GAINS AND LOSSES: HOW CONGRESSIONAL APPORTIONMENT SHAPES PARTISAN AND MINORITY REPRESENTATION

by

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(Under the Direction of Anthony J. Madonna)

ABSTRACT

This thesis investigates how congressional apportionment influences partisan control and minority representation in the U.S. House of Representatives. Using redistricting simulations across six states—Montana, North Carolina, Oregon, Illinois, Michigan, and West Virginia—it examines how gains or losses in House seats shape electoral competitiveness and descriptive representation. Grounded in theories of democratic representation, the analysis tests three core hypotheses: that seat gains favor dominant parties, that minority representation improves when redistricting reflects demographic change, and that the fixed size of the House intensifies representational disparities. Using data from the U.S. Census, election results, and DRA2020 mapping software, the findings reveal that partisan actors frequently exploit apportionment changes to entrench power, often to the detriment of minority communities. Results also show that independent redistricting commissions moderate partisan effects. The thesis concludes that equitable representation in the 21st century requires institutional reform and renewed attention to mechanics of apportionment and redistricting.

INDEX WORDS: Apportionment, Gerrymandering, Minority, Partisan, Redistricting, Representation

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CHAPTER 1

Introduction

Representative government is the foundation of American democracy, and the structure of representation directly affects its legitimacy. From the Constitutional Convention to today, congressional apportionment has remained central. In *Federalist 10*, James Madison warned of factionalism and emphasized the importance of proportional representation: "Representatives must be raised to a certain number, in order to guard against the cabals of a few; and that…must be limited to a certain number, in order to guard against the confusion of a multitude." Today, apportionment is deeply political, shaping whose voices are heard and whose votes count most. Apportionment has been shaped by major events in U.S. history, including the Three-Fifths Compromise, the Fourteenth Amendment, the Permanent Apportionment Act of 1929, the Voting Rights Act of 1965, and Supreme Court rulings such as *Baker v. Carr* (1962) and *Wesberry v. Sanders* (1964). These milestones show how apportionment can empower or marginalize communities, particularly minorities. Since the 1930s, each Census has redistributed 435 House seats based on population shifts. Though the process may appear neutral, it is closely tied to partisan strategies and racial dynamics. Research shows that apportionment shifts shape policy, funding, and political debates (Gaynor and Gimpel, 2021). This thesis highlights the need for reforms aligning institutions with democratic principles.

As political polarization intensifies, the stakes of who gains or loses representation have only grown. The apportionment process now intersects with demographic realities and contested narratives about fairness, legitimacy, and power. Understanding this intersection is essential to

evaluating the health of representative democracy in the 21st century. States with rapidly changing populations—especially in the South and West—face the greatest tensions between demographic growth and institutions inaction. In many cases, the communities that gain a population do not gain power. The disconnect between numerical growth and political voice reveals deeper questions about institutional adaptability and democratic fairness. Once a routine constitutional mechanism, apportionment has become a flashpoint in the broader struggle over democratic inclusion.

1.1: Why Representation Matters

Representation translates the public will into legislative and policy outcomes. Without it, Congress risks becoming detached from those it serves, leading to alienation, distrust, and weakened legitimacy. Representatives should bridge competing interests and ensure all voices are heard, but in practice, they often reflect only the majority — especially in safe districts. Minority representation raises important questions: Do minorities only gain influence when they form a majority, or can they influence districts to represent their interests without numerical dominance? Research shows a positive relationship between the proportion of minority voters and the representation of their interests (Cameron et al., 1996). This thesis builds on that question by examining how congressional apportionment interacts with racial dynamics — specifically, whether states experiencing minority population growth respond by creating majority-minority districts or suppress representation through packing and cracking (Cottrell, 2019). These questions are especially relevant in states with diverse populations and entrenched political dynamics, where the design of districts can determine who wins elections and whose needs are heard. Minority communities often face a double burden: they must first grow in numbers and then fight to convert that growth into political power. Representation, in this sense, is not

guaranteed by demographic trends alone—it must be enabled by institutional design and political will. Even large and growing populations can remain underrepresented in legislative bodies without intentional safeguards.

