in a

minority of states. When such reforms are instituted, they often make clear provisions about the priorities of mapdrawing bodies. This allows for variation across states in the explicitness of the rules governing redistricting, as discussed in [Section 3.1](#).

Further, the relatively unique legal status of partisan gerrymandering claims makes them a particularly good case for understanding the competing goals of court involvement. In *Rucho v. Common Cause* (2019), the Supreme Court ruled that partisan gerrymandering claims were political questions, and thus, nonjusticiable. This ruling ended the ability of federal courts to intervene in partisan gerrymandering cases. Of note, it did not deem partisan gerrymandering itself unconstitutional or constitutional, just that questions of partisan gerrymandering could not be heard by federal courts. Thus, *Rucho*'s ruling to not hear partisan gerrymandering cases does not give state courts clear guidance for how to interpret their own state's laws. Instead, *Rucho* leaves open the opportunity for legislatures, including Congress, to pass partisan gerrymandering statutes that can be interpreted by state courts.

This gives state courts substantial leeway to apply their own state's laws and precedents. Most states have some form of language that could be interpreted to prohibit partisan gerrymandering ([Wang, Ober Jr, and Williams 2019](#)). Of course, federal courts can still intervene based on other issues, such as racial gerrymandering or the Voting Rights Act, but they will not intervene on *purely* partisan grounds. This leaves state courts as the final arbiter of partisan gerrymandering cases. Even if a state's highest court goes "off the rails", there is no higher court to appeal to.

Thus, partisan gerrymandering serves as a great opportunity for understanding the competing goals of partisanship and principles within the judiciary. In most other cases, a court's decision is filtered through many other concerns, such as the possibility of having a decision appealed or the risk of making a decision outside federal guidelines. Here, the decision is final, so a state's highest court has the ability to rule on a partisan basis without risk of appeal. Further, these courts can interpret the law without the weight of federal case law. Or, these courts could follow in the footsteps of federal courts and rule these cases nonjusticiable. Thus, when these courts make decisions based on principle rather than partisanship, it is a choice to do so, not a necessity. Functionally, this makes partisan gerrymandering a harder test for the theory.

Of course, this does not mean the motives behind partisan gerrymandering decisions are necessarily uncomplicated. State courts have many different appointment and election processes to fill seats. It is not unreasonable to think that judges may censor themselves when considering their future on the bench. Additionally, federal courts can still intervene on race-based gerrymandering or Voting Rights Act grounds. If a decision is particularly egregious, in cases where a map diminishes the voting power of a minority group, a federal court may still intervene. However, the recent ruling in *NAACP of South Carolina v. Alexander* (2024) diminishes this possibility by effec-

tively holding that partisan gerrymandering may be used as a defense to racial gerrymandering claims.

Beyond the substantive importance and unique legal situation of redistricting, who a redistricting plan favors is generally clear. Mapdrawers, when they consider party, often have detailed partisan data down to the precinct level and can draw plans which favor a party. Even when a map-drawing body does not consider party, news organizations and advocacy groups frequently analyze the partisan effects of redistricting plans. For example, [FiveThirtyEight](#) and the [Cook Political Report](#) analyze the partisan effects of redistricting plans publicly. For non-technical participants and observers, many tools are available that can score a plan based on its partisan effects, such as [Dave's Redistricting App](#) or [PlanScore](#).

Moreover, if a plan is challenged in court, then the partisan effects of the plan are always carefully detailed in expert reports. These reports are adversarial, where each side presents their own expert evidence. While experts may disagree on the *exact* magnitude of the partisan effects or the best way to measure them, the direction of the effect is generally clear.

Finally, ways to measure the partisan effects of redistricting plans are well-studied. Many measures have been proposed on the basis of partisan symmetry, based on the symmetry of a seats-votes curve ([King and Browning 1987](#); [Katz, King, and Rosenblatt 2020](#)). These measures are based on the idea that a fair redistricting plan should treat both parties symmetrically. Other measures, such as the efficiency gap ([Stephanopoulos and McGhee 2015](#)), provide a way to measure the partisan effects of a plan on voters. Due to recent methodological advances, we can also use of large sets of alternative redistricting plans to account for the underlying political geography.

Such measurement tools allow for a relatively high degree of confidence to assert whether or not a plan is biased. This is useful, as we can ascertain what a “principled” decision would be, where striking down a biased plan or upholding a fair plan is the legally “correct” decision.

### **3. Do rules bind policymakers?**

I first evaluate how policymakers act when rules are available, here focusing on the people who produce a redistricting plan. Specifically, I ask *Does the presence of partisan fairness rules decrease the bias in enacted plans?* If rules can effectively standardize norms, then such rules should reduce bias in redistricting plans.

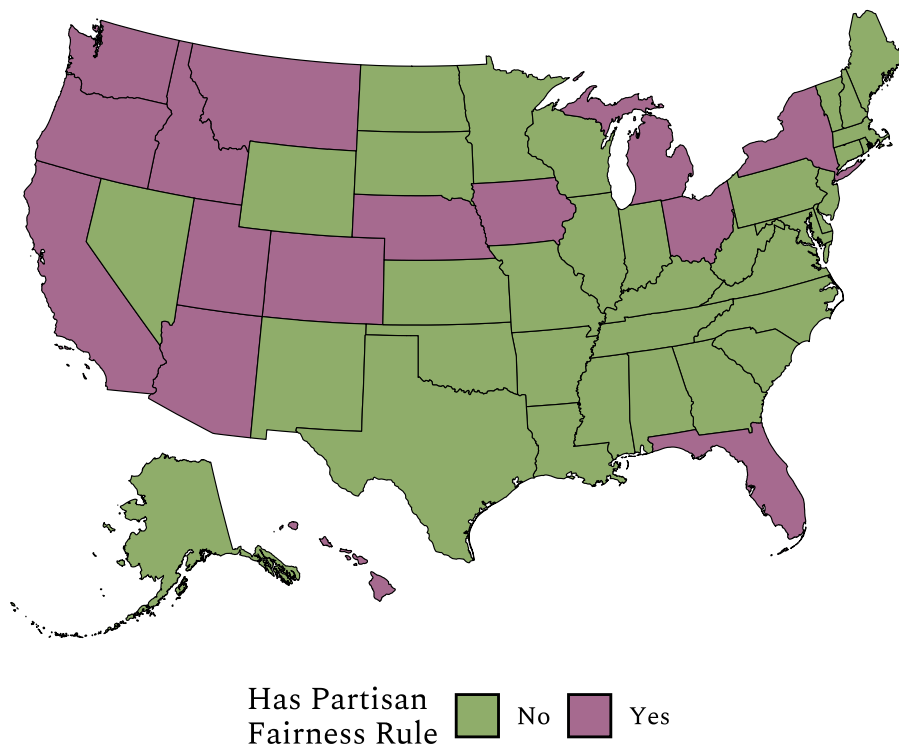
To measure this, I study the *initial* enacted plans from each state's mapdrawing process following the 2020 Census. That is, I collect the first redistricting plan for each state for their state legislature and congressional plans, before any court intervention if such intervention occurred. I combine these with data on the presence of partisan fairness rules, as discussed in [Section 3.1](#). As detailed below, I find that rules tend to reduce the partisan bias of redistricting plans, by about 4.5pp, though this depends on the measurement approach.

