

Chapter 3

Southern Redistricting under the VRA: A Model of Partisan Tides*

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Abstract: This paper evaluates the effects of the 1982 Voting Rights Act amendments, mandating the creation of majority-minority districts, on the partisan composition of congressional delegations in southern states, concluding that these amendments were advantageous to Republicans in states in the Deep South only under closely balanced national partisan tides. The argument follows in three steps. First, the paper measures changes in racial segregation across congressional districts over four decades to determine where the VRA was most constraining. Second, the model from the previous chapter is adapted to predict the partisan effects on those heavily constrained maps. And third, these predictions are tested through an empirical data set of Southern congressional elections, and short case studies from the previous decade.

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I. Introduction

The model of redistricting and partisan tides presented in the previous chapter has thus far deliberately omitted both a critical topic and region to both recent litigation and research. The impact of race, particularly with respect to African-Americans in the South, merits separate consideration. More specifically, the theory of redistricting and partisan tides presented in Chapter 2 must be adjusted to account for the modern legal mandate for creating majority-minority legislative districts, where African-Americans form an effective majority of the voting population of the district. Our particular focus will be the South, given its significant African-American population and history of discriminatory efforts to disenfranchise that population. Thus, this chapter will explore the impact of the 1982 amendments to the Voting Rights Act (VRA), which mandated the drawing of majority-minority districts, on the partisan composition of Southern congressional delegations.

It is important to distinguish three empirical questions in examining the impact of the VRA amendments:

- 1) How did the amendments impact the election of racial minorities to the legislature?
- 2) How did the amendments impact the election of Democrats/Republicans to the legislatures?
- 3) How did the amendments impact the election of representatives who agreed with racial minorities on substantive policy issues?

The answer to question (1) is fairly clear and largely undisputed in the literature on at least one point: the VRA amendments resulted in the election of more African-Americans to Congress.¹ This chapter *only* attempts to address question (2): how the partisan composition of congressional delegations was influenced by the 1982 Voting Rights Act amendments. It will not attempt to quantify whether those changes in partisan composition were beneficial to the substantive interests of African-Americans or other minorities. This question is explored, with application of the adapted model presented in this chapter, in Chapter 4 on voter welfare measures and democratic norms.

The findings of this paper, through the simulation model, empirical evidence, and case studies, can be summarized as follows:

¹ In the clearest example, the number of African-Americans representing the former Confederacy in Congress jumped immediately from 5 in 1990 to 16 in 1992.

- The VRA amendments had little impact on the partisan composition of state delegations on the perimeter of the South; instead, trends in these delegations can be mostly explained by the partisanship of the districting institution.
- Conversely, the VRA amendments had a much greater impact, and the partisanship of the districting institution less impact, on delegations in the deep South. In these states, the VRA amendments led to the election of more Republicans under neutral partisan tides, but also probably allowed Democrats to win more seats back under Democratic tides.²

This evidence will be presented as follows: Section II summarizes the legal and academic background of the majority-minority districting mandate. Section III presents preliminary evidence for examining the South post-VRA amendments in an entirely different context from the rest of the country. Section IV isolates which states were most impacted and constrained by the VRA amendments by measuring changes in black population concentration among districts. Section V adjusts the simulation model to account for those most-constrained states. Section VI provides empirical support for the adjusted model, largely through case studies, and Section VII concludes.

II. Background

A. Legal Environment

With respect to racial districting, three sections of law come into play most frequently: the Equal Protection clause of the 14th Amendment, §5 of the Voting Rights Act, and §2 of the Voting Rights Act. In first decade following passage of the VRA, the balance of litigation involved §5, which required certain “covered jurisdictions” with a history of discrimination to get preclearance for any change to their voting system, with the burden on the covered jurisdiction to prove that the change does not have a “retrogressive purpose” with respect to the voting rights or voting strength of a racial minority. Within the framework of redistricting, this section would typically come into play if a Southern state attempted to reduce the number of

² The model does not attempt to explain districting in states with large Hispanic populations. In these states, the case studies will suggest that the partisan composition of the minority is crucial, ultimately facilitating an aggressive Republican gerrymander in Florida, but impeding the same effort in Texas.

majority-minority districts that had been drawn in a previous decade (as was alleged in *Georgia v. Ashcroft*, discussed below).³

However, §2 has a more far-reaching impact on districting, as it applies to all jurisdictions and does not require retrogression. As passed in 1965, §2 read:

“No [voting procedure, etc.] shall be imposed or applied by any State or political subdivision to deny or abridge the right of any citizen of the States to vote on account or race or color.”

The section has become the basis of subsequent litigation alleging “vote dilution”, the claim that a voting system or map dilutes the votes of a racial minority so that they will not have decisive voting power to elect a representative of their choice.

In *Mobile v. Bolden* (1980), a controversial case interpreting this clause, the Supreme Court upheld at-large districting for Mobile, Alabama city commissioners, a system that inevitably led to the election of an all-white commission. The Court held that §2 only prohibited procedures enacted in the face of proof of discriminatory intent, apparently contradicting an earlier decision in *White v. Regester* (1973), under which the Court struck down multi-member districts in the Texas state legislature on the basis of “discriminatory results”. Voting rights advocates responded with outrage, ultimately leading to the passage of the 1982 amendments.

With the VRA up for renewal in 1982, Congress adopted several important amendments, including adopting a new clause into §2 as follows:

- a. "No voting qualification or prerequisite to voting or standard, practice, or procedure shall be imposed or applied by any State or political subdivision in a manner which results in a denial or abridgement of the right of any citizen of the United States to vote on account of race or color, or in contravention of the guarantees set forth in section 1973b(f)(2) of this title, as provided in subsection (b) of this section
- b. A violation of subsection (a) of this section is established if, based on the totality of circumstances, it is shown that the political processes leading to nomination or election in the State or political subdivision are not equally open to participation by members of a class of citizens protected by subsection (a) of this section in that its member have less opportunity than other members of the electorate to participate in the political process and to

³ It is also still an open question, being litigated during the current round of redistricting, how retrogression should be defined in light of changing demographics. For example, if Texas drew eight majority Hispanic districts in 2004, is it retrogressive to draw eight majority Hispanic districts again in 2011 despite the fact that both the Hispanic proportion of the population and the number of districts in Texas have increased substantially?

elect representatives of their choice. The extent to which members of a protected class have been elected to office in the State or political subdivision is one circumstance which may be considered. Provided, that nothing in this section establishes a right to have members of a protected class elected in numbers equal to their participation in the population."

Thus, the amendments codified the pre-*Bolden* "results" standard for vote dilution, while making it clear that this standard did not mandate proportional racial representation, but rather should look at the totality of circumstances; language minorities were also added to the coverage.

This section would come to be understood as requiring the creation of majority-minority districts to assure that minority voting power was not diluted under certain circumstances. The first case interpreting this new section, *Thornburg v. Gingles* (1986), established the framework for what these circumstances were. In striking down multi-member districts in the North Carolina state legislature, Brennan's majority decision in *Gingles* held the for a vote dilution claim to be established, "a bloc voting majority must usually be able to defeat candidates supported by a politically cohesive, geographically insular minority group." Meeting this standard was to be determined by what is now commonly referred to the "three-pronged Gingles test": first, the minority group must be large and compact enough to constitute a majority of a district; second, the minority group must be politically cohesive; and third, the majority must vote sufficiently as a bloc to defeat a minority candidate in the absence of special circumstances. Conservatives on the Court concurred in judgment, but did not agree with the particular test, arguing that it went too far in mandating proportionally representation.

The effects of the amendment as interpreted by *Gingles* resounded in the 1990 round of redistricting, as every Southern state with sufficient black population felt impelled to draw one or more districts with majority black population. In 1992, the number of blacks elected to Congress from the South grew from five to sixteen. But the deliberate creation majority-minority districts soon ran into legal roadblocks in *Shaw v. Reno* (1993) in the form of the Equal Protection clause.

In *Shaw*, the Court struck down a North Carolina congressional map creating two very strangely shaped majority-minority districts. In their first attempt at districting following the 1990 census, the North Carolina legislature drew only one such district, but this drew objections from the Attorney General charged with preclearance under §5, claiming that a second majority-black district could and should be drawn. North Carolina declined to appeal the objection to the District Court, and instead drew a map in compliance with the Department of Justice. The *Shaw* plaintiffs in particular opposed the new district that was "contiguous only because it intersects at

a single point with two other districts before crossing over them”, claiming that bizarre districts “unexplainable on grounds other than race” should demand strict scrutiny. The conservative majority on the Court agreed, striking down the map and holding districts that “cannot be understood as anything other than an effort to separate voters into different districts based on race” to be a violation of equal protection.

Subsequently, the Court struck down minority districts in Georgia (*Miller v. Johnson* (1995)) and Texas (*Bush v. Vera* (1996)), describing racially-motivated districting as an “expressive harm”, i.e. not a harm to an individual voter, but one a harm that is cause to all by an idea (in this case racial discrimination) being expressed or supported through government action. The North Carolina map went through five iterations in the Supreme Court before it was finally (an irrelevantly) upheld in *Easley v. Cromartie* (2001). In the next decade, the conservative majority on the Court held in *Georgia v. Ashcroft* (2003) that reducing the number of majority-minority districts while increasing the number of minority influence or coalition districts did not necessarily constitute retrogression in contravention of §5. Recent cases have added to the confusion: *LULAC v. Perry* (2006) threw out part of a Texas map for retrogression when it reduced the population of a majority-Hispanic district to 46% of the voting age population; *Bartlett v. Strickland* (2009) held that a minority group could not make a §2 claim if they could not constitute the majority population of a district.

The legal precedent over the past twenty years thus demands a balancing act: states must draw districts that do not dilute minority voting strength where the minority population meets the *Gingles* test, but cannot exclusively use race as a factor in drawing district, as this would violate equal protection. Additionally, covered jurisdictions cannot draw districts that will involve retrogression in minority voting strength, but all factors, and not just numerical majority populations, must be considered in evaluating voting strength and retrogression.

B. Related Literature

In light of the 1982 VRA amendments mandating the creation of majority-minority districts following the 1990 census, the effects of racial gerrymandering came to dominate the literature in the subsequent decade. The central question in most of these articles is to what extent the creation of majority-minority districts (which presumably will elect African-American or Hispanic Democrats) hurt the interests of those minorities by increasing the chances that remaining districts will elect Republicans. Some of these articles use partisanship as a proxy of for substantive minority representation, others attempts to measure this more directly using ideology scores or policy outcomes.

Lublin (1997) argues that the VRA has created a dilemma in which minority voters are only able to achieve symbolic representation by accepting a less substantively responsive Congress; the same gerrymanders that promote minority representation elect Republican majorities. This position is echoed by Bullock (1995) and Swain (2006).

But this alleged trade-off has been also been strenuously challenged. Shotts (2001) develops a model of how majority-minority should influence partisan gerrymanders, and finds that both parties can see their partisan maps weakened depending on the imposition of geographic and other constraints. Subsequent work by Shotts (2002, 2003) suggests that liberals are not harmed with respect to policy or representation by the imposition of minority districting mandates. Lublin and Voss (2003) dispute this conclusion and argue that Shotts's model is not robust to possibility of partisan swings over time, and that the rightward shift in opinion was exacerbated by VRA mandates to produce the Republican congressional majority in 1994. But Washington (2010) also finds that pressure to create majority-minority districts does not lead to more conservative delegations. Canon (1999) claims that even black-majority districts do not represent monolithic interests, and develops a "supply-side" theory of candidate selection to argue that these districts promote the representation of all voters.

Authors even disagree about the partisan impact of the first two election cycles following 1990 census. Hill (1995) analyzes election results in eight Southern states in 1992, and finds that Republicans won four additional seat as a result of majority-minority districts, and that several other seats were left vulnerable to turnover in 1994. But Petorcik and Deposato (1998) claim that what look like Republican gains due to majority-minority districts in these cycles were actually "second-order" effects of unfamiliar voters and short-term electoral forces.

In light of this debate, authors have recently set out to construct models of how to maximize black substantive representation. Cameron, Epstein, and O'Halloran (1996) use empirical testing to estimate the probability of electing African-American representatives given a percent African-American population, and then develop a model of gerrymandering to maximize the substantive representation of minority interests. They find minority interests are best represented outside of the South when spread equally throughout all districts, while being best represented in the South when split into districts such that there will be slightly *less* than 50% African American population in a largest possible number of districts. Nakao (2011) also develops a model of alternative approaches to minority representation with probabilistic elections using coalition districts and second-order diversity.

This chapter will attempt to define the conditions under which each side of this debate is right, with respect to both statewide demographic characteristics and national electoral tides.

III. The South is Different

Before moving on to adapting our simulation model to account for the impact of the VRA amendments, we should note how differently congressional elections have played out in the South since the passage of these amendments. The differences distinguish the South in the post-VRA amendments era from both the rest of the country during the same time period and from the South prior to the 1990s. As is laid out in Table 1, congressional elections in the South post-1990 are remarkable for their lack of responsiveness to the fundamental trends and balance in public opinion that have influenced the rest of the country. Table 1 shows the predicted probability of a congressional seat being won by a Republican given data from all congressional elections 1972-2008, from probit coefficients, with two controls familiar from Chapter 2:

- (a) *Statewide Presidential Vote* is a measure of how much more Republican the state is compared to the country as a whole in presidential voting (or more Democratic when the variable is negative). It is the difference between the average statewide Republican presidential vote margin and the average national Republican vote margin over the previous two elections for a given state in a given year.
- (b) *National Congressional Tides*, is the amount by which the Republican party won the national congressional popular vote in a given year. This ranges from -15 (the

largest Democratic tide in this period, the post-Watergate election in 1974) to 6 (the Republican wave election in 1994).