Fair representation is not only a democratic principle but essential to political stability and public trust. Yet unequal representation has persisted due to gerrymandering and voter suppression. These disparities affect which communities receive resources, legislative attention, and effective governance. Marginalized communities without proportional representation are often excluded from policymaking, limiting their influence and deepening inequality. For example, American Indians and Alaska Natives, alone or in combination, comprise 9.7 million Americans (Sanchez-Rivera, 2023), but only five serve in the 118th Congress — four in the House and one in the Senate (Manning, 2024). This stark mismatch between population size and political power illustrates how structural barriers continue to undermine the principle of equal representation in practice. As the population grows and diversifies, ensuring fair representation becomes increasingly tricky. Between 2010 and 2020, the U.S. population rose 7.4%, from 308 million to 331 million. Despite this, the number of House members remained capped at 435. By the 2030 Census, the population is projected to reach 345 million (Sanchez-Rivera, 2023), meaning nearly 800,000 Americans will be represented by a single member of Congress. This thesis examines current and future apportionment challenges — particularly how dominant state parties and minority groups may gain or lose influence depending on seat reallocation. As the nation becomes more racially and ethnically diverse, the legitimacy of representative democracy will increasingly depend on whether Congress reflects the full spectrum of its constituents. In this context, evaluating apportionment is not just academic—it is essential to ensuring that American democracy lives up to its representative promise.

1.2: Theory, Research Question, and Hypotheses

This thesis draws on theories of democratic representation, especially the distinction between descriptive and substantive representation (Mansbridge, 1999). Descriptive representation refers to elected officials whose identities and experiences reflect those of their constituents. Substantive representation focuses on the degree to which officials advocate for constituents' interests. The thesis also draws from The Federalist Papers, court decisions, and academic interpretations of apportionment. It follows the Congressional Research Service's definition of apportionment: the process of redrawing House district boundaries based on population. This process involves four main components: (1) population size, (2) the fixed number of House seats, (3) the number of states, and (4) how states allocate and redraw districts after receiving their federal seat assignments (Crocker, 2015). These components carry profound implications for political power and representation across an increasingly diverse electorate.

Apportionment has two primary consequences: it redistributes political power across states and shapes opportunities for minority representation (Katz, 1971). While one branch of theory focuses on fairness in power distribution, another interrogates whether minority groups achieve adequate legislative influence. Together, these perspectives form the basis for this thesis's central research question: **To what extent does congressional apportionment shape partisan and minority representation in the United States?**

This question highlights the stakes of population change and partisan redistricting, especially ahead of the 2030 Census. To explore this relationship, the thesis advances three hypotheses:

> **H1. Partisan Gains Hypothesis**: States gaining seats will see increased partisan advantage for the party already dominant in those states, thereby consolidating existing power structures.

H2. Minority Representation Hypothesis: States with growing Black and Hispanic populations are more likely to see increased descriptive representation in Congress, measured by the number of majority-minority districts and minority officeholders. However, this effect depends on how districts are drawn—whether by partisan, independent or hybrid commissions.

H3. Disproportionate Impact Hypothesis: The fixed size of the House amplifies representational disparities between large and small states, disproportionately disadvantaging minority and Democrat-leaning constituencies.

These hypotheses are grounded in existing literature on apportionment's partisan and racial impacts. The second hypothesis draws specifically on theories of descriptive representation (Mansbridge, 1999), which suggest that demographic growth—if reflected in district lines—should lead to increased minority influence. Yet this link is conditional: institutional design, redistricting strategies, and political control mediate the connection between demographics and representation. By linking these frameworks with empirical analysis, the thesis contributes to scholarly debates on representation and institutional reform. It expands the conversation by examining how population growth and a fixed House size produce unequal outcomes, raising pressing questions about whether to expand Congress, revise redistricting, or introduce new electoral safeguards. Ultimately, this thesis underscores the importance of apportionment in shaping the future of American democracy. As the gap between population growth and political representation widens, the consequences for fairness, equity, and democratic legitimacy become more pronounced. Understanding how the process reinforces or challenges existing inequities is essential—especially as majority parties in many states may use redistricting to entrench power, regardless of affiliation.