### 3.1. Partisan Fairness Rules in the United States

The presence of redistricting rules varies greatly across states. For example, Texas has no rules governing congressional redistricting. In contrast, Michigan not only restricts advantaging a party, but also indicates where in the hierarchy of redistricting priorities this rule falls. Here, it is the fourth priority, after (1) adhering to federal law, (2) drawing contiguous districts, and (3) respecting communities of interest within the state.

Despite the variation in presence and priority across states, if a rule exists, it is largely clear what behavior the rule prohibits or favors. For example, Article IV of Michigan's constitution writes that "Districts shall not provide a disproportionate advantage to any political party." Similar language is present in many other states' constitutions or statutes. One possible reason for this clarity is that many redistricting reforms are passed through ballot initiatives, which include ordinary citizens in the process. Of course, that does not mean that *applying* the rule is trivial, as there may be necessary determinations for factors such as what constitutes *intent* to break a rule.

To this end, I define partisan fairness rules to be any rule that explicitly addresses consideration of the limitations of uses of partisan data at any level of geography. This includes both rules that *prohibit* considering partisan data of any kind, such as past election results or voter registration. I similarly include rules that *require* considering partisan data to ensure that districts are competitive or that plans are fair to both parties. [Figure 1](#) shows the presence of partisan fairness rules across the United States in 2020.



**Figure 1 :** Partisan fairness rules for *congressional* redistricting by state in the 2020 cycle.

### 3.2. Rules are associated with lower bias

To evaluate the role of rules, I next collect the *first* enacted redistricting plans for each state and chamber for the 2020 cycle. [Warshaw, McGhee, and Migurski \(2022\)](#) provides the enacted plan for each state and chamber at the time of the 2022 election. I supplement this data to include plans that were enacted prior but changed during litigation as follows. First, I use data from All About Redistricting (AAR) which lists all redistricting cases to identify which states had plans that were challenged ([Spencer 2024](#)). If a redistricting plan was changed by partisan gerrymandering litigation, I collect any prior enacted plans. For many of these cases, AAR collects the district shapefiles for the challenged redistricting plans. For any case where AAR did not have the data, I collect the remaining district shapefiles directly from the state.

To use these plans, we then need to summarize them to a quantitative score for each plan. The replication data from [Warshaw, McGhee, and Migurski \(2022\)](#) scores each plan using PlanScore, an online redistricting service ([Greenwood et al. 2024](#)). I follow suit, scoring each plan changed by litigation using the `planscorer` R package to upload them to the PlanScore API ([Kenny, Migurski, and McCartan 2024](#)). PlanScore provides a series of partisan data summaries for each district or plan using an election model based on historical elections.

For every plan, I use the deviation from partisan symmetry, often called the *partisan bias* ([King and Browning 1987](#); [Katz, King, and Rosenblatt 2020](#)). The partisan bias of a plan is measured as



the difference in seat share from 50% when the elections are shifted to a tie. Intuitively, if a party receives more seats than half in a tied election, the plan favors them.

With data on rules and redistricting plans in hand, we can then assess the difference in bias in states with such a rule and those without. A Welch's t-test shows that states with partisan fairness rules have 4.5pp lower bias ( $p < 0.001$ ) in their redistricting plans than those without.

Yet, such an analysis is potentially confounded by the effect of the underlying political geography. Partisans frequently sort asymmetrically down to the individual level, where Democrats live near high concentrations of other Democrats (Brown and Enos 2021). This asymmetry aggregates, leading to biases against Democrats (Chen and Rodden 2013; Rodden 2019). However, the underlying sorting of partisans does not always advantage Republicans. In some cases, including Massachusetts, the bias can be so extreme as to make it *impossible* to draw a Republican condition without massive changes in vote choice (Duchin et al. 2019).

To account for the impact of political geography, many have turned to using redistricting sampling algorithms. Redistricting sampling approaches produce large numbers, typically thousands or millions, of alternative plans drawn under specified conditions. Methodological advances of the last decade included new algorithms that can sample redistricting plans from defined target distributions (Fifield, Higgins, et al. 2020; Autry et al. 2020; McCartan and Imai 2023). Unlike heuristic methods, these algorithms allow us to make statistical claims about the properties of the maps they produce and verify that the algorithms work well in practice (Fifield, Imai, et al. 2020).

These analyses are frequently used to test if a redistricting plan adopted by a state is an outlier relative to the simulations. We can then compare the enacted plan to the distribution of simulated plans to see if the enacted plan is an outlier. The logic is that enacted plans should be similar to the simulated plans if the state's criteria were followed and there was no intent to do *something* else. This *something* else typically is in the form of partisan gerrymandering, protecting incumbents, or racially biased maps. New research further points to gerrymandering in order to keep wealthy firms within certain districts (Artes et al. 2022).

I combine these classifications of partisan fairness rules with samples of alternative redistricting plans. The plans for the 2020 congressional cycle come from (McCartan et al. 2022). All plans are drawn using the Sequential Monte Carlo (SMC) algorithm of McCartan and Imai (2023), implemented in the `redist` package (Kenny et al. 2022). These plans are designed to be representative of plans that could be drawn by a state under their set of criteria. For every state, these simulations use the criteria formally adopted by a state's map drawers, including those that are not binding law, where possible. McCartan et al. (2022) provides 5,000 alternative plans for each state with at least one district. Due to the computational difficulties of simulating redistricting plans for states with large numbers of districts, here I focus only on congressional districts.

Notably, to ensure VRA compliance, these plans are required to meet or beat the number of minority opportunity districts in the enacted plan. [McCartan et al. \(2022\)](#) follows a similar process to [Chen and Stephanopoulos \(2020\)](#) to evaluate the number of minority opportunity districts in a given plan, where a district must (1) usually elect the minority group’s preferred candidate and (2) be likely to have the minority group as the majority of the winning coalition. This allows for the evaluation of the enacted minority opportunity districts against the simulated plans. Further, given that we are concerned with partisan gerrymandering, such an interpretation of the VRA helps us avoid differences in the simulated baseline.

[McCartan et al. \(2022\)](#) includes the enacted plan for the 2022 election within the data. I augment this data with the aforementioned collection of redistricting plans changed during litigation. To ensure comparability with the simulated plans, I convert the shapefiles to the appropriate voting district or census tract level using the [McCartan et al. \(2024\)](#) and [Kenny \(2023\)](#) software packages.<sup>1</sup>

With these plans, I then produce a summary of the partisan bias of the plan. Here, I produce an estimate of the partisan bias for each enacted and sampled redistricting plan. The difference in seats between the enacted plan and the simulated distribution is called the *partisan manipulation* of the plan ([Kenny, McCartan, Simko, et al. 2023](#)).