Both controls are scaled similarly: a value of 10 in *National Congressional Tides* means the Republicans won the congressional popular by 10% in a given year, while a value of 10 in *Statewide Popular Vote* means that recent Republican presidential candidates won a state by 10% more than their national average. For the moment, we exclude all consideration of redistricting institutions from this analysis.

Table 1. Effect of Statewide Ideology and National Tides on Congressional GOP Win Probability

Pr(GOP wins seat)	National		Non-South		South	
	72-08		72-90	92-08	72-90	92-08
Statewide Pres. Vote	.021 ** (.003)		.026 ** (.005)	.030 ** (.004)	.023 † (.013)	-.001 (.011)
Nat'l Congressional Tides	.026 ** (.003)		.022 ** (.004)	.025 ** (.004)	.024 ** (.008)	.007 (.005)
Constant	-.045 (.031)		-.006 (.057)	.060 (.051)	-.411 ** (.107)	.169 (.142)
<i>n</i>	8265		3170	2716	1180	1199

Notes: Entries are probit coefficients. The dependent variable is 1 if a seat was won by a Republican, and 0 otherwise. Standard errors, clustered by congressional district interacted with decade, are in parentheses. † = $p < .10$; * = $p < .05$; ** = $p < .01$

With the national sample from 1972 through 2008 (the first column in Table 1), the coefficients for *Statewide Presidential Vote* and *National Congressional Tides* are both positive with a high degree of precision, and very similar to each other. And this is quite sensible: we would expect that shifting the entire nation 1% more Republican in a given election year to have approximately the same effect on a state's delegation as shifting that state 1% more Republican in isolation. In this case, the coefficients indicate that a 1% increase in Republican vote share predicts 2% more Republican congressional seats under realistic conditions for the variables.

The remaining four columns show four “quadrants” of the data set: the South (including the eleven confederate states and Oklahoma) both before and after 1991, and the rest of the country, also before and after 1991. What is remarkable is how differently the last column behaves compared to the other three, and the data set as a whole. For both subsets of non-South data and the South pre-1991, the coefficients on *Statewide Presidential Vote* and *National Congressional Tides* are significantly positive and similar to each other, between .20 and .30 in

every case. This indicates that delegations within these subsets responded both to national tides and changes in statewide ideology in very predictable ways. One difference to note is the significantly negative constant in the case of the pre-1991 South. This indicates that Southern Democrats performed much better in congressional elections than their state's presidential performance would indicate. Specifically, a swing state (nationally average at the presidential level) in a tied congressional election pre-1991 would elect a 66% Democratic congressional delegation if the state was in the South, but a 50% Democratic delegation otherwise. Given the dominance of conservative Democrats in southern congressional politics coupled with Republican success in presidential elections in the South post-civil rights movement, this result is unsurprising.

What is surprising, however, are the effects of opinion change on congressional delegations for the post-1991 southern subset. Completely inconsistent with the other subsets, the coefficient values for both national partisan tides and statewide ideology are close to zero in the post-VRA amendment southern congressional elections. The apparent implication is that the partisan composition of a southern congressional delegation is affected neither by how Democratic or Republican the state is at the presidential level, nor by national swings in public opinion at the congressional level. But another possible cause for these remarkable results is that these trends, perhaps moderated by both the VRA and redistricting institutions, affect some southern states or districts in the expected direction, but others in perverse and opposite direction, causing the effects to cancel out when we so constrain our attempt to measure their effect. The remainder of this chapter will explore how in fact the VRA amendments have interacted with both redistricting institutions and congressional popular vote tides to influence congressional seat competition.

IV. Black Population Concentration & VRA Constraint

This paper hypothesizes that the model presented in the previous chapter will perform well with respect to Southern states whose maps were not particularly constrained in by the 1982 VRA amendments. However, for states that were very constrained by these legal changes, an adaptation to the model will be necessary. To determine where the amendments were most constraining, this section asks two questions: First, which states saw the greatest change in black population concentration within their congressional maps? And second, were the VRA amendments the likely cause of these changes?

To measure changes in the segregation of black population within congressional districts, I have calculated the Gini coefficient of racial segregation for each Southern congressional map over the past four decades, where the data points are the percent black population within each of one state's congressional districts. The Gini coefficient is a measure of statistical dispersion more frequently used to quantify income equality. However, it has also been used in a variety of contexts as a measure of racial segregation (see e.g. Massey and Denton 2008 for a discussion of segregation measures, Fabio et al. 2009 for an application).

Gini coefficients range from 0 to 1, with 0 indicating complete equality, and higher coefficients indicating increasing inequality. For example, let us imagine a hypothetical state with 10 congressional districts and a 20% black population. If the black population were spread out evenly among all districts, the Gini coefficient of this distribution would be 0. If the black population were entirely concentrated into two 100% black districts, the Gini coefficient would be .800. If one were to create two districts that were 50% black, with the other eight districts 12.5% black, the Gini coefficient would be .311.⁴

Table 2 below shows the Gini coefficient of black racial segregation for the congressional district maps of each Southern state since the 1970s. Each coefficient is generated from the map used in the first election of the decade, so coefficients for mid-decade map changes are not shown. In addition to the definition of the South used in Chapter 2 (Confederacy plus Oklahoma), I have also included Maryland and Kentucky, states sometimes associated with the South, for illustrative purposes.

⁴ This distribution is similar to VRA-compliant distribution simulated in section V. The Gini coefficient is also very close to the average of post-VRA deep South states.

Table 2. Gini coefficient of black population distribution by congressional district

	<u>1970s</u>	<u>1980s</u>	<u>1990s</u>	<u>2000s</u>
<i>AL</i>	.199	.200	.376	.349
<i>AR</i>	.283	.317	.296	.270
<i>FL</i>	.195	.186	.541	.433
<i>GA</i>	.213	.265	.421	.318
<i>KY</i>	.389	.425	.420	.406
<i>LA</i>	.090	.139	.363	.198
<i>MD</i>	.364	.533	.479	.348
<i>MS</i>	.112	.132	.234	.221
<i>NC</i>	.263	.241	.385	.336
<i>OK</i>	.084	.218	.205	.255
<i>SC</i>	.245	.142	.233	.210
<i>TN</i>	.369	.422	.499	.489
<i>TX</i>	.364	.398	.480	.398
<i>VA</i>	.299	.351	.467	.354
Average	.248	.283	.386	.327
<i>Deep South</i>	.188	.186	.365	.295
Border	.307	.381	.407	.360

From this figure, we see an overall trend: a large increase in black concentration by CD between in the 1980s and the 1990s, followed by a smaller decrease in the 2000s. So it does appear that racial concentration rose immediately following passage of the VRA amendments, and then fell slightly as Court precedent limited their reach.

To explore where the VRA had the greatest impact, I have also divided these states into two geographic categories: Deep South, which includes the seven states on the interior of the Confederacy (bordering only other Confederate states), and Border South, for the remaining seven states.⁵ Figure 1 maps this dichotomy, alongside Figure 2, which depicts the black population of each state in the 2010 census. Note that the “Deep South” includes six of the seven states with greater than 20% black population, although as we will show later, high black population does not completely account for the differences that will be observed between the sub-regions. Figure 3 below graphs the average Gini coefficients by decade for each sub-region.

⁵ I am mindful that this definition differs from some traditional definitions of the “Deep South”, particularly with respect to the inclusion of North Carolina. However, the trait of interest here is the size and distribution of the state’s African American population; on those dimensions, North Carolina share more in common with other Deep South states than border states like Tennessee.