1.3: Overview of Methods and Research Design

To evaluate how congressional apportionment shapes partisan and minority representation, this thesis uses both quantitative and spatial methods. It draws on U.S. Census

Bureau data from the 2020 Census, population projections for 2030, and mapping tools such as Dave's Redistricting (DRA2020). The thesis uses mapping simulations from DRA2020 to supplement these findings by visualizing how district changes alter representation. The chapters are organized as follows: **Chapter 2** explores the evolution of representation and redistricting; **Chapter 3** outlines the methodology; **Chapter 4** analyzes three states that gained a seat (Montana, North Carolina, Oregon) and three that lost one (Illinois, Michigan, and West Virginia). These findings contribute to academic debates on representation and offer insights for policymakers navigating the challenges of the 2030 Census and future redistricting cycles.

As the 2030 Census approaches, the need to understand how congressional apportionment shapes political outcomes has never been more urgent. The consequences of how seats are distributed will not be confined to partisan advantage—they will determine whether historically underrepresented communities gain meaningful voice or remain marginalized. Amid rising calls for structural reform, questions about how well congressional districts reflect America's demographic evolution have become central to broader debates about democratic legitimacy. This thesis responds to that urgency by examining how apportionment interacts with race, party control, and district design in ways that often reinforce existing inequalities. While some scholars have turned to statistical modeling to analyze these relationships, this project emphasizes visual simulations and case-based comparisons as a more accessible and intuitive approach to evaluating representational equity. By focusing on how different redistricting scenarios unfold across varied political landscapes, the thesis highlights both the potential for reform and the enduring obstacles to fair representation. In doing so, it offers a clearer view of how the rules of the game—not just the players—shape the health of American democracy.

CHAPTER 2

Literature Review

Today, representation is a central issue in both theory and practice. Apportionment distributes political power among states and determines the structure and equity of representation. Its primary goal is to restore population equality following demographic changes (Gaynor and Gimpel, 2021). Though often treated as a procedural task, apportionment has deep political implications—shaping both partisan advantage and minority inclusion. From the Three-Fifths Compromise to modern redistricting, apportionment reflects the interplay of legal, demographic, and political forces (Ballingrud and Dougherty, 2018). Understanding this evolution is essential to grasp how historical compromises and contemporary strategies continue to influence who has a voice in American democracy. Moreover, as representation increasingly serves as a proxy for access to power, the rules governing apportionment carry consequences that extend far beyond electoral outcomes. They influence the credibility of political institutions, the responsiveness of public policy, and the broader perception of legitimacy in a pluralistic society.

Theoretical debates have long grappled with fairly representing a growing and diversifying nation. Legal interventions, including *Baker v. Carr* (1962) and *Wesberry v. Sanders* (1964), attempted to align apportionment with democratic principles (Lucas, 1963). Yet controversy persists. Political actors leverage apportionment to secure partisan advantage, further complicating efforts toward fair representation. The issue is especially timely as the United States prepares for the 2030 Census. The University of Virginia projects national population growth from 331 million in 2020 to 349 million by 2030 and 371 million by 2050 (Sen, 2024).

With the House of Representatives capped at 435 seats, concerns about representational inequality continue to grow. This chapter explores the historical evolution of representation, major court rulings, and the modern debate over redistricting in response to seat changes.

2.1: Evolution of Political Representation

The history of representation in the United States reveals enduring tensions between equity and inclusion. From the start, representation was both a founding principle and a source of conflict, as seen in debates at the Constitutional Convention (Coby, 2018). These discussions focused on balancing proportional representation, state sovereignty, and the bicameral structure of Congress. The House of Representatives was designed to reflect the people's voice through population-based apportionment—a vision articulated by James Madison in *Federalist 10*. Achieving that vision, however, has been a constant struggle.