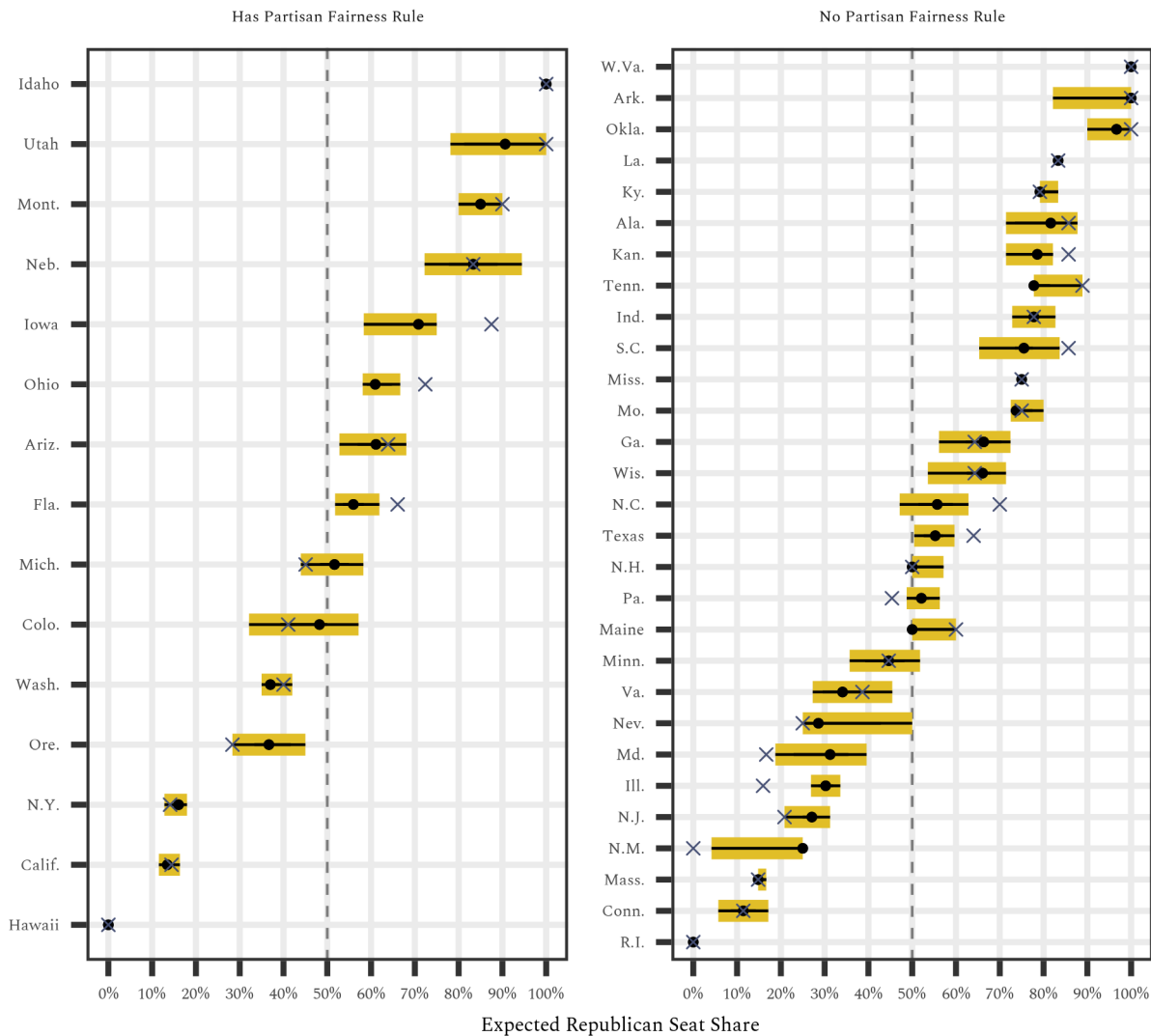
To produce this, I score each district’s partisanship using the *redistmetrics* package ([Kenny, McCartan, Fifield, et al. 2023](#)). Unlike the approach in [Section 3.2](#), I do not use the PlanScore API to score the plans. Instead, I follow an approach commonly used in redistricting litigation.<sup>2</sup> For each state, I take the full set of past statewide elections from VEST for the 2016, 2018, and 2020 elections and aggregate these results to the district level ([Voting and Election Science Team 2018; 2019; 2020](#)). I then score each election-plan in terms of the number of seats won by Democrats. To produce one estimate of Democratic seats for each election-plan, I then take the average across all elections.

[Figure 2](#) shows the expected Republican share for the initial plan proposed by each state. The left panel shows states which have a partisan fairness rule and the right shows those without. The expected seats for the enacted plan is marked by an “x” and the middle 95% range of the simulated plans is shown by the yellow bar. Descriptively, 8 of 29 states without a partisan fairness rule have an enacted plan that is an outlier relative to the simulations. 3 of 15 states with a partisan fairness rule have an enacted plan that is an outlier relative to the simulations.

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<sup>1</sup>This rebuilds the district shapes out of smaller shapes where election data is available. As shapes are not necessarily constant over time, this introduces a small amount of estimation into the process. An error from this process is necessarily small, as any low-level geographic shapes that sit entirely within a district can be matched exactly and only boundary voting districts or tracts need to be estimated.

<sup>2</sup>A justification for this type of approach can be seen in the Expert Report of Kosuke Imai, PhD, in *League of Women Voters of Ohio v. Ohio Redistricting Commission*, available at [https://www.acluohio.org/sites/default/files/leagueofwomensvotersofohioetal-v-ohioredistrictingcommissionetal\\_affidavitofkosukeimai\\_2022-0125.pdf](https://www.acluohio.org/sites/default/files/leagueofwomensvotersofohioetal-v-ohioredistrictingcommissionetal_affidavitofkosukeimai_2022-0125.pdf).



**Figure 2:** Partisan manipulation of congressional redistricting plans in the 2020 cycle. Each “x” shown is the first plan enacted by the state, before any partisan gerrymandering litigation. The yellow bar shows the middle 95% range of the simulated redistricting plans. States that do not have any variation in the share of Republican seats are shown as a dot without any yellow bar.

I summarize the partisan manipulation of the plans using a Bayesian bootstrap (Rubin 1981) to estimate the 95% credible interval of the difference in partisan manipulation. The mean partisan manipulation of the plans is 0.007 less, with a credible interval of 0.14 to 0.0003 of the seat share less than states with rules. Substantively, this is a very small difference after accounting for the geography.

## 4. How does court intervention in redistricting cases depend on rules?

Next, I evaluate how the presence of rules impacts the decision-making of courts in practice. Recent work demonstrates that the possibility of court intervention can reduce the leeway that lawmakers have in the first place (McCartan et al. 2024). This has the effect of reducing the bias in plans that are enacted, though this describes the effect of the full set of processes, bundling the actions of the initial mapdrawers and court intervention.

Here, I clarify three main components of court intervention. First, I assess when courts act to strike down a plan. Then, when a court does intervene and strike down a plan, I estimate how much intervention improves the plan. Third, I demonstrate that the presence of rules does not predict the filing of litigation.

To study this, I use the universe of partisan gerrymandering cases since *Rucho v. Common Cause* (2019). As discussed in Section 2, federal avenues to challenge partisan gerrymandering were closed by *Rucho*. So, many plaintiffs have brought cases in state courts, alleging violations of state provisions on fair elections. I use the data discussed above from All About Redistricting to identify all redistricting cases (Spencer 2024).

From their data, I classify all redistricting cases since *Rucho* by the type of claim being brought. I identify 20 cases in 14 states where at least one claim is about partisan gerrymandering. As it is possible to challenge multiple plans in a single case, I further identify the level of the challenge. There were challenges to 29 plans at the state-level level.