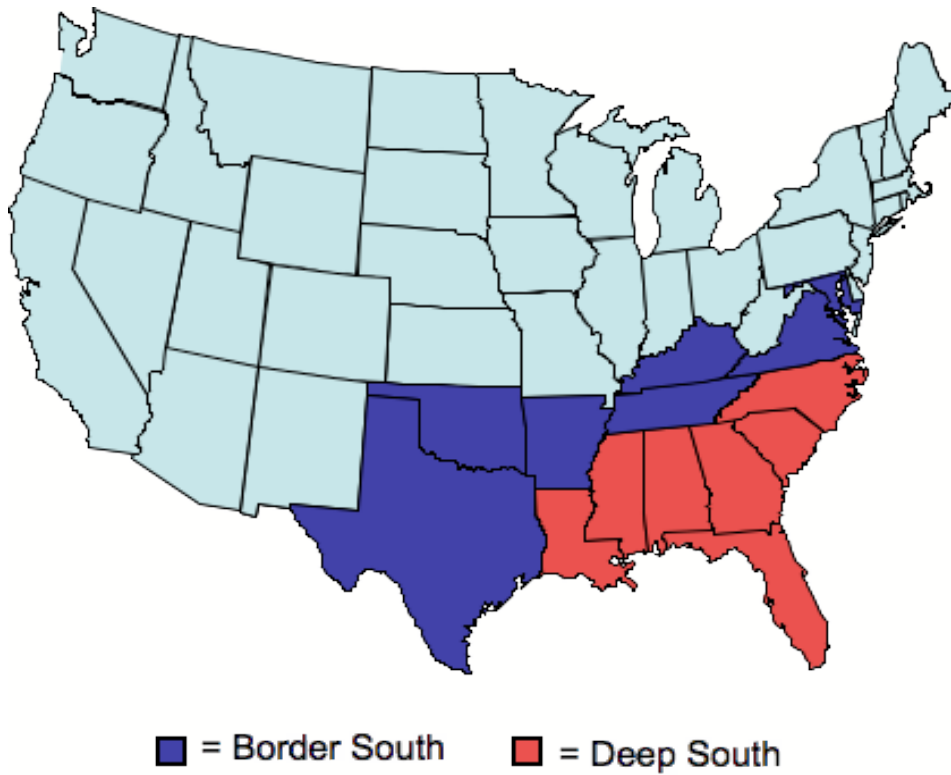


Figure 1. Deep South and Border South Sub-Regions

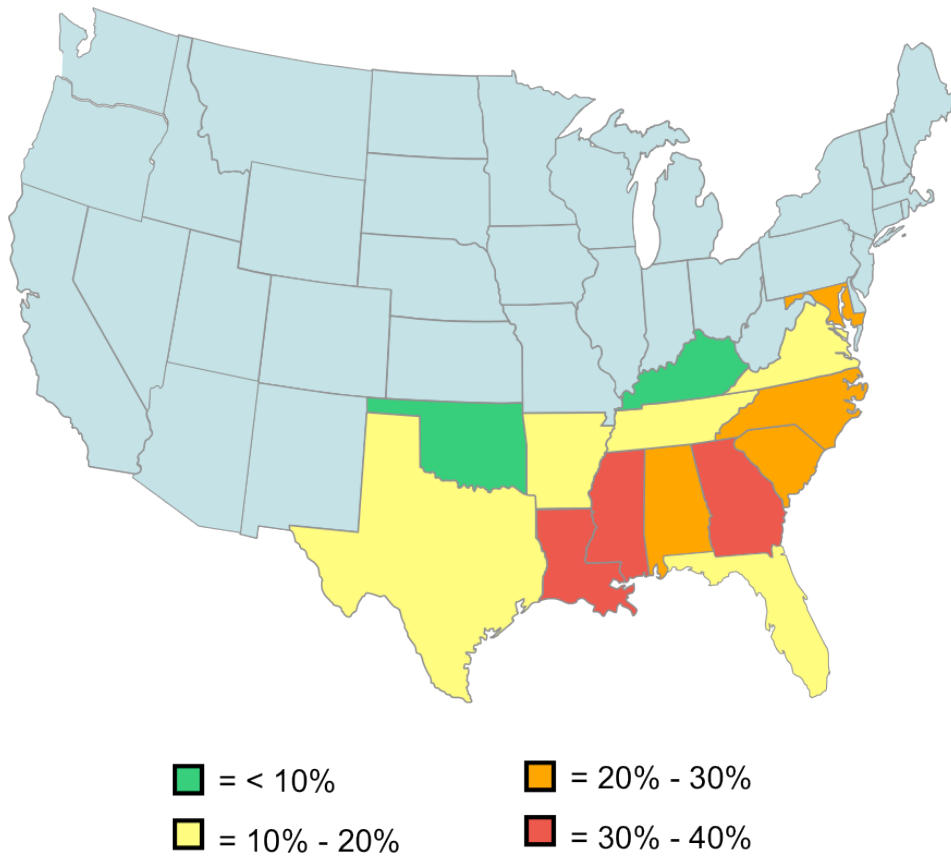


Figure 2. Statewide Percent African-American in 2010 Census

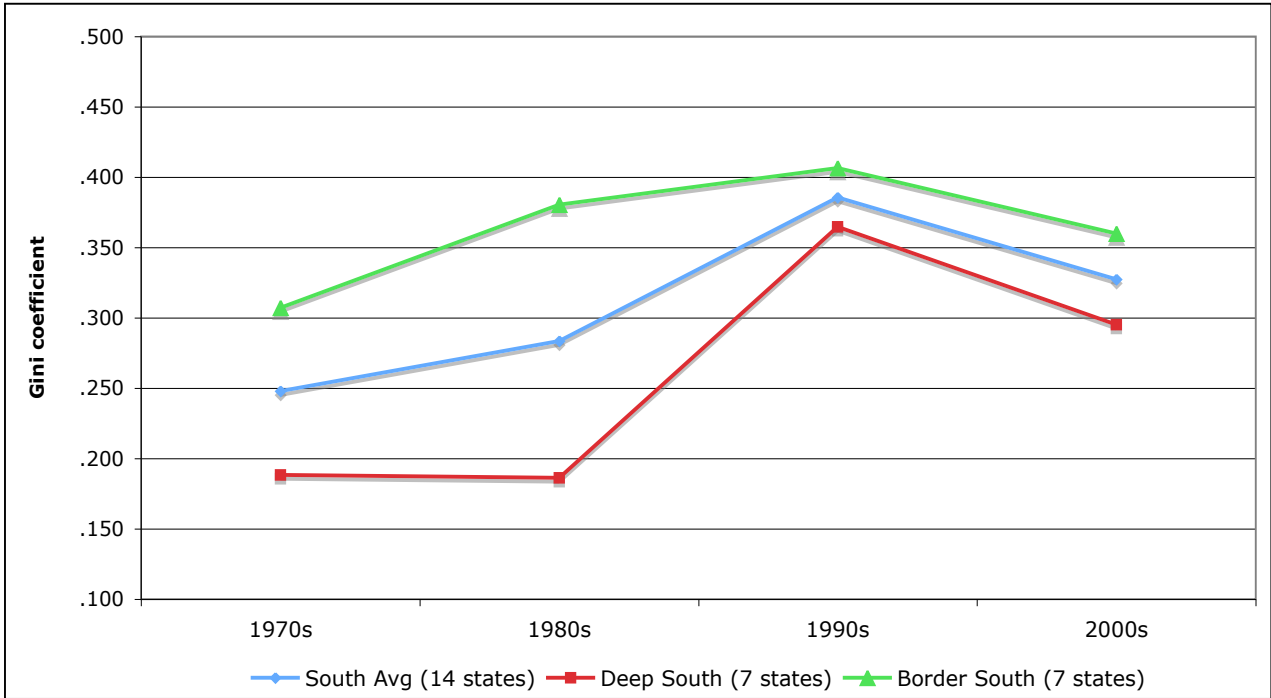


Figure 3. Gini Coefficient of Black Population Segregation across Southern state CDs by Decade

Here, we see that the rise in racial concentration following the VRA amendments was almost entirely confined to Deep South states, where the increase in Gini was seven times larger than in the Border South. Additionally, average racial concentration fell in the 2000s Border South to a level below that of the 1980s; it fell slightly in the Deep South, but still remained much higher than in the pre-VRA amendments era. Figures 4 and 5 below show the trends for each state within the two sub-regions.

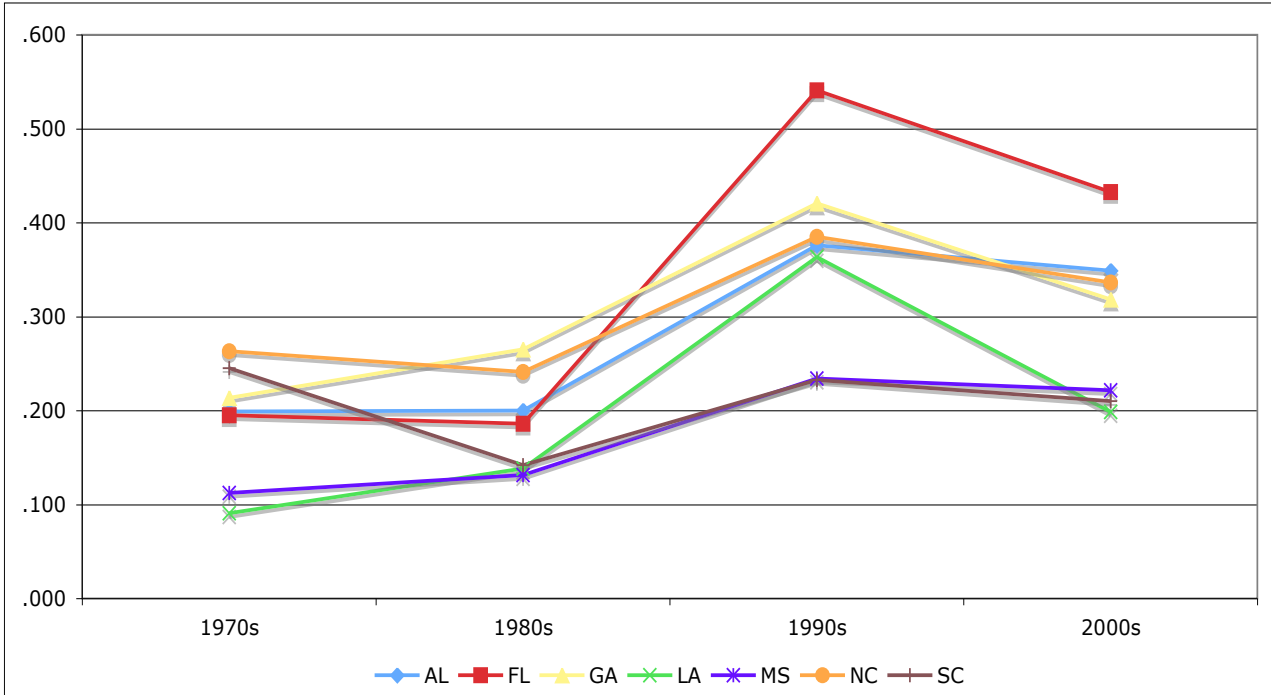


Figure 4. Gini Coefficient of Black Population Segregation across CD in Deep South

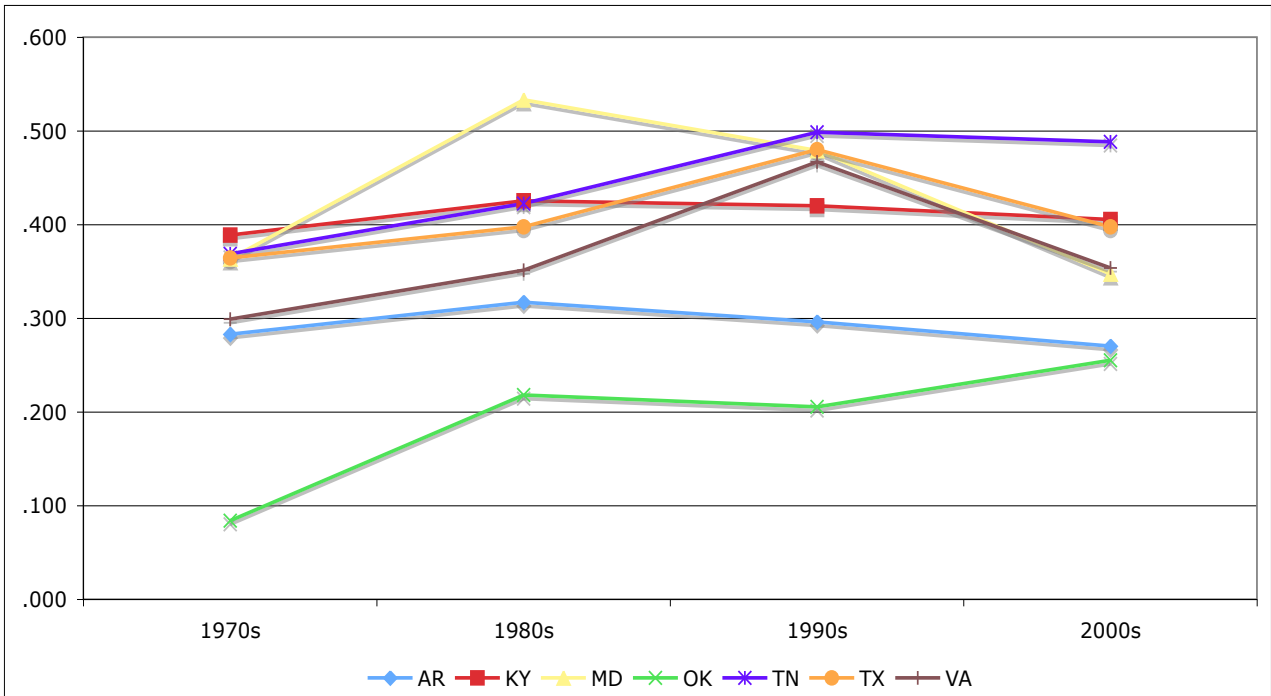


Figure 5. Gini Coefficient of Black Population Segregation across CD in Border South

The difference between Deep South and Border South states is clear. In every Deep South state, racial concentration within CDs rose sharply between the 1980s and 1990s. In some of these states, it fell back somewhat in the 2000s, but still remained higher than 1980s levels. In contrast, racial concentration rose in only three of the seven Border South states between the 1980s and 1990s, and in two of those three, it fell back to below-1980s levels in the 2000s. So it appears that the VRA amendments had an immediate effect on racial segregation within districts, but that this effect was largely confined to the Deep South.

Yet alternate explanations are possible: first, that these trends in racial segregation of districts are due to changes in state redistricting institutions, and second, that they are due to changing demographics. Table 3 addresses these concerns, showing that congressional districts in the Deep South became much more segregated following the VRA amendments, and that this change was much greater than in the Border South, even when controlling for variables such as black population and partisanship of districting institutions. Note that this table merely indicates where we should expect the VRA to have the most impact on congressional maps. It does *not* yet tell us what that impact should be on the partisan composition of delegation; this is explored in subsequent sections.

Table 3. Effects of Decade and Gerrymandering Institution on Gini Coefficient of Black Population Segregation within Congressional Districts Southern States, 1970-2000

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	<u>Model 4</u>
Deep South	-.094 † (.052)	-.104 * (.044)	-.085 † (.049)	-.131 ** (.040)
Post-VRA Amendments	.128 * (.056)	.089 ** (.025)	.043 † (.022)	.140 † (.074)
Deep South*Post-VRA	.106 ** (.033)	.109 ** (.031)	.095 ** (.033)	.085 † (.044)
1980's Decade	.034 (.026)	.041 † (.022)	-	.032 (.032)
2000's Decade	-.061 * (.025)	-.059 ** (.020)	-	-.053 (.033)
Percent Black Population	-2.409 (1.724)	-2.289 (1.452)	-2.082 (1.609)	1.652 ** (.608)
Percent Black Squared	4.652 (3.321)	4.512 (2.860)	3.144 (3.113)	-4.137 ** (1.314)
Democrat Gerrymander	.001 (.043)	-	-	-.009 (.052)
Bipartisan Gerrymander	-.010 (.057)	-	-	-.087 (.078)
Court Gerrymander	.029 (.039)	-	-	-.043 (.038)
Democrat Gerry*Post-VRA	-.039 (.054)	-	-	-.058 (.067)
Bipartisan Gerry*Post-VRA	-.042 (.073)	-	-	-.028 (.094)
Court Gerry*Post-VRA	-.029 (.041)	-	-	-.006 (.052)
State Fixed Effects	Included	Included	Included	Excluded
Constant	.614 (.221)	.602 (.183)	.632 (.203)	.211 (.070)
R ²	.876	.865	.824	.639
n	56	56	56	56

Notes: Entries are probit coefficients. The dependent variable is the Gini coefficient of African-American segregation of a state's congressional district map for each decade. Standard errors are in parentheses.
 † = p<.10; * = p<.05; ** = p<.01

Table 3 shows the results of four models of OLS, where the dependent variable is the Gini coefficient of the black population among congressional districts in a state. The data set, as outlined above, consists of the congressional maps at the start of the last four decades for 14

Southern or border states (the Confederacy plus Oklahoma, Maryland, and Kentucky). The controls are defined as follows:

- *Deep South*: Takes a value of 1 for the seven states on the interior of the confederacy, 0 otherwise.
- *Post-VRA Amendments*: Takes a value of 0 for 1970s and 1980s maps, and a value of 1 for 1990s and 2000s maps.
- *Decade*: Dummy variables for each decade. 1970s and 1990s are excluded categories.
- *Democrat, Bipartisan, Court Gerrymanders*: The redistricting institution responsible for the drawing the congressional districts; see Chapter 2 for further discussion of this coding. Republican gerrymanders, of which there are few, are the excluded category (there are no nonpartisan commissions in the South).
- *Percent Black*: The proportion of the state's population that is African-American according to the Census at the beginning of the relevant decade; also included in squared form to account for possible non-linear effect.
- *State Fixed Effects*: Included, but not shown, in the first three models. Virginia and North Carolina are the excluded states (one border, one deep South).

Model 1 includes all of the above controls. Model 2 excludes the gerrymandering institution variables and interactions. Model 3 excludes gerrymandering and individual decade controls. Model 4 excludes the state fixed effects.