Historically, apportionment has been used to empower or exclude. The Three-Fifths Compromise, which counted enslaved individuals as three-fifths of a person for representation, allowed Southern states disproportionate congressional influence while disenfranchising millions (Ballingrud and Dougherty, 2018). The Fourteenth Amendment, ratified in 1868, established equal protection under the law and tied representation to the total population—excluding only non-taxed Native Americans (Cornell Law School). This reform aimed to correct racial injustices by ensuring equal representation. However, Black Americans continued to face disenfranchisement through violence, voter suppression, and discriminatory tools like literacy tests and poll taxes. These systemic barriers persisted well into the 20th century, highlighting the gap between constitutional ideals and political reality.

The 20th century introduced new challenges as the U.S. faced rapid urbanization and demographic shifts. The Permanent Apportionment Act of 1929 fixed House membership at 435,

limiting proportional representation as populations grew (Office of the Historian, U.S. House). Before the Act, Congress had failed to reapportion after the 1920 Census due to political resistance from rural interests, who feared losing influence to urban areas. The impasse reflected anxieties about immigration and political realignment. Some states even used at-large districts to dilute local minority voices until federal law required single-member districts.

The fixed seat cap remains controversial, as it prevents apportionment from adapting to population growth (Skelley and Best, 2021). Judicial interventions in the mid-20th century sought to address resulting inequalities. In *Reynolds v. Sims* (1964), the Supreme Court established the one-person, one-vote principle, requiring congressional districts to have roughly equal populations (Oyez). This landmark decision curbed malapportionment and rebalanced power between rural and urban areas.

Gerrymandering has long challenged the promise of fair representation. The Voting Rights Act of 1965 was a pivotal reform, banning racial discrimination in voting and increasing participation among Black Americans (NAACP, 2025). The Act mandated federal oversight in jurisdictions with histories of suppression. However, the Supreme Court's decision in Shelby County v. Holder (2013) struck down the pre-clearance formula, effectively ending federal review of voting laws in those areas (Brennan Center, 2018). This opened the door to restrictive voter ID laws, voter roll purges, and redistricting strategies that critics say disadvantage minority voters. These developments demonstrate how progress in representation can be reversed—and why continued vigilance is essential.

Representation has been both a promise and a battleground, shaped by law, politics, and demography. While apportionment aspires to fairness, entrenched interests often distort outcomes. As the population grows more diverse, the struggle for equitable representation

intensifies. Nowhere is this more evident than in the courts, where landmark rulings have attempted to define and enforce democratic principles. These decisions form the legal foundation for contemporary debates over redistricting.

2.2: Key Court Rulings on Apportionment

The judiciary plays a critical role in maintaining fairness in apportionment and redistricting. Over the last century, the Supreme Court has issued key rulings to combat malapportionment, define standards, and regulate redistricting abuses such as racial and partisan gerrymandering (NCSL, 2021). These rulings have collectively shaped the legal boundaries within which political representation is contested. As such, the courts remain central to both defining and constraining how apportionment is executed across states.

Baker v. Carr (1962) marked a turning point. The Court ruled that redistricting cases were justiciable under the Equal Protection Clause, reversing its earlier stance that such cases were "political questions" beyond judicial review (Federal Judicial Center). This landmark ruling opened the door for citizens to challenge legislative districts on constitutional grounds. *Baker*'s legacy lies in empowering federal courts to intervene in redistricting cases, creating a vital legal avenue for addressing representational inequality. It marked the beginning of the judiciary's modern role in enforcing fair districting practices.