In cases where a claim was successfully challenged and thrown out, a new plan is required to be drawn. The drawing of a new plan does not guarantee that the new plan will effectively remedy the issues with the prior plan. Indeed, remedial plans in Ohio and Alaska were repeatedly challenged and thrown out, which brings the total number of plans challenged to 36.

With this data, below we look to the universe of cases decided after *Rucho*. To cover all levels of state redistricting plans, I supplement my collection of congressional rules with additional data from the National Conference of State Legislatures (National Conference of State Legislatures 2021). Each level of plan can have different rules within a state. That is, a state house plan may be drawn under different rules than a congressional plan. As such, I classify each level by the presence of rules in the state's redistricting requirements.

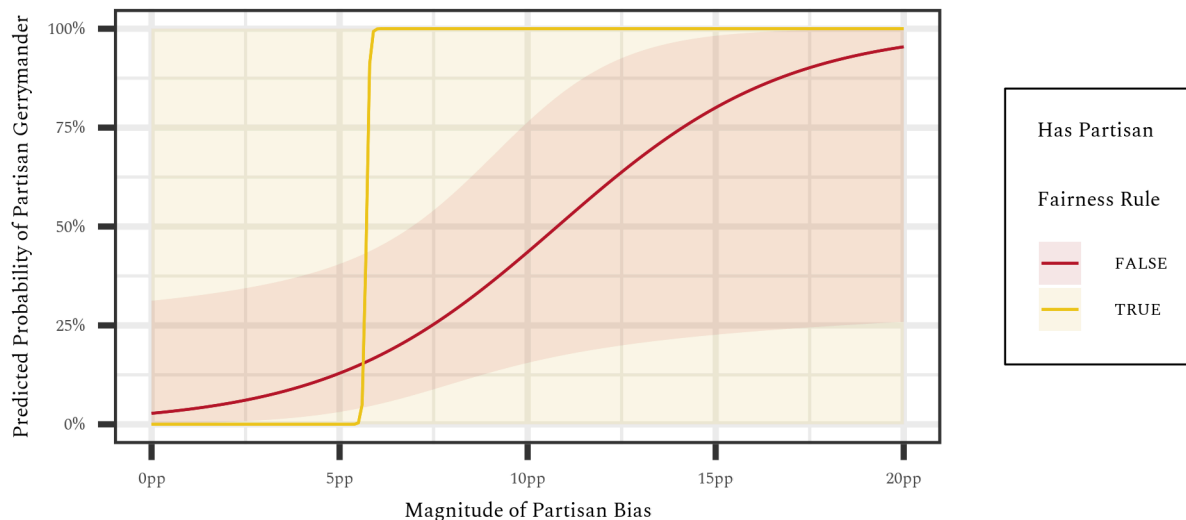
### 4.1. Courts are more likely to intervene in states with partisan fairness rules

First, I evaluate when courts intervene in redistricting cases. This is conditional on the filing of a case, as courts will only intervene if a case comes before them. If they intervene, this triggers the drawing of a new plan, often called a “remedial plan”, to replace the old one.

Among plans with similar levels of bias, we should expect that courts are more likely to intervene in states with partisan fairness rules. Rules provide a clear standard for courts to evaluate plans against and invite them to make such an evaluation. On the other hand, without partisan fairness rules in place, a court must adopt a potentially novel legal argument that allows them to evaluate the plan. Further, when there are no explicit rules, courts can exit the case without the need to address such statutes. For example, they can adopt a principle similar to the federal courts, where partisan gerrymandering is deemed a political question that cannot be resolved by the judiciary.

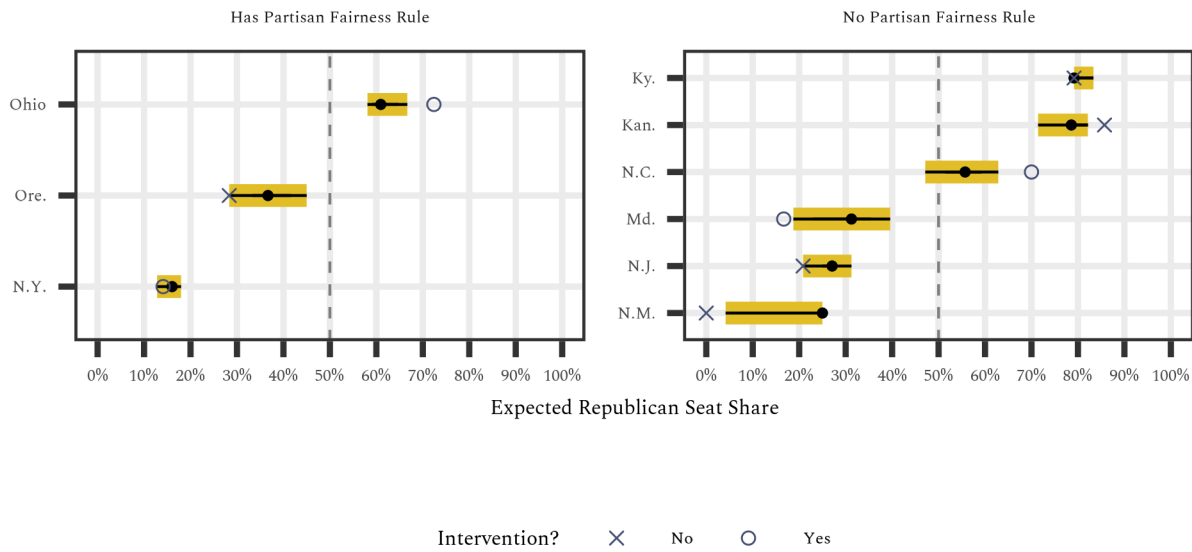
I first look at court behavior using the universe of plans challenged since *Rucho*. As almost all cases are appealed, if they don't originate at the state's highest court, results are shown by the final decision in the case. I estimate a series of logistic regression models where the dependent variable is whether a court invalidated a plan. The dependent variable is when a court invalidates a plan, with invalidation taking a value of 1. I control for the size of the partisan bias of a given plan. I then fit this model again, interacting the partisan bias and the court decision. I fit this for both variations of the universe of cases described before, both looking at challenges only to initial plans and including challenges to remedial plans.

As seen in [Figure 3](#), the presence of rules is associated with a higher probability of a plan being thrown out, even after accounting for the magnitude of the partisan bias. Estimated coefficients are available in [Table A1](#) and [Appendix A](#) shows the underlying data. While there is relatively limited data, this suggests that the presence of rules in the state's redistricting requirements is associated with a higher likelihood of a plan being thrown out on partisan gerrymandering grounds, conditional on a case being filed.



**Figure 3:** Predicted probability of court intervention. Red shows predictions for states without partisan fairness rules and yellow shows predictions for those with rules. The x-axis shows the magnitude of the partisan bias.

As before, we can also subset to the set of congressional plans, which allows us to use simulations to evaluate the plans. I again use the difference in the share of Republican seats compared to the simulations. [Figure 4](#) shows the results for the plans that were challenged in court. The left panel shows states with partisan fairness rules, while the right panel shows states without partisan fairness rules. In both panels, we see plans that are outside of the simulation range were often invalidated.



**Figure 4:** Court intervention in challenges to congressional plans. Plans that were upheld are shown with an “x”, whereas plans that had interventions are shown with an open circle. The plans shown are the initial plans passed by the state’s mapdrawing body. The yellow bar shows the middle 95% of simulations, with the black dot indicating the median.