The lack of effect of any of the gerrymandering variables is immediately apparent. It does not appear that different redistricting institutions had significant effect on segregation among congressional districts either before or after the passage of the VRA amendments. Thus, it seems that no institution did more or less to impede black representation before 1982, nor did any institution interpret the mandates of the VRA significantly different after this date.

As anticipated, the effect of black population is nonlinear.⁶ To the extent that there is an effect, it appear that districts are most segregated when the black population is somewhere in the middle. This is apparent from anecdotal evidence: When the population is very low, as in Oklahoma, no district has significant black population (*highest* % in Oklahoma in 2000s was 13%). And when the population is at its highest, as in Mississippi, even the most conservative districts have significant black population (*lowest* black % in Mississippi in 2000s was 23%). In

⁶ Note that the effect only appears when state fixed effects are excluded; otherwise, the effect of this variable is folded into the fixed effects.

states with moderate black population relative to other Southern states, the variance is at its highest, even prior to the VRA amendments. For example, black population in North Carolina ranged from 6% to 44% even in the 1970s, when consideration of black majority districting was not required; in the 2000s, this ranges was 4% to 49%.

In each specification, districts across the South became more segregated following the passage of the VRA amendments, evidenced by the significant positive coefficient for uninteracted “Post-VRA”. However, there is an even stronger effect when Post-VRA is interacted with Deep South, indicating that the VRA amendments had a much greater effect on congressional districting in those states than in the border South. The trend which was visually apparent in Figures 4 and 5 also shows up as statistically significant at $p < .01$ (two-tailed test) in all specifications with state fixed effects.

Arguably, changes in the black populations within these states may have had this effect rather than changes in the law. Two factors, however, argue against this alternate explanation.⁷ First, black population among Southern states is extremely highly correlated from decade to decade, as shown in Table 4. Second, note the statistically significant drop in Gini coefficient between the 1990’s and the 2000’s. Were these trends due to gradually changing demographics, we would expect monotonic change in Gini coefficients across decades.⁸ But the sharp uptick in the 1990s, followed by (not as sharp, but still significant) drop in the 2000s is much better explained by the change in the legal climate over the course of the 1990s.

Table 4. Correlation Coefficients for Black population by Year - Deep South and Border South states

	<u>1970</u>	<u>1980</u>	<u>1990</u>
% Black in 1980	0.994		
% Black in 1990	0.940	0.967	
% Black in 2000	0.897	0.933	0.985

⁷ In a future version of this chapter, I am hoping to get Gini coefficients on the distribution of black population by county. I will then show how this is relatively stable while Gini coefficients by CD change drastically as much stronger evidence for the VRA as causing the changes, rather than changing demographics.

⁸ In fact, a Census Bureau report (Iceland et al. 2002) shows declining levels of African-American racial segregations within states from 1980-2000 regardless of region or dimension of segregation measured, further arguing against a demographic explanation

There are two reasons why we see little impact of the VRA amendments in border South states. In some states, including Arkansas, Kentucky, and Oklahoma, the African-American population is not large enough to necessitate the creation of a black-majority district (the state fails the prong of the *Gingles* test). In others, including Maryland, Tennessee, and Texas the black population was already concentrated enough in an urban area that they naturally created majority-minority districts prior to 1990. That is, the state was already in compliance with the *Gingles* test before the VRA amendments had passed.⁹

Thus, it appears that we should expect a much greater impact of the VRA amendments in deep South states than in border South states, even controlling for redistricting institutions and black population. From this analysis we derive the following hypothesis: In the Border South states, our model from Chapter 2 should be sufficient to explain how redistricting will interact with partisan tides. However, in the Deep South states, an adapted model, accounting for a “VRA constrained” map, will be needed to explain those same interactions.

V. Adapting the model

In order to simulate the effects of creating majority-minority districts with a discrete minority population, this section presents a slightly altered version of the Gerrymandering model from Chapter 2 (hereinafter “the basic model”).¹⁰ In brief, the model functions as follows:

- The model simulates electing a legislature with n voters sorted into d single-member districts. Each voter has an ideology represented along a single-dimensional space. For the purpose of this and the previous chapter, $n = 435$ and $d = 15$.
- Voters are sorted based on a gerrymandering parameter γ , where γ represents the number of districts that are packed with ideologically homogenous voters. So when $\gamma = d$, every voter is sorted into a seat with similar voters, creating many “safe” districts (referred to as a “bipartisan” gerrymander). When $\gamma < d / 2$, voters from one ideological persuasion are packed into a small number of districts in an attempt by one party to win the remaining districts (referred to as a “partisan” gerrymander, with lower values of γ representing

⁹ In this manner, many border South states appear more similar to their neighbors in other regions, with inner-city districts electing black representatives in Chicago and Detroit prior to the passage of the VRA. The one exception here seems to be Virginia, which showed a large spike in Gini coefficient between 1980 and 1990 before dropping again in 2000.

¹⁰ The specification of the basic model can be found in the attached Conference Appendix.

greater aggressiveness by the gerrymandering party). There are no geographic constraints in the model.

- An election is held in which each district elects a representative, the party of which is probabilistically determined by function of the median ideology of the district and a national partisan tides parameter τ .¹¹

With the purpose of analyzing the effects of creating African-American majority-minority districts in Southern states, this chapter will rely on the following assumptions in altering the basic model:

- There exists a minority in the population that is both internally homogenous and separated from the rest of the population at one end of the ideological spectrum, while the majority population tilts in the opposite ideological direction.
- States are legally required to create a number of districts in proportion to the minority population such that the median voter in the district is a member of the minority.

Thus, the model probably more accurately portrays the creation of black majority districts in Southern states, as opposed to (e.g.) Hispanic majority districts (where the minority is not as ideologically extreme or unified) or black majority districts in urban areas of Northern states (where the white majority population is not necessarily as conservative).

Therefore, whereas the basic model assumed a population of voters with uniformly distributed ideologies ($U[-\frac{n-1}{2}, \frac{n-1}{2}]$), this chapter will adapt that distribution to a model state in which a 20% minority of the population has homogeneously extreme liberal ideologies. We do this by assigning 20% of the voters an ideology equal to the 90th percentile most liberal voter in the original model, while the remaining rightmost 80% remains the same. Thus, while the original model has 435 voters with an ideology range $U[-217, 217]$, the “discrete minority” population has 87 voters with ideology -174, and the remaining 348 voters are uniformly distributed $U[-130, 217]$. In other words both the median and the mean ideology of the

¹¹ The model also allows for variation in other parameters, such as the strength of partisanship and polarization that not varied as part of the analysis in either this chapter or Chapter 2.

population remains unchanged from the distribution specified in the basic model, but this distribution is more polarized.¹²

To model the influence of the VRA amendments, let us imagine the sort of gerrymander that a court would look most favorably on, one in which compliance with the VRA was the most important consideration. This paper posits that such a map would create the desired number of majority-black districts, while distributing the rest of the population as evenly as possible both throughout the remaining districts, and as part of the white minority in the black districts.¹³ We hypothesize that as the VRA amendments become more controlling as described in section IV, the pattern of partisan composition of a state's congressional delegation in response to varying tides will more closely resemble one generated from just such a map, and less closely resemble the maps from the basic mode. Where compliance with the VRA is less of a consideration, patterns will more closely resemble those outlined in Chapter 2.

I have written an alternate procedure to create such a "VRA compliant" gerrymander for a population with a discrete minority. This procedure also takes a γ gerrymandering parameter, but rather than using γ to create ideologically packed districts, the procedure creates γ "majority-minority" districts that will contain a bare majority of the ideologically extreme population, while all other voters are spread as evenly as possible among all other available district slots. For the state with 15 districts and a 20% minority, I have used gerrymander $\gamma = 3$ (proportionate minority districts). The result is that 3 districts have a minority (-174) median, while 12 districts have a median slightly right-of-center [21,32].

To generate predictions on the effect majority-minority districting on the partisan composition of the delegation under uncertain electoral conditions, the model was run for all values of γ as specified in the basic model and then compared with the $\gamma = 3$ "VRA-compliant"

¹² One would analogize the voters with ideology equal to -174's to be Southern blacks, the 30% from -130 to 0 to be moderate white democrats, and the 50% with positive ideologies to be former conservative Democrats who have become Republicans in recent decades.

The proportion of discrete minority voters in the population could easily be varied under the same rules. For example, with a one-third minority among 435 voters, members of the minority would be assigned ideology -145, while the majority would be distributed $U[-72, 217]$. Under this distribution, the VRA compliant gerrymander under $\gamma = 5$ would have 10 districts with more conservative medians than under $\gamma = 3$ (similar to a less aggressive Republican gerrymander under the original gerrymandering rules).

¹³ In doing so, I follow the intuition of the basic model that nonpartisan institutions will seek to create internally heterogeneous "competitive" districts in the absence of other constraints.

gerrymander as described above, under a range of partisan tides (τ) value. Other parameter values remain the same as shown in Table A1 of Conference Appendix

The results of this simulation are summarized in Figure 6 below.¹⁴ All of these previously simulated gerrymanders are relatively unaffected by the presence of the discrete minority, as none of the tides test are strong enough to generate a significant probability of a minority member voting Republicans; even at the extreme tides parameter $\tau = .24$, a minority member votes Republican only about 8% of the time (although this does not seem like an unrealistic depiction of African-American voting patterns). The VRA-compliant gerrymander (the purple line in Figure 6) looks similar to a Republican map, with Republican majorities during neutral and Republican tides, but a dramatic inflection point that quickly turns to Democratic majorities during certain Democratic tides.

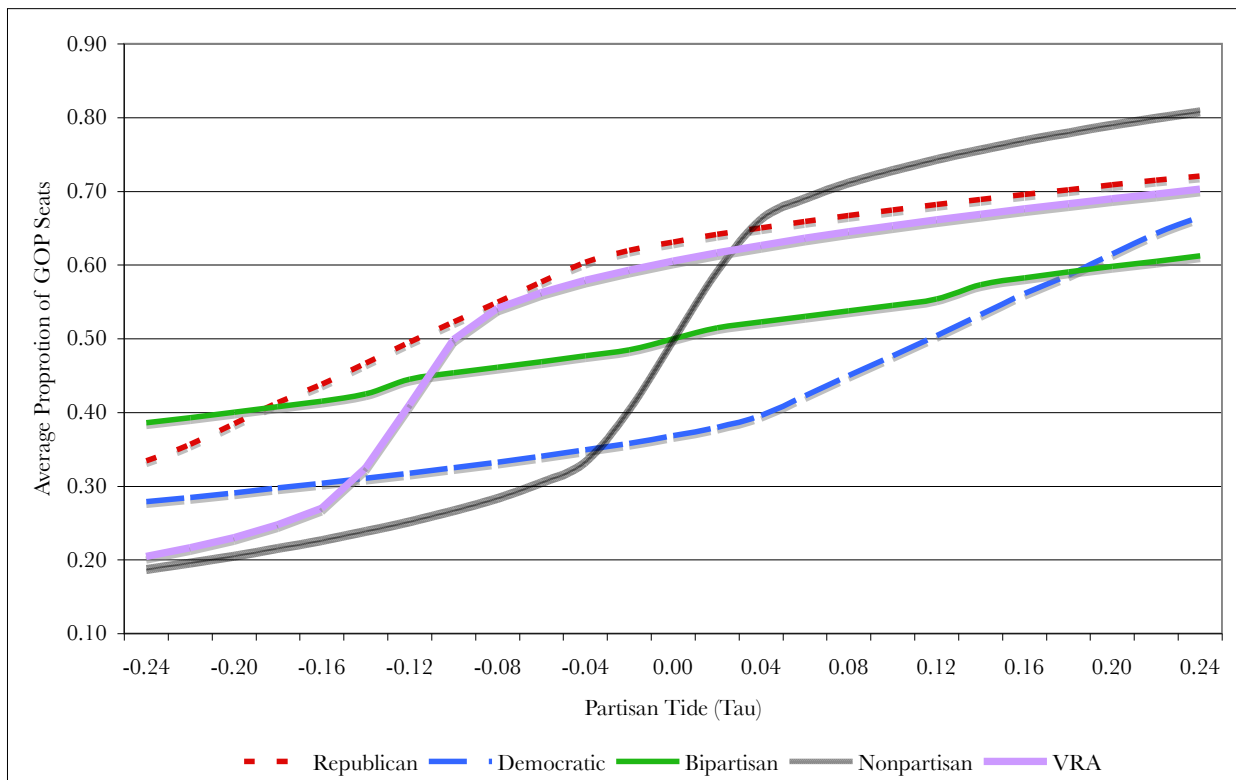


Figure 6. VRA-Compliant Gerrymander vs. Other Institutions (avgs. for partisan maps)

However, Figure 7 shows that VRA-compliant gerrymanders are not entirely identical to Republican gerrymanders. This figure contrasts the VRA-compliant map with the original Republican districting algorithm γ values 1, 2, and 3 (aggressive to moderate Republican

¹⁴ As with the analogous Figure A3 from the conference appendix, the Republican and Democratic lines are averages for γ values 1 through 5.

gerrymander) using polarized population with 20% minority. All three have Republican majorities in neutral tides, and inflection points at a certain Democratic tide, but the VRA map favors Republicans less than the equivalent Republican map. Note that the purple (VRA) curve is always below the yellow ($\gamma = 3$) and orange ($\gamma = 2$) curve. So the VRA map is similar to a Republican map, but somewhat less extreme and less favorable to Republicans overall.¹⁵