Two years later, *Wesberry v. Sanders* (1964) established the one-person, one-vote rule for congressional districts. The Court argued that population imbalances diluted residents' votes in more populous districts, giving disproportionate power to rural areas (Oyez). *Wesberry* forced state legislatures and redistricting commissions to prioritize population equality and redrew the political map—shifting power toward urban and minority-dense districts. While promoting fairness, the ruling encouraged new gerrymandering strategies as lawmakers sought to maintain

partisan advantage. By elevating the principle of equal population, *Wesberry* reinforced the notion that every vote should carry similar weight. However, the decision also unintentionally prompted legislators to explore new tactics for maintaining power through redistricting.

In *Shaw v. Reno* (1993), the Court addressed racial gerrymandering. The case involved oddly shaped majority-Black districts drawn in North Carolina to comply with the Voting Rights Act. The Court ruled that while race could be considered in redistricting, it could not be the predominant factor if it led to bizarrely drawn districts that violated the Equal Protection Clause (Justia). Shaw established a framework for evaluating race-conscious districting and heightened scrutiny of majority-minority maps.

Shelby County v. Holder (2013) weakened the Voting Rights Act by eliminating the preclearance formula that required jurisdictions with histories of discrimination to seek federal approval before altering voting laws or redistricting plans (Brennan Center, 2018). Many scholars and civil rights advocates view the decision as a major setback for minority electoral protections, as the ruling triggered a wave of new restrictions and controversial maps, reigniting concerns about minority voter suppression (Lockhart, 2019). It shifted the burden of enforcement from the federal government to the voters themselves, often with limited recourse.

More recently, *Rucho v. Common Cause* (2019) held that partisan gerrymandering claims are nonjusticiable, meaning federal courts cannot intervene even when district maps heavily favor one party (Oyez). This decision shifted the oversight burden to state courts and legislatures, creating a fragmented legal landscape. Combined with *Shelby*, it significantly weakened federal protections against both racial and partisan gerrymandering. The ruling effectively removed the federal judiciary from one of the most pressing issues in electoral fairness. As a result, the

legality of extreme gerrymanders now varies dramatically depending on individual state constitutions and court systems.

Baker, *Wesberry*, *Shaw*, *Shelby*, and *Rucho*'s rulings illustrate the Court's evolving role in defining fair representation. While early decisions expanded judicial oversight and promoted equity, recent rulings have limited federal intervention, leaving key questions about fairness unresolved. The Court's inconsistent approach has left states with uneven legal protections and limited federal guidance. These rulings form the legal foundation for understanding the modern challenges of apportionment and redistricting.

2.3: Modern Debate on Representation

Apportionment is now one of American politics' most contested and consequential issues. It is not merely a procedural task but a powerful tool for consolidating or redistributing political power. Core concerns include partisan gerrymandering, redistricting technology, independent commissions, and the durability of majority-minority districts. Although apportionment is intended to ensure equal representation, scholars argue it often produces unequal electoral outcomes and perpetuates systemic inequities—particularly for racial and ethnic minorities (Dinesen et al., 2021). These inequities manifest in legislative underrepresentation and access to policy influence, resource distribution, and institutional trust. The stakes are further raised as the 2030 Census approaches, especially in rapidly growing Sun Belt states such as Arizona, Georgia, and North Carolina, where changing demographics and shifting political landscapes intensify the battle over fair representation.

A major challenge is gerrymandering—manipulating district boundaries to favor a political party or suppress opposition voters. While gerrymandering has existed for centuries, new technologies and data have made it more precise and potent (Browdy, 1990). State

legislatures can now design "safe seats" accurately, reducing electoral competitiveness and undermining public trust. For minority communities, these tactics often take the form of "cracking" (splitting voters across districts) or "packing" (consolidating them into a few), which weaken their influence (Cottrell, 2019). Although these practices face legal challenges, *Shelby County v. Holder* significantly curtailed federal oversight (Brennan Center, 2018). As partisan actors continue to exploit these tactics, the resulting district maps often entrench existing power structures and systematically dilute the political voice of underrepresented communities.