New York and Ohio both have partisan fairness rules at the congressional level and saw their plans invalidated. New York’s plan was thrown out by a court, but the plan was not an outlier compared to the simulations. Here, the court of last resort was Democratic, while the plan was drawn by Democrats in the legislature. Ohio’s first plan was also an outlier compared to the simulations. Here, both the map drawing body and the court were majority Republican. In both of these states, the court invalidated a plan against the majority of the court’s partisan interests.

Among states without partisan fairness rules, the plans in both Maryland and North Carolina are a clear outlier compared to the simulations and saw their plans thrown out. Note that judges in Maryland are officially nonpartisan, but the majority of the court was appointed by a Democratic governor, and the plan was drawn by Democrats in the state legislature. In North Carolina, at the time of the decision, the court was majority Democratic, while the plan was drawn by Republicans.

In Kansas, the plan is an outlier and a lower court initially invalidated the plan. However, the state’s highest court reversed the decision.<sup>3</sup> In a short order and opinion, the court determined that there was no rule in Kansas preventing partisan gerrymandering and thus it was a nonjusticiable political question, similar to what the US Supreme Court held in *Rucho*.

<sup>3</sup>The full Kansas order can be found at <https://thearp.org/litigation/rivera-v-schwab/>.

New Mexico provides an interesting comparison, where there is ample evidence of partisan gerrymandering. In a 14-page order from the state’s supreme court, the first 13 pages are filled with facts found in favor of the challengers.<sup>4</sup> The court accepted assertions that counties were split unnecessarily, that lines had shuffled voters into different districts based on party, and that the plan was an outlier relative to simulations run by an expert. The court indeed finds that the plan was a Democratic gerrymander. However, in the final paragraphs of the order, they deem that it was not an “egregious” gerrymander, thus it was legal. As such, the court acknowledges the biases of the plan but does not find them to be enough to invalidate the plan. Absent a partisan fairness rule, the court was able to uphold a plan that was an outlier in terms of partisan bias.

Taken together, while the total number of cases is small, the courts have typically invalidated plans that are outliers in terms of partisan bias. Among places where the court does not intervene, the plans are typically not outliers compared to the simulations. For New Mexico and Kansas, the states’ courts of last resort upheld plans that were outliers, and made legal arguments for such allowances in the absence of any explicit partisan fairness rule.

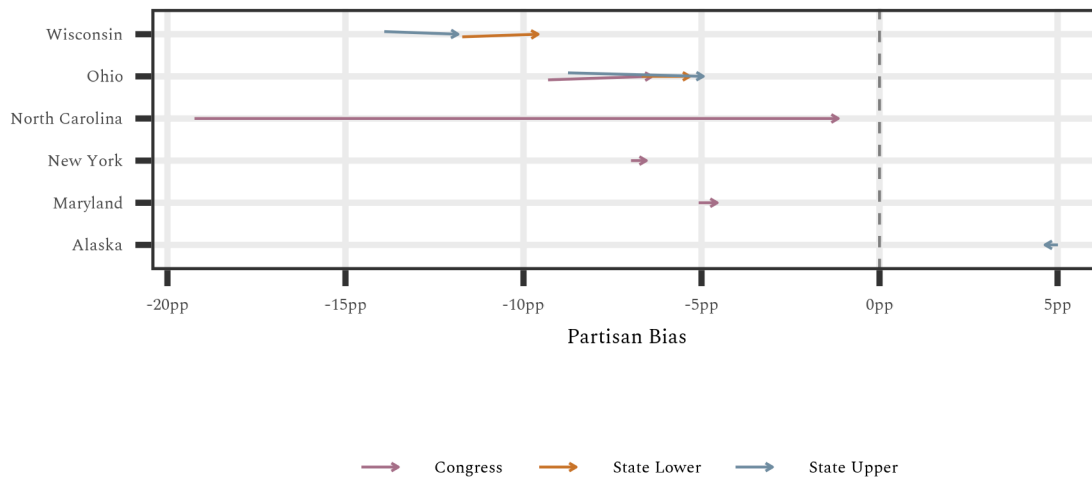
#### **4.2. Court intervention reduces bias in redistricting plans**

When a court decides to intervene, how much does the bias in the plan change? Even if a court intervenes, there is no guarantee that the plan will be meaningfully improved. A court could intervene and approve a similar remedial plan. This type of decision would give the appearance of checking the power of the mapdrawer, which could align with the goals of the court, without effectively reducing the bias in the plan. Similarly, a court could intervene and make the plan *more* biased or biased in the direction of the other party, if the court is extremely partisan.

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<sup>4</sup>A copy of the order is available at <https://www.democracydocket.com/wp-content/uploads/2022/01/Rep.-Party-v-M.-Toulouse-Oliver-Findings-of-Fact-and-Conclusions-of-Law.pdf>.





**Figure 5 :** The partisan bias of plans where courts intervened. Arrows point from the partisan bias of the original plan to the partisan bias of the final remedial plan. No plan had an increase in bias. Purple shows congressional plans, orange shows the upper chamber of the state legislature, and blue shows the lower chamber of the state legislature.

Figure 5 shows the reduction in bias among all plans that were replaced during partisan gerrymandering litigation. No plans had an increase in the magnitude of their bias. Using a Bayesian bootstrap, the average reduction in bias is 3.5pp, with a credible interval for the reduction ranging from 1.5pp to 7.6pp. Substantively, this is a relatively large reduction on average and is over double the size of the geographic bias in the US House (Kenny, McCartan, Simko, et al. 2023).

Further, note that Ohio’s congressional plan was not approved by the state court system. This plan was also thrown out by the Ohio Supreme Court after also being an outlier compared to the simulations. However, it was used in elections despite being invalidated due to the timing of the primary elections. Here, a federal court stepped in on malapportionment grounds to allow the last population valid plan to be used for the election, despite the Ohio Supreme Court’s ruling.

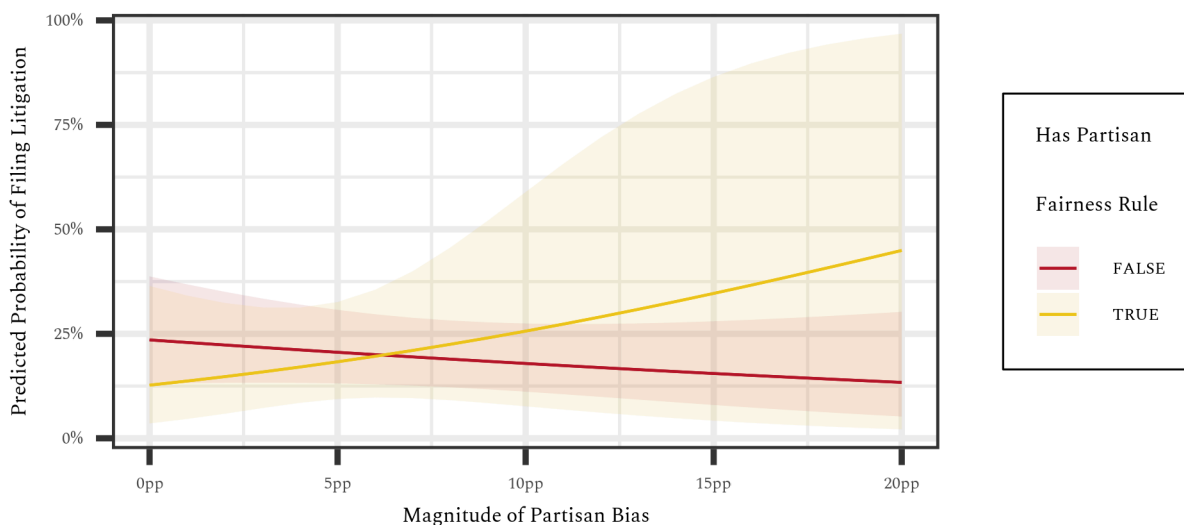
### 4.3. Litigation is no more likely when there are partisan fairness rules

Regardless of the outcome, the filing of a case indicates that a party believes that the plan could be improved. How does the presence of a rule relate to the filing of partisan gerrymandering litigation? One might expect more litigation in states where there are partisan gerrymandering rules, as there are explicit rules to challenge the plan under. However, as seen in Section 3, policymakers generally follow explicit rules, so we should expect there to be no relationship between the presence of rules and the filing of litigation.