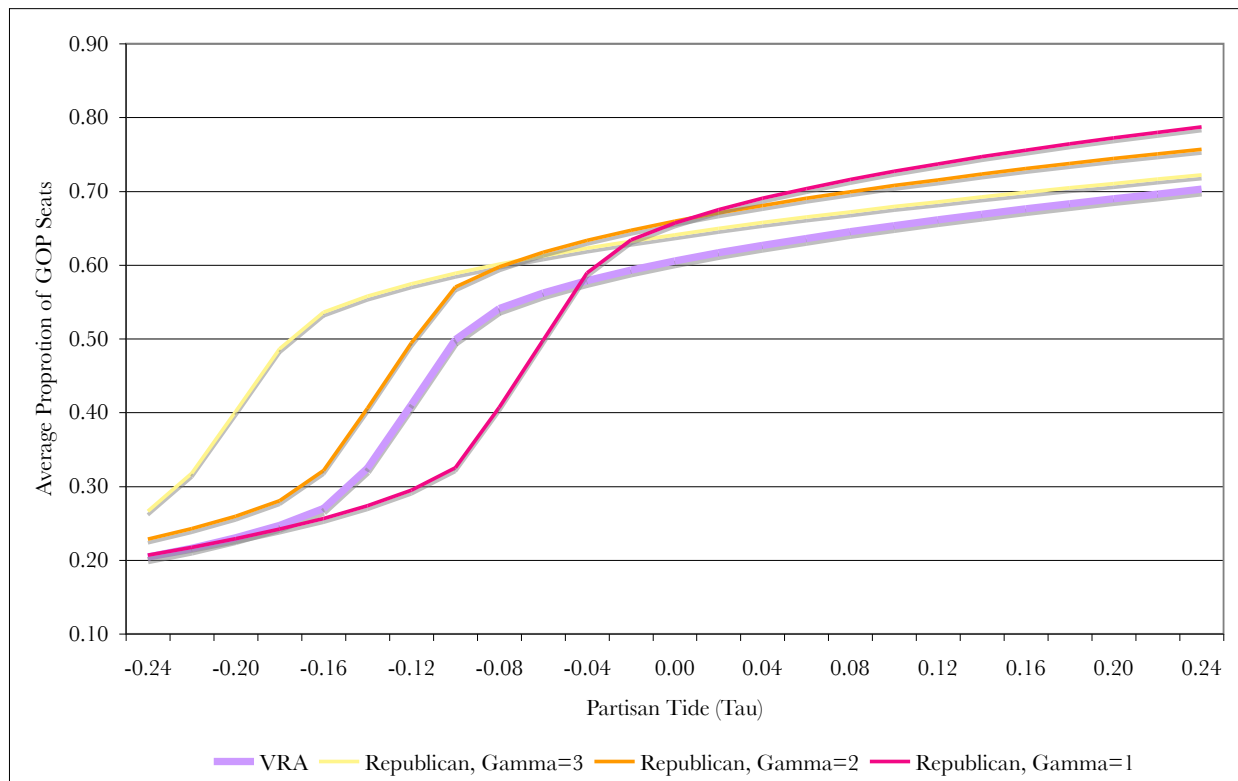


Figure 7. VRA-Compliant Gerrymander vs. Specific Republican Gerrymanders

The model thus predicts that as the VRA becomes more controlling in mandating majority-minority districts, patterns in delegation composition will come to more closely

¹⁵ Note that a couple of other gerrymanders with three majority-minority districts are also possible. For instance, both the regular bipartisan gerrymander and any Republican gerrymander with $\gamma \geq 3$ creates three districts that are entirely made up of members of the minority. Additionally, one could imagine a gerrymander that creates three majority-minority districts in the same way as above, but still manages to create additional districts in which the median voter is moderate Democrat (ideology between -130 and 0). Such a map would probably look more similar to a Democratic gerrymander, but would be both difficult to create in reality given the geographic mixing of moderate and conservative white Democrats, and would be extremely sensitive to even modest Republican tides. Indeed, the more polarized the state is (in the sense of both having a larger black population and a more conservative white population), the more difficult it will be for Democrats to draw districts favoring their party beyond those majority-minority districts required by the VRA.

resemble watered-down Republican gerrymanders. As noted in Section IV, the VRA amendments appear to be very controlling in “deep South” states (those with high black populations), and not particularly controlling in border South states (with lower black populations). Therefore, we should observe the following specific patterns among Southern states post-1990.

- In border states, delegation composition should interact with partisan tide in the same way as outlined in Chapter 2 / the Conference Appendix (e.g. low sensitivity under bipartisan gerrymanders, Democratic gerrymanders backfire under Republican tides).
- In deep South states with Democratic, court, or bipartisan gerrymanders, delegation composition should interact with partisan tides in way more resembling a Republican gerrymander (Republicans favored under neutral tides, but big swings toward Democrats under Democratic tides).
- In deep South states with Republican gerrymanders, the VRA-compliant map will still resemble a Republican gerrymander, although Republicans may be limited in how aggressively they can draw their map.
- Southern states with large Hispanic populations (especially Texas) may not be well-modeled here and may act unpredictably.

VI. Empirical Support and Case Studies

The effects of the VRA amendments predicted by the model can be even more briefly summarized as follows: (1) we expect the Border South to behave like the rest of the country; and (2) we expect the Deep South to look like Republican gerrymanders, regardless of actual gerrymandering institution, with the “aggressiveness” a function of the state’s black population.

This model is empirically tested using both a data set of congressional elections in the post-1991 period, and a series of case studies from Southern states in the most recent decade. As detailed below, the analysis run on the elections data set yields coefficients that strongly support the model in their direction and substantive size, but fail to reach traditional levels of statistical significance due to the limited data. This is reinforced by case studies, examining trends on an individual state level over a decade, which also strongly support the model.

I have run a probit analysis on the data set of all congressional elections in 14 Southern states, including a dummy separating the Deep South from the Border South, with the probability

of Republican win as the dependent variable.¹⁶ I have included the same controls for *Statewide Presidential Ideology* and *National Congressional Tide* as in Table 1, a control for statewide percent black, as well as each control interacted with the Deep South dummy. As we expect asymmetrical effects for tides sensitivity depending on tides direction, I only test using elections that were either close or Democratic waves, so that the direction of the prediction is clear, and also post-1990 (cycles after VRA amendments).¹⁷ Therefore, the analysis includes eight election cycles: 1992 and 1996-2008.

The model makes five predictions with respect to the coefficients in the regression:

- We expect (a) a positive constant on the *Deep South* dummy, as we expect a pro-Republican bias under neutral tides from VRA-constrained gerrymanders.
- Under neutral tides, we expect the effect of statewide ideology to be stronger in the border South, but the effect of percent black to be stronger in the Deep South, since this is what will determine the number of safe Democratic seats in this region. (i.e. when the election is close nationally, we expect the delegation to be more a function of how liberal or conservative the state is in the Border South, but a function of the number of majority-minority seats in the Deep South.) The would be indicated by
 - (b) a positive coefficient on *Statewide Presidential Vote* (more Republican states in the Border South elect more Republicans);
 - (c) a negative coefficient on *Statewide Presidential Vote*Deep South* (more Republican states in the Deep South *don't* necessarily elect more Republicans); and
 - (d) a positive coefficient on *% Black*Deep South* (a larger black populations in states where the VRA is very constraining leads to a greater number of safe Democratic seats).
- We expect the Deep South to be more sensitive overall to Democratic tides (positive coefficient on *National Congressional Tide*), since VRA-constrained gerrymander, similar to a Republican gerrymander, should be very sensitive to Democratic tides. This would be indicated by (e) a positive coefficient on *National Congressional Tide*Deep South*.

¹⁶ Data is clustered by congressional district crossed with decade as in Chapter 2.

¹⁷ We do not have enough data to independently test for Republican tides, but this section includes such an example in the 2010 case studies.

**Table 5. Probability of Republican Seat in Deep South vs. Border South
Democratic and Neutral Tides Elections, 1992-2008**

Pr (GOP wins seat)		
Deep South	0.634	*
	(.258)	
Statewide Presidential Vote	0.014	
	(.009)	
Statewide Presidential Vote*Deep South	-0.017	
	(.020)	
National Congressional Tide	0.012	†
	(.007)	
National Congressional Tide*Deep South	0.014	
	(.012)	
Statewide % Black	-1.713	**
	(.498)	
Statewide % Black*Deep South	-1.190	†
	(.634)	
Constant	0.035	
	(.149)	
n	1180	
R ²	0.174	

Notes: Entries are probit coefficients. The dependent variable is 1 if a seat was won by a Republican, and 0 otherwise. Standard errors, clustered by congressional district interacted with decade, are in parentheses.

† = p<.10; * = p<.05; ** = p<.01

As shown in Table 5 above, all the coefficients run clearly in the expected direction, with the expected comparative magnitudes. However, because of limits on our sample size, the coefficients for *Statewide Presidential Ideology*Deep South* and *National Congressional Tide*Deep South* are not statistically significant, suggesting that another type of analysis is necessary to bolster support for the model.

In the absence of sufficient data to achieve statistical significance on our key interaction variables, this section will explore small case studies in the way various Southern states reacted to partisan tides throughout a particular decade. We have now experienced two full decades of the congressional election results since the first cycle of redistricting following the 1982 VRA

amendments. We could thus look for evidence in both the 1990s and the 2000s. This section will focus on the latter, for several reasons.

One of the primary reasons the 2000s are chosen over the 1990s is that the extent to which states needed to comply with the VRA was unclear throughout much of the earlier decade. Cases such as *Miller v. Johnson* and *Shaw v. Reno* forced states to redraw districts repeatedly mid-decade in light of shifting court precedent. As shown in section IV, the 2000s saw some reversal in the concentration of black population in districts compared to 1990s, suggesting that states had a better understanding by then of how controlling the court requirements actually were. In the 2000s, two southern states, Georgia and Texas, redrew lines out of partisan motivation; such redraws can be encompassed within the model from Chapter 2, and will be treated in a separate subsection of case studies. The only map struck down in this decade for racial districting reasons were a few Hispanic districts in Texas in *LULAC v. Perry*, and the model will be admitted weak in predicting the effects of Hispanic-majority districting.

The 1990s also featured more instances of party-switching among Southern congressmen, especially following the 1994 election, and it is somewhat ambiguous how these instances should be treated in reflection on the model. Additionally, the 2000s decade shows the greatest variation in partisan tides conditions throughout the decade, including two election cycles that were close to even at the national level (2002 and 2004), two Democratic wave cycles (2006 and 2008), and one Republican wave cycle (2010).

The remainder of this section will look at trends in the congressional delegation of eleven southern states during this decade. As the model predicts different outcomes based on gerrymandering institution and extent of VRA control, these states have been divided into four categories:

- A. Border South with Democratic gerrymander: Arkansas and Tennessee
- B. Deep South with Democratic or bipartisan gerrymander: North Carolina, Louisiana, Alabama, Mississippi, and South Carolina
- C. Republican gerrymander: Virginia and Florida
- D. Mid-decade partisan redraws: Georgia and Texas

A. Border South / Democratic Gerrymander

Section IV has shown us that border states with less significant black populations were less constrained by the VRA amendments than states in the deep South with higher black

populations. We expect these border states to follow the patterns predicted in the previous chapter with respect to gerrymandering and partisan tides. Specifically, Arkansas (4 congressional districts and 15.6% African-American population in 2001) and Tennessee (9 CDs and 16.3% African-American) both had Democratic gerrymanders. We should thus expect the following under the predictions for Democratic gerrymanders in Chapter 2:

- Democratic majorities in neutral years 2002 and 2004
- Little change in response to Democratic waves in 2006 and 2008
- Large Republican gains in response to Republican wave in 2010

Arkansas

With Democrat Mike Ross's defeat of incumbent Republican Jay Dickey in 2000 in Arkansas's 4th district, the Democrats held a 3-1 advantage in the congressional delegation and veto-proof majorities in both state houses. The Democrats thus designed a map to keep this advantage in place, making only minor changes to the map they had drawn in the previous decade. With a minority population too low to mandate the creation of a majority-minority district, the state was free to spread the African-American population around, making each Democratic district between 17% and 24% black, but only including 2% blacks in the single Republican district.

From 2002 onward through the Democratic waves of 2006 and 2008, the Democrats maintained their advantage through a series of noncompetitive races, with every incumbent over four election cycles winning by at least 20%. While the Democrats held a majority of seats in neutral years, they were unable to take additional advantage of their own wave elections, failing to even field a candidate against Republican John Boozman in the 3rd district in 2008.

And by the 2010 election cycle, every district in Arkansas had Cook PVI of R+5 or greater and had been won by John McCain by at least 10% of the vote.¹⁸ It is thus not surprising that the map was extremely vulnerable to a Republican wave, and Democrats lost both the 1st and 2nd congressional districts badly in 2010, following the retirements of Marion Berry and Vic Snyder. Given the number of long-time Southern Democratic incumbents who were defeated

¹⁸ Partisan Voting Index (PVI), developed by Charlie Cook, is a measure of the relative partisan voting propensity of a state or congressional districts, expressed as percentage points more Republican or Democratic than the national average. A district with PVI R+5 would tend to vote 55% Republican in a tied national election. Note that this measure is half the analogous measure of "Statewide Presidential Ideology" used throughout the dissertation.

that night, it seems unlikely that Democrats would have been able to hold both seats even without these retirements. As predicted by the model, a Democratic gerrymander designed to produce a 3-1 Democratic advantage held stable in neutral and Democrat-favored environments, but backfired into a 3-1 deficit.