Notably, the presence of an explicit partisan fairness rule is not necessarily required to bring litigation. More general electoral fairness laws can be applied to partisan gerrymanders, such as legal provisions that guarantee free and fair elections. Almost all states have language which could be applied in this way (Wang, Ober Jr, and Williams 2019). Indeed, this is not purely a theoretical possibility. In *League of Women Voters of Pennsylvania v. Commonwealth of Pennsylvania* (2018), the Pennsylvania Supreme Court interpreted the state constitution as disallowing partisan gerrymandering and invalidated the existing plan.

Below, I assess the relationship between rules and the filing of litigation. I first subset the plans for each chamber to the first plan enacted by the legislature or commission. I then predict the filing of a partisan gerrymandering claim, where the dependent variable is whether *at least* one partisan gerrymandering claim was filed, using a logistic regression. I control for the magnitude of the partisan bias, as the direction is not directly relevant to the filing of a claim. I fit a second model which interacts the presence of rules and the magnitude of the partisan bias.

I find no statistically significant relationship between the presence of a partisan fairness rule and the filing of a partisan gerrymandering claim. Figure 6 shows predictions from the interacted model. All coefficients for both models are available in Table A2.



**Figure 6** : Predicted probability of litigation being filed. Red shows predictions for states without partisan fairness rules and yellow shows predictions for those with rules. The x-axis shows the magnitude of the partisan bias.

This evidence is consistent with the idea that rules are generally followed. When they are not, states may see litigation. When there are no rules, there is still the possibility of litigation, but it is not more likely than in states with rules.

## 5. Observability of Compliance with Redistricting Rules

To better understand how rules bind policymakers, I next directly assess how the explicitness of a rule impacts its effect. I focus on one dimension of explicitness: the ease with which violations of the rule can be observed, which I term the *observability of compliance*. When observability of compliance is high, then the rule should be better followed. Primarily, if it's easy to see if a rule is violated, then other policymakers or courts can object straightforwardly. However, when it's unclear how to measure compliance with a rule or if the baseline for compliance is unclear, then we should expect it to bind less.

As discussed in [Section 2](#), rules vary greatly across states, which offers a good way to test how rules that differ along this axis impact the process. Partisan fairness rules are some of the most prominent rules in regulating redistricting. However, many states include additional rules which govern the redistricting process. Below, I introduce rules that are commonly found in redistricting and discuss how their explicitness varies.

To do so, I collect all relevant legislation and constitutional rules regarding redistricting for both the 2010 and 2020 redistricting cycles. I then classify these rules based on the criteria they impose on map drawers.

Each rule is classified into one of the following categories:

- **County splits:** rules that require minimizing the number of counties split.
- **Multi-county splits:** rules that require minimizing the number of times each county is split.
- **Municipal splits:** rules that require minimizing the number of municipalities (e.g. towns and cities) split.
- **Incumbent ignorance:** rules that require map drawers to ignore the location of incumbents or candidates for office.
- **Compactness:** rules that require districts to be drawn in a compact fashion.

These categories are not exhaustive. I do not consider rules that require districts to be contiguous, as there is almost no variation in this rule across states. Further, I do not consider rules which require districts to be equal in population, as this is a federal requirement. Similarly, I do not use rules which require districts to be VRA compliant, as this is also required federally.

Among the categories considered, the observability of compliance with the rule varies. Rules which limit splits are easily observable: anyone can count which counties or towns are split, and how many times they are split. Assessing if incumbents are paired is also directly observable. Compactness, however, is necessarily fuzzier. Substantial work has been done to relate the shape of districts to reference shapes, such as the Polsby-Popper score ([Polsby and Popper 1991](#)) or Reock score ([Reock 1961](#)), or to capture how compactness is perceived by humans using machine learning methods ([Kaufman, King, and Komisarchik 2021](#)). While there may be an obviousness as

to whether a district is extremely non-compact or compact, the gradations in between are unclear. Similarly, assessing partisan fairness requires substantial data and measurement to determine if a plan is biased.

Yet, even when the rule is observable, it is not always clear what the baseline is. County splits will be necessary when a county has more population than a district. Incumbents will necessarily be paired when the number of districts decreases during apportionment.

To address this problem, I combine these classifications of rules with samples of alternative redistricting plans. I use 5,000 alternative plans for each state for the 2020 congressional cycles, as before (McCartan et al. 2022). I combine these plans with a new set of simulations which are similarly drawn using the SMC algorithm (McCartan and Imai 2023; Kenny et al. 2024). These plans are designed to be representative of plans that could be drawn by a state under their set of criteria. For every state for both decades, these simulations use the criteria formally adopted by a state's map drawers, including those that are not binding law, where possible.

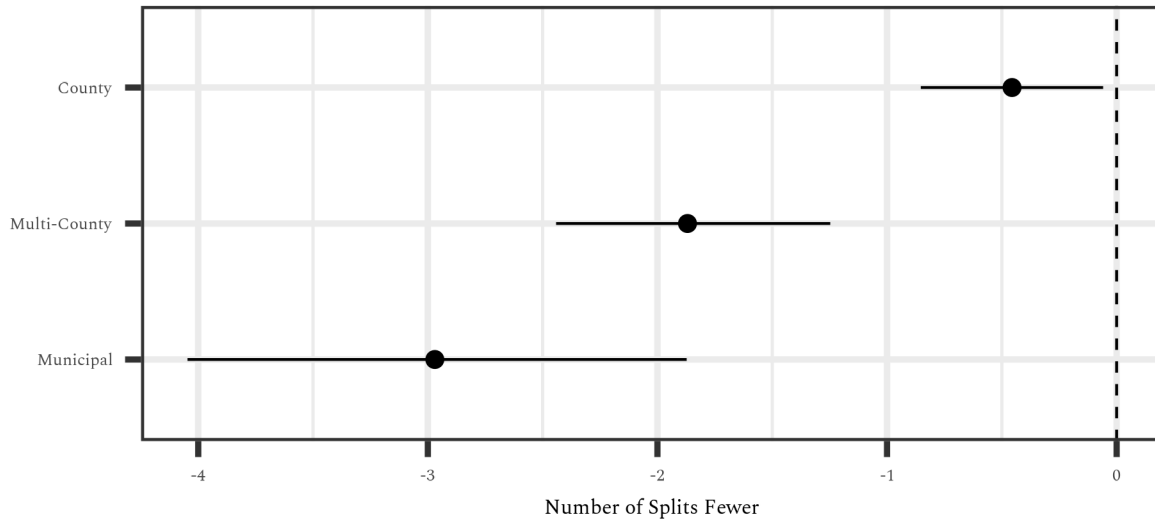
To allow for comparability across states, I difference of the outcome of interest between the enacted plan and the simulated plans. This allows us to compare the impact of rules on the enacted plans across states while controlling for the underlying political geography of the state. Further, this helps account for the differences in the number of districts in each state and possible differences in the ranges of possible outcomes.

To account for uncertainty, I calculate 95% confidence intervals for each outcome. Sampled plans from the SMC algorithm are treated as independent and the order of the plans is random (McCartan and Imai 2023). As such, to compute a distribution for a given state, I take the 2.5th and 97.5th percentiles of the simulated outcomes. To compute confidence intervals for the mean from a set of states, I average the outcome across states by plan index and then take the 2.5th and 97.5th percentiles of the means of those 5,000 estimates. For the set of state estimates, this relies on the random order of the plans in the output to produce an estimated upper and lower bound.

To compute a confidence interval for the difference in means, I again rely on the random ordering of the plans. Before averaging across the 5,000 plans, I compute 5,000 means for the states with a given rule and 5,000 means for the states without a given rule. The 2.5th and 97.5th percentiles of the difference in means across the 5,000 estimates then provide a 95% confidence interval for the difference in means.

First, I consider the number of splits in the enacted plans, which are easily observable. Figure 7 demonstrates the number of splits above the sampled plans. Across the three types of splits, each rule decreases the number of splits. The presence of a county splitting rule is associated with splitting 0.5 fewer counties. Similarly, a multi-county splitting rule is associated with splitting

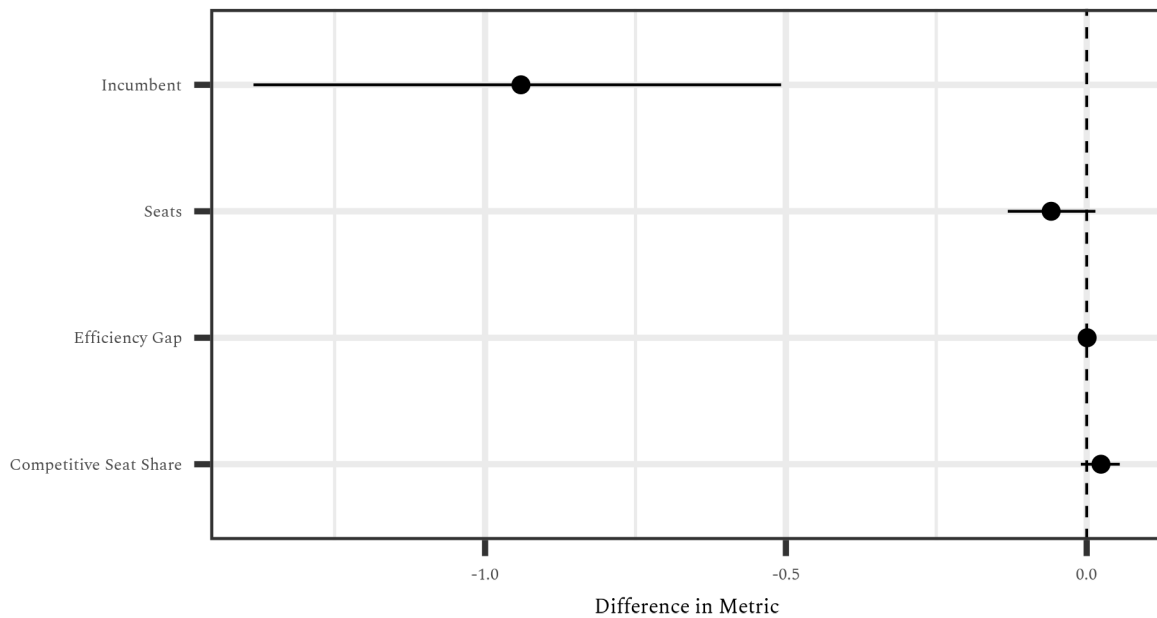
counties nearly 3 times less. Looking to municipal boundary splits, the presence of a rule reduces the number of splits by about 2 on average.



**Figure 7 :** The difference in the number of splits when a splitting rule is present versus when it is not. County splits show the difference in the number of counties split by the presence of a county splitting rule. Municipal splits shows the difference in the number of municipalities split by the presence of a municipality splitting rule. The multi-split rule shows the difference in the number of counties that are split multiple times by the presence of a corresponding rule.

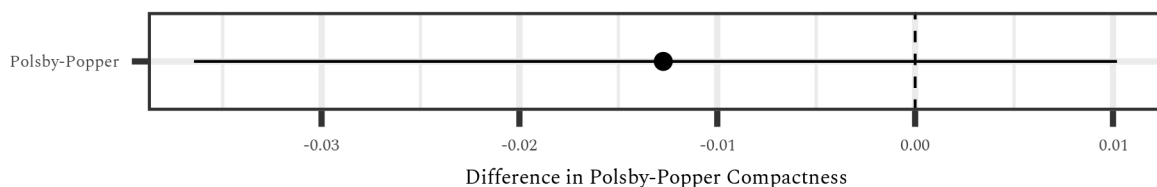
Next, [Figure 8](#) shows results for three partisan measures and the incumbent pairing rules. As with the splits, these outcomes are differences between the enacted plan and simulations. States with an incumbent ignorance rule, sees about one less pairing of incumbents than states without.<sup>5</sup> The results for competitiveness are fairly minimal, with about a 2 percentage point larger share of competitive seats. For both the efficiency gap and difference in Republican seats from simulations, there is no difference.

<sup>5</sup>Data on incumbent addresses comes from the [Redistricting Data Hub](#) and is original sourced by Dr. Carl Klarner.



**Figure 8 :** Compliance with partisan-related rules. Incumbent ignorance shows the difference in the number of incumbent pairings by the presence of an incumbent ignorance rule. Competitiveness shows the difference in the share of competitive seats by the presence of a partisan ignorance rule. The efficiency gap shows the difference in the magnitude of the efficiency gap by the presence of a partisan ignorance rule. Seats shows the difference in the number of Republican seats.

Finally, [Figure 9](#) shows the results for the most common compactness measure, the Polsby Popper compactness ([Polsby and Popper 1991](#)). As argued above, compactness is particularly difficult to observe because there is no optimal value within applied settings. For this measure, I see no meaningful or statistically significant difference.



**Figure 9 :** Compliance with compactness rules. Polsby Popper shows the difference in the Polsby Popper score by the presence of a Polsby Popper rule.

These results illustrate that there is significant heterogeneity in the degree to which rules bind mapdrawers. Of note, compliance is highest for rules where it's easiest to measure and assess

compliance. This is perhaps intuitive, but demonstrates the value of designing rules which specify how compliance should be measured.

## **6. Discussion**

Policymakers, whether elected or not, are not immune to concerns about party-driven decisions. Especially in polarized times, we may worry that policymakers will act in ways that are biased. Courts are often seen as a check on these biases, but they are not immune to them either.