Tennessee

Following the 2000, Democrats held veto-proof majorities in both state houses in Tennessee, and set out destabilize the existing the 5-4 Republican-favored delegation. Although population of Tennessee was approximately one-sixth African-American, suggesting the need for a single majority-black district, such a district had already naturally been in place around Memphis since the 1970's, where in had been held first by Harold Ford Sr., and later his son. Thus, the VRA amendments did not add significant new constraint to mapmakers in this state. To achieve their goals, Democrats packed the already Republican held 3rd District with additional Republican counties from the 4th District, where Republican Van Hilleary was retiring to run for governor, and added more Democratic areas to the 4th, allowing Democrat Lincoln Davis to capture this seat and given Democrats the majority in the delegation.

By creating a map that already essentially maximized their representation in the neutral 2002 election cycle, Democrats were unable to seriously challenge Republicans in any of the districts they held at any point during the decade. Even in the largest Democratic wave of 2008, the four Republican districts were each won by John McCain by at last 25%, and no Democratic challenger in these districts received more than 27% of the vote.

But the Democrats had not built their own districts to be similarly robust to withstand the Republican wave in 2010. That year, Republicans not only won those two open seat by at least 20% each, but defeated incumbent Lincoln Davis by 18%, suggesting that, like in Arkansas, those seats would have fallen with or without the two Democratic retirements. The delegation was thus transformed from a narrow Democratic majority to a 7-2 Republican advantage. As with Arkansas, the predictions of the model from Chapter 2 appeared to hold true in Tennessee. A partisan gerrymanders bore fruit for Democrats in neutral years early in the decade, but did not allow them to take additional advantage of their own wave elections, and backfired in spectacular fashion when tides turned to Republicans.

B. Deep South / Democratic or Bipartisan Gerrymander

In contrast to border South states, section IV has shown that the VRA amendments radically altered congressional districts maps in the deep South following their passage, where a larger proportion of the population was African-American. In these states, we expect patterns to more resemble those predicted the “VRA-compliant” gerrymander modeled in section V of this chapter than the institutionally-dependent basic model. This difference should be particularly apparent in states that were both VRA-constrained and had maps drawn by Democrats or bipartisan institutions. In the 2000’s, such states included North Carolina (13 CDs and 21.4% African-American population in 2001), South Carolina (6 CDs and 29.4% African-American), Alabama (7 CDs and 25.9% African American), Mississippi (4 CDs and 36.2% African-American), and Louisiana (7 CDs and 32.3% American-American). This subsection will first focus on North Carolina individually and then discuss the remaining states collectively. For these states, we should expect the following under the predictions for VRA-compliant gerrymanders in section V:

- Republican majorities in neutral years 2002 and 2004
- Large Democratic gains in response to Democratic waves in 2006 and 2008
- Republican gains in response to Republican wave in 2010, restoring delegation approximately to 2002/2004 balance

North Carolina

Democrats controlled the redistricting process in the 2000’s facing a 7-5 Republican majority in the delegation and the prospect of an additional seat. But the party’s options were quite limited by the VRA and a series of Court cases that had held the North Carolina map in limbo for the entire previous decade.¹⁹ With a 21% black population, Democrats felt obligated to create two districts designed to elect African-American, but the geography of the state, combined with confusing Court precedent, made that difficult. In the end, the legislature created a new 13th district that would eventually elect the Democratic chair of the Senate redistricting committee Brad Miller, but kept much of the 1990s map, which had only recently been finally

¹⁹ In the last of five cases in the *Shaw v. Reno* series, the Supreme Court did not finally approve the North Carolina map, controversial for its attempt to create a narrow, winding second majority-black district, until *after* the 2000 election, at which point the decision was obvious moot (except to the extent that it informed the decisions of future districting efforts).

approved by the Court, the same. The map included one majority black district, one district closely balanced between blacks and white (but which was solidly Democratic and would elect a black congressman), but retained at least six clear Republican seats.

Thus, the delegation remained a 7-6 Republican majority during the close national elections of 2002 and 2004. But Democrats broke through when their own waves arrived, defeating one Republican incumbent in 2006 (Charles Taylor in the 11th District) and another in 2008 (Robin Hayes in the 8th) to take a 8-5 advantage in the delegation.

Perhaps surprisingly, Democrats lost only one of seats back in the Republican wave of 2010. But the model in Section V points why this results should not be so surprising: the same constraint of the VRA that prevented the Democrats from being able to craft an effective partisan gerrymander in the neutral election years also prevented a major backfire in the Republican wave. Compared to the rest of the South, Democrats probably still overperformed on election night in 2010 in North Carolina, but some of the credit might go the Court and the VRA curtailing the greed and aggression that lead to so many seats falling in states like Tennessee and Arkansas discussed above.

Trends in Smaller Deep South States

The four smaller states in the deep South (Alabama, Mississippi, Louisiana, and South Carolina), all had gerrymanders the were either bipartisan or determined by Courts in the 2000s. With high black populations (ranging from 26% in Alabama to 36% in Mississippi in the 2000 census), between four and seven districts, and an almost uniformly very conservative white population,²⁰ these state were the most constrained by the VRA, each almost forced to draw one heavily black district and leave the others tilting strongly Republican.

During the neutral tides era from 2003 to 2005, Republicans held a 16-8 advantage among the four states; each state's delegation looked similar, with one black Democrat, one veteran white conservative Democrat, and the remainder of seats held by white Republicans.²¹ As in other states with maps resembling Republican gerrymanders, Democrats made significant gains in these state as their tide rose starting in 2006. Unlike in other states, these gains were

²⁰ Exit polls showed 88% of white voters in Alabama and Mississippi voted for John McCain in the 2008 presidential election, compared with 64% of white voters in North Carolina and 60% of white voters in Virginia.

²¹ Counting Rodney Alexander, who switched from Democrat to Republican in the middle of 2004, as Republican.

made mostly between election cycles. In three consecutive special elections in early 2008, Democrats Travis Childers (Mississippi), Don Cazayoux (Louisiana), and Bobby Bright (Alabama) won in deep Republican territory following incumbent retirements.²² At the time of Obama's nomination, Democrats had narrowed their deficit in the most Republican states in the South down to two seats (11 to 13). However, this cadre of conservative white Democrats, old and new, was wiped out in subsequent Republican wave of 2010.

In the aftermath of the 2010 election, each of these states, with either bipartisan or court-drawn maps, reflected an almost perfect Republican gerrymander with $\gamma = 1$. Each state had one black representative elected from a heavily Democratic district (PVI's ranging from D+12 to D+25), with every other district represented by a white Republican (PVI's ranging from R+7 to R+24), and nothing in between. As predicted by the model, maximum constraint by the VRA amendments lead these states to look like Republican gerrymanders no matter who drew the map. And like typical Republican gerrymanders, even in the most conservative states, they too saw backfires, in a series of special elections where the tides favored the Democrats.

C. Republican Gerrymanders

The predictions from the model are similar with respect to Republican and VRA-compliant gerrymanders from the comparative statics perspective, with the caveat that the VRA may slightly dampen the success of Republicans in achieving the partisan goals. Therefore, it should be difficult to distinguish the effect of gerrymandering institution from the effect of VRA constraint in southern states with Republican gerrymanders. In the 2000s, these states included Florida (23 CDs and 14.2% African-American population in 2001) and Virginia (11 CDs and 19.4% African-American). For these states, the model predicts the following (essentially the same as those states in subsection B):

- Republican majorities in neutral years 2002 and 2004
- Large Democratic gains in response to Democratic waves in 2006 and 2008
- Republican gains in response to Republican wave in 2010, restoring delegation approximately to 2002/2004 balance

²² Whereas the Democratic wave probably crested with the election of President Obama in the rest of the country, the deep South probably saw this peak earlier in 2008, when the Bush administration was least popular, but before Obama's nomination caused the defection of some white conservatives.

Virginia

Republicans won majorities in both states houses of Virginia in 1999 and began the 2000s in complete control of the redistricting process. Entering the decade with an 8-3 majority already (including party switcher Virgil Goode), Republican sought to strengthen these eight districts by further packing the one black-majority district with additional Democrats, with the approval of the Bush-era Department of Justice. Thus, the VRA was not a significant constraint to Republican achieving their partisan goals. The result was easy victories for all incumbents by at least 20% in both 2002 and 2004, interrupted only by a somewhat more narrow Republican retention of an open 2nd District in 2004 following a retirement.

The Republicans built their gerrymander strong enough to withstand the moderate Democrat wave in 2006. But the floodgates broke open upon the more comprehensive wave in 2008, when Democrats defeated two incumbents and won an additional Republican-controlled open seat to take a 6-5 advantage in the delegation. The basic model from the previous chapter suggests that partisan gerrymanders have an “inflection point” as a function of their aggressiveness. Under moderate opposing partisan tides prior to the inflection point, moderate gerrymanders still yield significant majorities for the disfavored party. It appears that the inflection point in Virginia lay somewhere between the 7% national Democratic advantage in 2008 and their 10% advantage in 2008.

Of course, that tide reversed itself in 2010, and Republicans returned to an 8-3 majority in the delegation. But, consistent with the model, Republicans suffered a significant backfire under strong Democratic tides, but won the same number of seats under strong Republican tides that they had won in the close elections at the beginning of the decade.

Florida

With control of all branches of state government, Florida Republicans crafted perhaps the most enduringly successful partisan gerrymander of the 2000s decade. With a population that was 14% black and 17% Hispanic in the 2000 census, the requirements of the VRA amendments played into the Republicans’ hands, facilitating the creation of two majority black districts packed with Democrats, and three majority Hispanic districts, where the Cuban population was conservative enough to assume reasonably safe Republican seats, but not so conservative as to waste many Republican votes.

The Republicans won 18 of the 25 seats in Florida in 2002 and 2004, and only slightly improved on this figure during the 2010, where they took a 19-6 advantage in the delegating, both consistent with the model. Democrats rebounded somewhat during the interstitial Democrat waves, winning nine seats in 2006 and ten in 2008.

Despite the loss of three seats between neutral environments of 2002/2004 and Democratic waves of 2006/2008, it is somewhat remarkable that Florida Republicans maintained a significant advantage in the delegation despite living in a swing state under strong adverse tides. So how did Florida Republicans achieve this? Unlike their counterparts in states like Pennsylvania, Ohio, and Michigan, it appears that the Republican party drew their districts precisely to withstand a 10% Democratic national advantage. 2008 thus put them on the precipice of a more significant backfire, but one where they never quite lost their balance. The previous chapter detailed the “aggressive” Pennsylvania gerrymander, where Republicans counted on winning seats with PVI’s ranging from R+3 to D+4 in 2008, almost all of which were lost. By contrast, seats held by Republicans in 2008 included the 7th (Partisan Voting Index R+7), the 9th (R+6), the 12th (R+6), the 13th (R+6), the 15th (R+6), the 16th (R+5), the 21st (R+5), and the 25th (R+5). Although the Republican firewall did not hold everywhere (Democrats defeated incumbents in the 8th (R+2) and the 24th (R+4) in 2008), the clustering of eight districts around a PVI of R+6 suggests that the inflection point for a massive backfire in this map stood right around a 12% Democratic tide, slightly larger than the one achieved in 2008. So while the Florida gerrymander was very effective in winning majorities for Republicans under neutral tides, it was perhaps even more effective for its “moderation”, constructing districts that would hold even in the face of tides that were strong, but ultimately not too strong to anticipate.

D. Mid-Decade Redistricting

Two states in the South during this period defy easy categorization, both because their maps were redrawn in the middle of the decade, and because of special circumstances in that state: the efforts by Georgia Democrats to challenge conventional wisdom about the strictures of the VRA amendments, and the complications from a large and quickly growing Hispanic population Texas.

Georgia

Having drawn the archetypical example of a partisan “dummymander” following the 1990 census, Georgia Democrats went into the redistricting process in 2001 again in complete control of state government, but determined not to repeat their previous mistake.²³ Now aware of their limitations, the party implemented a more “moderate” partisan gerrymander that they hoped would yield them seven seats while ceding six seats to Republicans (these six seats all have PVI’s at last R +15). In doing so, they refrained from drawing the three or four black-majority districts that many legal and political professionals believed were required by the VRA; instead, they drew only two black-majority districts, and four additional black “influence districts” with 40-45% African-American population. As shown in Table 2 in section IV, the Gini coefficient on black concentration within CDs fell precipitously this decade, to an extent it was closer to the pre-VRA amendments level than it was in the 1990s.²⁴ Democrats followed the same principles in crafting their State Senate districts, leading to perhaps the most prominent redistricting court case of the decade, *Georgia v. Ashcroft*.