My results suggest that if a democratic institution depends on norms, it is beneficial to make those norms into rules. Rather than relying on good faith actors, rules may help ensure good outcomes. Even when rules are broken, they can provide a basis for courts to intervene.

Using the unique legal system behind redistricting, I demonstrate that policymakers generally follow established partisan fairness rules. When they do not, courts frequently intervene in ways that reduce partisan bias. Court intervention varies by the presence of explicit partisan fairness rules, with states that have such rules tending to have less biased plans and tending to see courts intervene in cases where plans are biased. This is a hopeful result, as it suggests that courts are acting in ways that are consistent with the public interest. However, there is room for partisan choices when the rules are not explicit.

I further demonstrate that general compliance with rules is highest when the rules are easiest to measure. This suggests that when designing rules, it is important to make them clear and easy to measure. In the redistricting world, some states have done this, such as Ohio's state legislative redistricting rules, which indicate that the benchmark is proportional representation. My results suggest that this is a good practice. Policymakers beyond the scope of redistricting should consider this as well.

In general, if there are concerns about partisan actions against the public will, then policy should be designed to lay out clear and explicit bounds and procedures. In areas like redistricting, where there are many dimensions, but well established measurements, policy can precisely define what is and is not allowed. More research is necessary, especially as the evidence here draws from highly contentious, yet relatively few cases.

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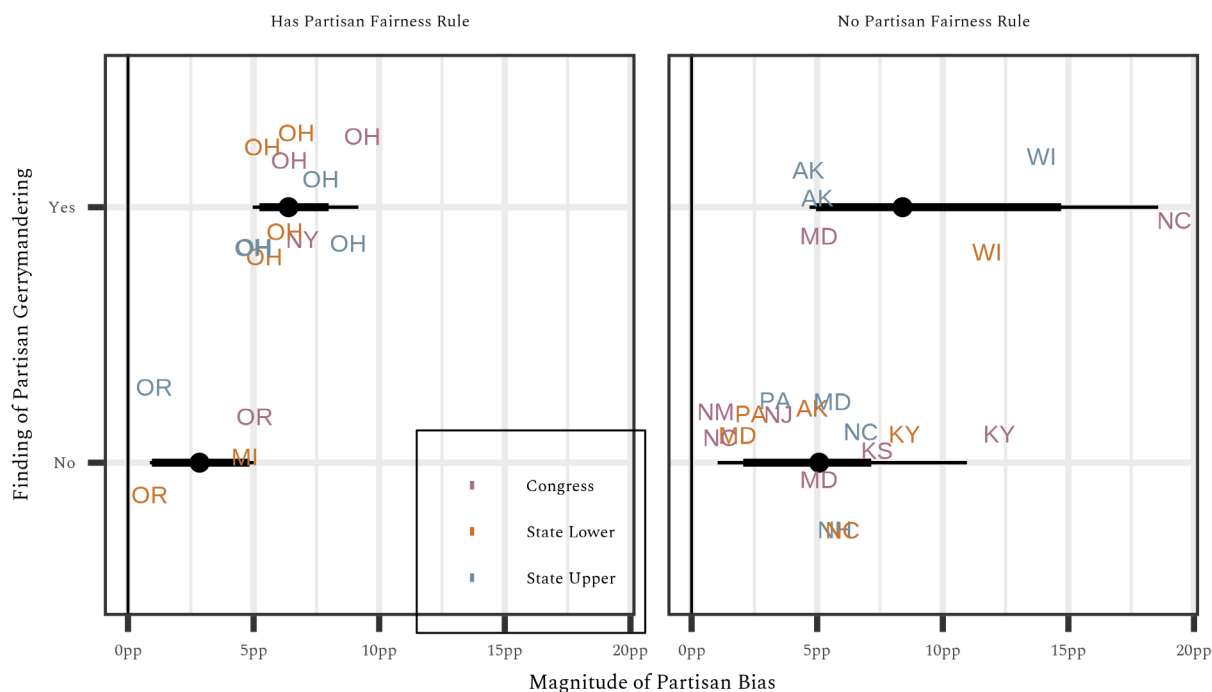
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## Appendix

### A. Universe of Partisan Gerrymandering Cases

Below, I present the same data as described in [Section 3.2](#) as a figure.



**Figure A1** : Universe of partisan gerrymandering cases since *Rucho v. Common Cause*. The left panel represents state-levels which have some form of partisan fairness rules in their redistricting requirements. The right panel represents states which do not have such rules. The color of each point represents the level of the redistricting plan. A plan without bias has a score of 0, while a larger number indicates a larger magnitude of bias. I take the absolute value of the efficiency gap as a simple measure of the bias of a plan, without respect to party. Points are jittered vertically to avoid overplotting.

[Figure A1](#) shows the magnitude of efficiency gap of each plan in the universe of cases since *Rucho*. The color of each point represents the level of the redistricting plan.

### B. Predicting Court Intervention in Partisan Gerrymandering Cases

Below, I present the coefficients for the logistic regression fit in [Section 4.1](#).

**Table A1** : Predicting outcome of partisan gerrymandering claims. Partisan Fair Rule represents an indicator for a state with a partisan fairness rule taking the value of 1. Models 1 and 2 contain only the 29 original cases. Models 3 and 4 include repeated challenges to distinct plans within the same state-level. In particular, this adds multiple decisions for Ohio and Alaska, where the state’s plans were challenged multiple times. Models 2 and 4 include an interaction between the magnitude of the partisan bias and the presence of a rule, though the data is quite limited.

	(1)	(2)	(3)	(4)
Constant	-4.588 (1.568)	-3.557 (1.412)	-3.791 (1.280)	-2.844 (1.166)
Partisan Bias	46.226 (17.932)	32.975 (16.238)	40.859 (15.962)	27.467 (14.341)
Partisan Fairness Rule	2.267 (1.133)	-147.290 (28948.731)	2.665 (0.948)	-41.170 (41.472)
Partisan Bias x Partisan Fairness Rule		2608.067 (500817.507)		866.704 (833.126)
Num.Obs.	29	29	36	36
AIC	40.4	142.8	37.7	32.7
BIC	44.5	148.2	42.4	39.0
Log.Lik.	-17.207	-67.389	-15.832	-12.352
RMSE	0.34	0.29	0.37	0.34

### C. Predicting partisan gerrymandering challenges

Below, I present the coefficients for the logistic regression fit in [Section 4.3](#).

**Table A2** : Predicting filing of partisan gerrymandering claims for the 140 distinct redistricting plans enacted in the 2020 cycle. The dependent variable is whether at least one partisan gerrymandering claim was filed. The independent variables are the presence of partisan fairness rules in the state’s redistricting requirements and the magnitude of the efficiency gap. Model 1 contains only the base terms, while Model 2 includes the interaction of the presence of a fairness rule with the magnitude of the bias.

	(1)	(2)
Constant	-1.244 (0.358)	-1.178 (0.367)
Partisan Bias	-2.560 (3.222)	-3.451 (3.563)
Partisan Fairness Rule	-0.179 (0.483)	-0.749 (0.789)
Partisan Bias x Partisan Fairness Rule		12.072 (12.429)
Num.Obs.	140	140
AIC	139.6	140.7
BIC	148.5	152.5
Log.Lik.	-66.823	-66.362
RMSE	0.39	0.39