In *Georgia v. Ashcroft*, the five conservative justices sided with Georgia Democrats in upholding the “unpacked” black influence districts, with the four liberals dissenting on the side of Republicans and the Bush Department of Justice. The Democrats won the case, but failed at the ballot box; poor candidates in a couple districts lead them to win only five seats in 2002 and six seats in 2004, during which time they also lost control of the state government. Now in control themselves, Republicans redrew the map in 2005, strengthening their one vulnerable incumbent while attempting to drive out white Democrat Jim Marshall, but taking care to preserve five black-majority or black-influence districts. Republican hopes for Marshall’s defeat were temporarily stymied by the Democratic tides of 2006 and 2008, but he was finally taken down in the Republican wave of 2010. Yet, even in with the strongest tide at their backs, Republicans could not penetrate the black influence districts, running close races in two of them but still leaving a total of five seats to the Democrats.

Thus, the creation of black “influence” districts forced an almost even division of safe seats in the state for both parties, resembling not a partisan map, but a conventional bipartisan

²³ The maps Democrats drew in Georgia was designed to give them a 10-1 advantage in the delegation. Instead, following the 1994 Republican wave and a handful of party-switches, the Republicans controlled an 8-3 majority by the middle of the decade, with the only Democratic survivors representing black-majority districts.

²⁴ .318 in the 2000s compared to .421 in the 1990s and .265 in the 1980s.

gerrymander. The effect of such a gerrymander was to cap both the potential for Democratic gains during 2006 and 2008, and Republican gains in 2010.

Texas

As noted in Section V, the VRA-compliant adaptation to the model is probably a poor reflection of reality when it come to modeling the affects of majority-minority districting when the minority is not ideologically homogeneous. Thus, in Texas, with a current Hispanic population exceeding 35% (more than three times the black population), we should not expect the model to be particularly informative. For while Hispanics vote more consistently Democratic than white Southern voters, they are much less homogeneous in their political behavior than African-Americans, as shown through the 2010 Republican victories in the 23rd and 27th districts, both more than 65% Hispanic.

Along these lines, the political diversity of the Hispanic population probably enabled the Democrats to retain a majority of the delegation for as long as they did, considering the Republican tilt of the state. Unlike in states with large black populations, Democrats, in drawing their version of a map upheld by the courts in 2001, were able to draw eight majority Hispanic districts without wasting Democratic voting strength. In 2002, one of these eight districts was won by a Republican, while the remaining seven, with PVI's ranging from D+1 to D+10 (far closer than any black majority district), were won by Democrats. As this map did not force the ideological packing of liberal voters, it defies the prediction that VRA-constrained maps should resemble Republican gerrymanders, even when drawn by Democrats or courts.

Following their own mid-decade redistricting, Republicans took a 21-11 lead in the delegation in 2004, and withstood the subsequent Democratic wave with only a one seat loss. Republican losses here were limited because, even more so than in Florida, the Republican nature of the state allowed them to construct 20 safe Republican districts (in fact, the VRA constrained them from trying to win more seats). The *least* conservative of these 20 seats had a PVI of R+8 in 2008, suggesting it would have taken a Democratic wave at least 5% larger to make a dent. This is one state where VRA-constraints almost certainly hurt Republicans, forcing them to draw several Democratic-leaning seats (a few of which fell to Republican in the 2010 wave) where more Republican seats clearly could have been created in the absence or majority-minority requirements.

VII. Conclusion

The findings of this paper have largely confined themselves to situations with an internally-homogeneous and ideologically distinct minority population, a generally fair assumption when dealing with African-American voting patterns. Under these conditions, we find that maps heavily constrained by the VRA amendments do improve electoral outcomes for Republicans under neutral electoral tides, but possibly exacerbate the damage to Republicans under Democratic tides.

But the patterns in heavily Hispanic states do not follow easily classified patterns, and the story is likely to only become more complicated in the future. With Hispanics projected to become the plurality population in Texas by 2020, both the legal mandates of the VRA and their political implication become even blurrier. When a national minority both constitutes a statewide plurality and is less internally cohesive than the national minority (as suggested by the 2010 election results in Texas), both the motivation and the effects of minority districts might be called into question. As the Democratic voting strength of African-Americans remains as stable as ever, the model in this chapter should remain a strong predictor of the effects of majority-minority districting on states with large black populations. But over time, these states will and have become less important in the literature, the courts, and the electorate.

The remaining chapters will examine the effects of districting institutions on different measures of voter welfare. As this is also a crucial question in majority-minority districting (i.e. substantive vs. descriptive representation), we also incorporate the adapted model for VRA-constrained gerrymanders and bimodal populations with ideologically extreme minorities, addressing the last of the three questions presented at the top of this chapter.

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Conference Appendix: Chapter 2 Simulation Model Excerpt

To simulate the effects of redistricting institutions on electoral outcomes for use in this paper and subsequent chapters, I have built a model of electoral competition that allows for adjusting various parameters to reflect different conditions with respect to voter ideology, voter welfare, partisan trends, candidate polarization, and districting. The model is an adaptation of one originally developed in the 2005 paper “Parties in Elections, Parties in Government, and Partisan Bias” by Krehbiel, Meirowitz, and Romer (hereinafter the KMR model), modified and expanded to analyze gerrymandering and voter welfare.

The KMR model tackles the “analytically unwieldy”²⁵ issue of partisan influence on both election outcomes and legislative policy outcomes. It does so by alternately including and excluding several conditions relating to party and voter behavior, each of which amends common formal theory assumptions about voter rationality. My model, hereinafter the Gerrymandering model, involves three significant changes to the KMR model. First, it modifies the basic electoral function to allow more flexibility; second, it adds a new variable districting module as described below; and third, it adds a module for multiple measures of voter welfare, further detailed in Chapter 4.

Given a set of voters with ideologies along a single dimension and several other parameter values, the Gerrymandering model works as follows:

- 1) Gerrymander: Given a gerrymander parameter γ and a number of districts d , each voter is assigned a district and the median voter in each district is determined.
- 2) Candidate positions: Two candidates, one from the D party and one from the R party, run in the election in each district. Candidates position themselves symmetrically around the median voter in each district according to a polarization parameter δ . The particular value of the δ parameter is not relevant to the simulations in this chapter.
- 3) Election: An election is held in each district, where the probability of a given candidate winning is determined as a function of the median voter’s ideology, along with three other parameters as described below.
- 4) Legislature: This final module calculates the utility that each voter gets from the legislature under four different welfare standards.

²⁵ Krehbiel, Meirowitz, and Romer (2005), p. 113.

For a given set of parameter values, the model is iterated over several thousand Monte Carlo simulations of resulting legislatures to yield average partisan compositions (and average policy and voter welfare outcomes in other applications) under various electoral conditions.

For the purpose of this Chapter, only steps (1) and (3) are important, so they are detailed below. Detailed specifications for the remaining modules are given in Chapter 4.

Voter Ideologies: The model takes a sorted vector of voter ideology scores. I vary this distribution in subsequent applications of the model, but for the purpose of this paper, voter ideologies are assumed to be uniformly distributed ($U\left[-\frac{n-1}{2}, \frac{n-1}{2}\right]$) with a mean of 0 and a range of $n-1$ (where n is the number of voters).

Gerrymander: This module, entirely new to the Gerrymandering model, assigns all voters in the population to a district based on a gerrymandering parameter γ . There are no “geographic” or other constraints as to which district a voter can be assigned to. The γ parameter is an integer between 0 and d (the number of districts). γ represents the number of districts that will be ideologically packed, so if $\gamma = 1$, the n/d voters with the most liberal ideology will be assigned to a single district, while all other voters will be spread in a balanced way among all districts. I.e. the gerrymander will create one “safe D” district and the remaining districts will lean slightly toward the R party.

The result is that a value of $\gamma = 0$ represents a nonpartisan gerrymander where all districts are microcosms of the state as a whole to the greatest degree possible. A value of $\gamma = d$ represents a gerrymander where all voters are packed into districts with other voters of similar ideologies (representing a bipartisan gerrymander where incumbents of both parties are protected). For the sake of clarity, I assume that partisan gerrymanders are controlled by the R party, and that negative ideology values are preferred by the “D” party and positive ones preferred by the “R” party. Thus, $0 < \gamma < (d/2)$ represents a partisan gerrymander favorable to the R party in which voters with D-leaning ideologies are packed into γ districts, while moderate and R-leaning ideology voters are spread around the remaining $(d - \gamma)$ districts, giving a majority of districts a median voter favorable to R. Values $(d/2) < \gamma < d$ are also possible, but do not represent gerrymanders that would realistically be in the interest of any institution; I would expect the results from these gerrymanders to be similar to those under $\gamma = d$.

Election: This function takes an input of district medians, and values for three parameters α , ρ , and τ , and randomly generates a vector of legislator ideologies with d members. The probability that R wins a given district in the model is:

$$P_{Rwins}(x) = 0.5 + (\alpha - 0.5) \left(\frac{x}{K} + \tau \right)^{1/\rho}$$

As in the original KMR model, K is the absolute value of the ideological range of the voter universe, and acts to normalize this range to $[-1,1]$, while x is the ideology of the median voter. τ is the global partisan tide parameter which is the same across all districts; when τ is negative, an ideologically moderate ($x = 0$) voter is more likely to vote for the D candidate, while when τ is positive, the same voter is more likely to vote for the R candidate.²⁶ The α parameter, a holdover from the KMR model is a measure of the degree of ideological partisanship of the voting population (i.e. the weight that voters puts on partisan labels, as opposed to individual candidate ideology, in deciding their vote). In all simulations for this chapter, I assign $\alpha = 1$.

Finally, the ρ parameter, new to the Gerrymandering model, represents the extent to which the seat share in the electoral system is sensitive to the voting results. The original KMR model does not use this parameter, but might be thought of as a specific case where $\rho = 1$. Following the research of Taagepera and Shugart, I use $\rho = 3$ for the simulations in this paper, which increases the marginal effect of both partisan tides and changes in the median voter when the median is closer to 0, with little effect when the median is close to $-K$ or K . The choice of $\rho = 3$ was made because under a nonpartisan gerrymander, it will generate the cube-root seats-votes curve commonly observed in single-member district elections over the range of τ values.²⁷ Thus, when x and τ are 0, the election is won by each party 50% of the time; as x and/or τ increase, the probability of electing R increases according to a cube-root function. In cases where the function implies that the probability of R winning is greater than 100% (or less than 0%), the R candidate always wins (or the D candidate always wins).

²⁶ τ is designed to be analogous to the national partisan tide variable in the empirical section. Thus, $\tau = .10$ reflects a 10% partisan tides, or an environment where the 55th percentile most liberal voter votes Republican 50% of the time, or a 55%-45% GOP win in the national popular vote.

²⁷ Taagepera and Shugart (1989) provide a formal justification for both the use of $\rho = 3$ in this context, and for variations in ρ based on district size and electoral system. In response to *Davis v. Bandemer* (106 S.Ct 2797 (1986)), Browning and King (1987) advocate for the use of this “bilogit” model, with an unconstrained ρ , as a standard against which to measure the partisan bias in a gerrymander.

In the predictions section, I use this model to examine interactions between two parameters: τ (global partisan tides) and γ (the creation of ideologically packed districts through gerrymandering).

Simulation Results

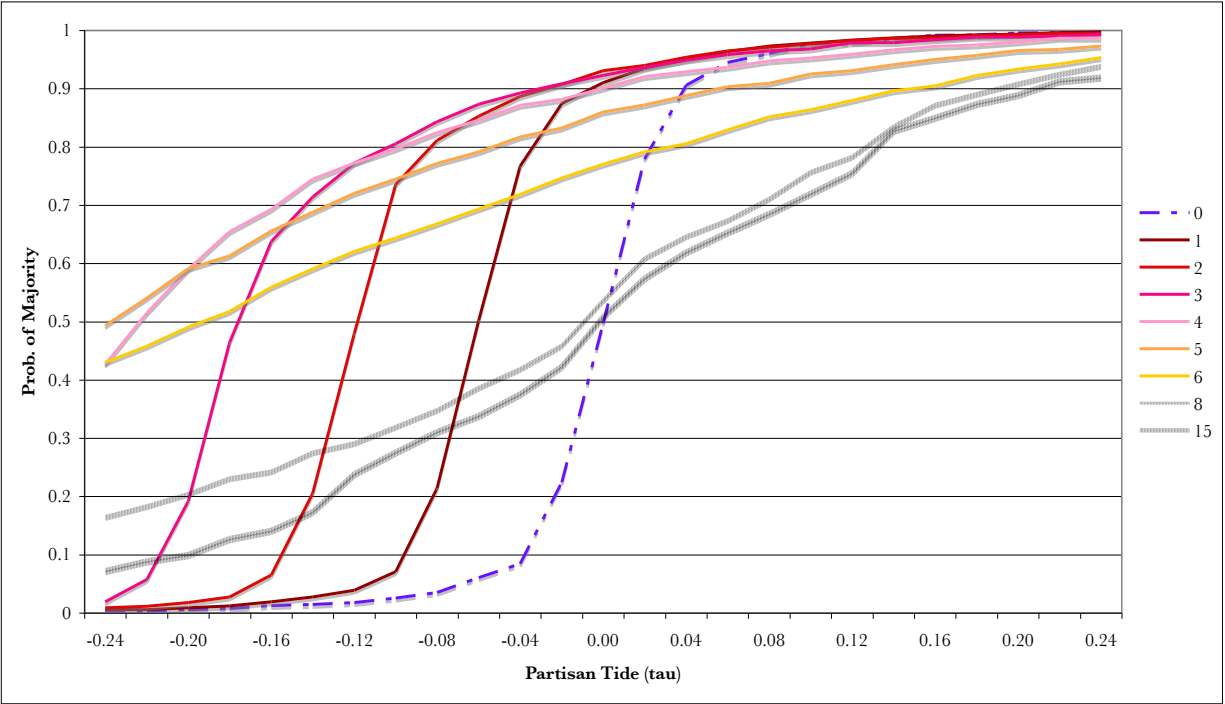
By manipulating values of τ and γ , the simulation yields predictions for how partisan results would change from different gerrymanders under different partisan tides. The simulations were run using the following parameter values:

Table A1. Simulation Specifications

Parameter	Meaning	Value
n	number of voters	435
d	number of districts	15
x	voter ideology	$\sim U_{\text{discrete}}[-217,217]$
ρ	Vote/seat responsiveness	3
α	ideological partisanship	1
δ	candidate polarization	0 (not used in this chapter)
τ	partisan tides	Varies: -.24 to .24
γ	gerrymander (packed seats)	Varies: 0 to 15
s	simulation iterations	10,000 each value

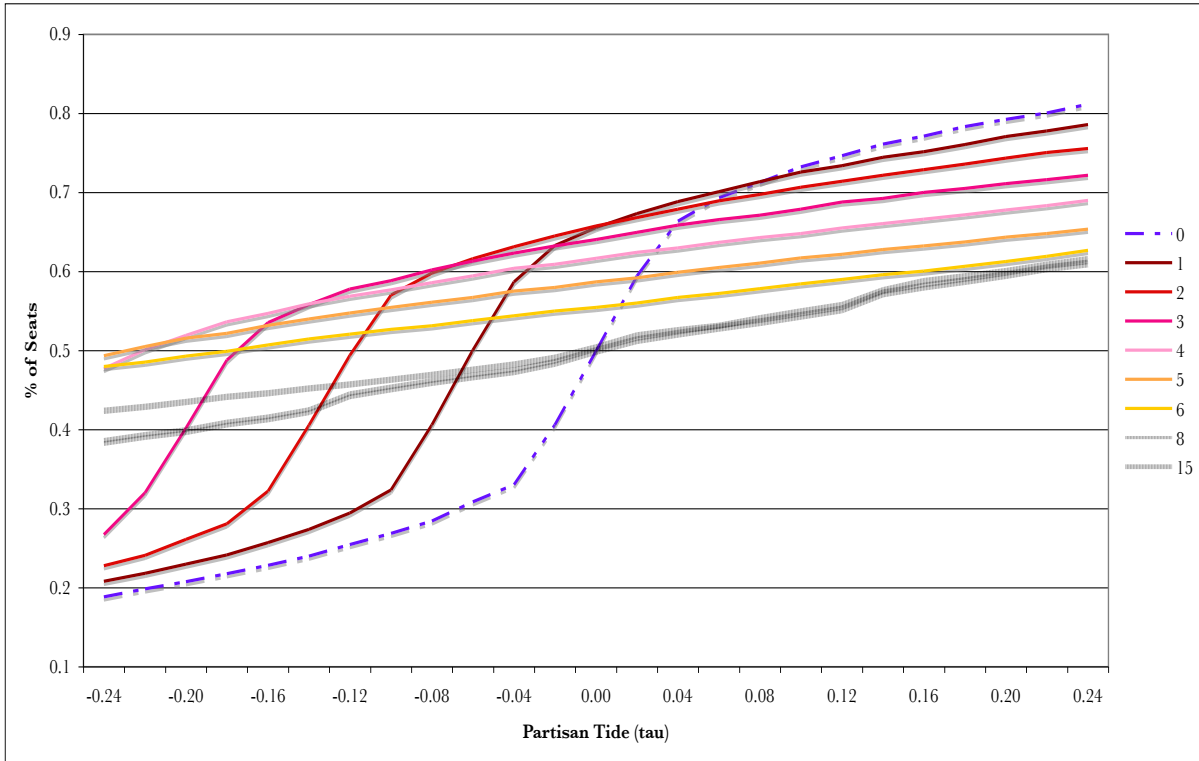
This is 10,000 iterations for each of 25 values of τ , ranging from -.24 (representing strong Democratic tides), -.10 (moderate D tides), -.04 (weak D tides), 0 (neutral tides), .04 (weak Republican tides), .10 (moderate R tides), to .24 (strong R tides), interacted with all values of γ from 0 to 15. For each combination of parameter values, I recorded the probability R would control a majority of seats, and the mean proportion of seats won by R. Figures A1 and A2 respectively display these results, with τ along the x-axis, and each line representing a value of γ . For ease of display, I have excluded most γ values from 7 to 14 from the charts; these lines all look very similar to the $\gamma = 8$ line.

Figure A1. Simulated Probability of Republican Control by γ Value



Note: Lines represent values of γ , y-axis is the proportion of times over 10,000 simulation that R party won a majority of seats, for each particular value of γ and τ .

Figure A2. Simulated Share of Republican Seats by γ Value



Note: Lines represent values of γ , y-axis is the average proportion of seats won by the R party for each particular value of γ and τ .

We see the following results:

Nonpartisan Gerrymander ($\gamma = 0$; purple line): Under the non-partisan condition, where every district is ideologically balanced, legislative composition is very sensitive to partisan tides. Even in the case of weak tides, the party that the tides favor is almost 90% likely to win a majority of seats. With strong tides, the favored party wins more than 80% of the seats, and a majority in every simulation.

Bipartisan (safe seats) Gerrymander ($\gamma = 14-15$; green line): Legislative composition is *not* very sensitive to partisan tides under the condition where all districts are ideologically packed. Both parties win close to 50% of seats in the case of weak tides, and have a reasonable chance to win a majority. In the case of strong tides, the favored party wins a majority more than 90% of the time, but the disfavored party still wins almost 40% of the seats.²⁸

“Aggressive” GOP Partisan Gerrymander ($\gamma = 1-3$; red lines): These gerrymanders pack the most liberal voters into just a few districts, leaving the remaining districts slightly unbalanced in favor of the R party. This condition yields the best results for R when tides favor R or tides are neutral. But when tides go against R, these maps backfire and yield a much lower seat total for R than even a bipartisan map. Note that under the most aggressive gerrymander ($\gamma = 1$), the probability of control drops from 90% under neutral tides to under 10% with moderate Democratic tides, while the seat share drops from 65% to just over 30%. However, when tides *favor* R, the party cannot really make a mistake in gerrymandering too aggressively; their average seat share continues to rise under every “GOP tides” condition as γ falls, all the way to $\gamma = 1$.

“Mild” GOP Partisan Gerrymander ($\gamma = 5-7$; orange/yellow lines): In these conditions, the R party is less ambitious and tries to assure the greatest probability of winning a small majority of seats. R performs well under these maps in all electoral environments; with $\gamma = 6$, R not only wins a majority of seats under neutral tides 80% of the time, but R even has a 40% chance of

²⁸ Note that by tautology, the $\gamma = 14$ gerrymander condition is identical to $\gamma = 15$ condition.

control under strong Democratic tides. The benefits continue to rise for R as the gerrymander gets more aggressive under weak Dem tides, but fall off quickly under strong Dem tides.

Irrelevant Gerrymander ($\gamma = 8-13$; light green line): As anticipated, these gerrymanders yield results similar to $\gamma = 15$.

As expected, these results show that the bipartisan regime (expected in the case of split legislatures) is very predictable and not sensitive to tides, while the nonpartisan regime (expected from commissions) is highly volatile. The simulation also demonstrates the conditions for partisan “backfires”: very aggressive efforts aimed at confining the opposing party to as few seats as possible, combined with adverse partisan tides. In such cases, the “mild” partisan gerrymander often yields the best outcome for the party in control, while the bipartisan gerrymander yields the best outcome for a party in the case of unfavorable tides.

Predictions: Partisan Bias

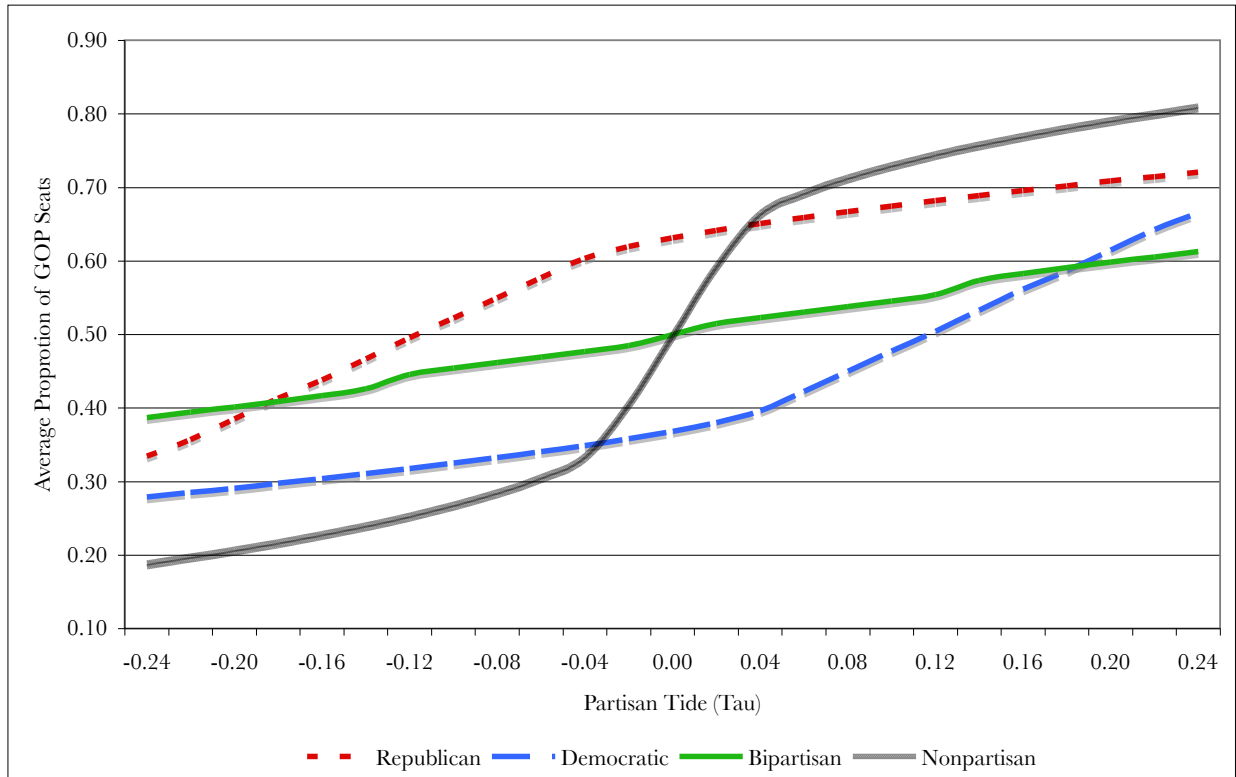
The Gerrymandering model provides us with predictions about the general effects that different motives of various redistricting actors have on partisan composition and competitiveness, regardless of the specific tactics used by these actors. Thus, in moving toward empirical testing, the data set used identifies the institution or parties drawing the district lines without identifying any details about the characteristics of individual districts.

At the same time, movement from the model to testing requires recognitions of a few additional details. While the model allows for partisan maps to vary in “aggressiveness” (changing the inflection point at which the map backfires), my data does not include such a measure. Thus, to transform the raw simulation results into empirical predictions with respect to partisan maps, we might average over various levels of aggressiveness shown in the model. Additionally, the model assumes a state population with partisan balance, in the sense that the state median voter will vote for each party with equal probability when the tides parameter is zero; it is thus most analogous to a “swing state” at the national level. We would thus expect to see some deviation from the predictions of the model in states that strongly tilt toward one party.

Nevertheless, the model provides us with predictions on two important aspects of redistricting research: partisan balance and competitiveness. With respect to partisan balance, the predictions of the model are straightforward, as shown in Figure A3. This figure takes an

average of moderate-to-aggressive partisan maps for both parties ($\gamma=1$ to $\gamma=5$), along with the results from Figure 8 with respect to bipartisan and non-partisan maps. This yields the following predictions:

Figure A3. Simulated Average GOP Seats by Redistricting Institution (Summary)



First, given neutral conditions for national tides and state partisanship:

- States with partisan Democratic maps will yield *fewer* Republican seats than bipartisan or nonpartisan maps
- States with partisan Republican maps will yield *more* Republican seats than bipartisan or nonpartisan maps

Second, given neutral conditions for state partisanship, but varying national tides:

- States with bipartisan maps should show *less* sensitivity to tides in the partisan balance of their delegations than nonpartisan or partisan maps
- States with nonpartisan maps should show *more* sensitivity to tides in the partisan balance of their delegations than partisan or bipartisan maps
- State with partisan maps should show *more* sensitivity to tides when tides are adverse to their party than when tides favor their party

In all cases, the model is not designed to generate a prediction with respect to court-drawn maps.