Much academic debate focuses on majority-minority districts. While these districts can enhance descriptive representation, some argue they isolate minority voters and limit their broader policy influence (Canon, 1999; Preuhs, 2006). Others contend that outcomes depend on political context and district design (Hayden, 2004). Latino and Asian American communities face unique challenges due to lower geographic concentration, making it harder to draw districts that reflect their growing numbers (Fraga, 2018). These trade-offs underscore the complexity of ensuring both fair representation and meaningful legislative influence for racially and ethnically diverse populations.

Technology has reshaped redistricting. Tools like Maptitude, Dave's Redistricting, and GIS allow operatives to craft favorable maps based on voter data. These tools can entrench partisan outcomes under the guise of neutrality. At the same time, open-source redistricting software has empowered advocates to propose fairer alternatives—prioritizing compactness, competitiveness, or minority representation (Cottrell, 2019). Transparency has increased, but the political will to adopt reforms remains limited (Levine, 2021). Without meaningful political incentives or legal mandates, even the most advanced mapping tools risk becoming instruments of manipulation rather than engines of reform.

Some states have responded by creating independent or bipartisan redistricting commissions. As of 2022, fifteen states use commissions with varying levels of independence (NCSL, 2022). Research suggests commissions can reduce partisan bias and improve competitiveness (Kirschenbaum & Li, 2021), though their success depends on design and implementation (Torchinsky & Polio, 2022). In some cases, commissions have deadlocked, requiring judicial intervention. The Supreme Court's *Rucho* decision eliminated a federal path to challenge partisan gerrymandering, leaving a patchwork of state-based protections.

Demographic shifts continue to shape representation. States gaining seats—such as Arizona and Georgia—can empower new constituencies or dilute their influence through strategic redistricting (Gaynor & Gimpel, 2021). These choices will shape the balance of power for years to come. This thesis's three hypotheses reflect these realities:

> **H1 (Partisan Gains Hypothesis)** builds on research showing long-term partisan effects of redistricting (Stephanopoulos & McGhee, 2015).
>
> **H2 (Minority Representation Hypothesis)** addresses the trade-offs between descriptive and substantive representation (Canon, 1999; Preuhs, 2006).
>
> **H3 (Disproportionate Impact Hypothesis)** connects redistricting outcomes to population shifts and the fixed size of the House.

As the 2030 Census nears, these issues grow more urgent. Advances in redistricting technology, legal uncertainty, and the patchwork nature of reforms point to a critical need for further research and reform. These apportionment dynamics not shape which voices are represented in Congress, but also influence the long-term legitimacy of democratic institutions. This thesis contributes to that conversation with empirical insights on how seat allocation influences partisan control and minority representation. The findings inform ongoing debates about how to make American democracy more equitable, responsive, and inclusive.

CHAPTER 3

Methods and Research Design

The research design uses a mixed-methods approach to examine how congressional apportionment affects partisanship and minority representation. The research offers insights into how district shifts shape representational outcomes by evaluating seat changes from the 2020 Census and combining electoral data with redistricting simulations. Primary data sources include precinct- and county-level election results, 2020 Census demographics, and district maps generated with Dave's Redistricting (DRA2020). Primary data sets include U.S. Census apportionment data, which determines the number of House seats assigned to each state every ten years (Census, 2021). These datasets allow for a granular analysis of voting behavior, demographic trends, and redistricting effects—particularly in states that gained or lost seats between 2020 and 2022. By integrating these sources, the thesis contributes to debates on democratic fairness, institutional reform, and congressional power.

This methodological approach directly supports the research question and hypotheses posed in the Introduction. The Partisan Gains Hypothesis examines whether states gaining seats consolidate power for dominant parties. The Minority Representation Hypothesis explores whether minority population growth corresponds to increased descriptive representation, contingent on district boundaries. The Disproportionate Impact Hypothesis assesses whether the fixed House size disproportionately disadvantages large or diverse states. These relationships are evaluated using demographic overlays, redistricting simulations, and pre- and post-apportionment outcomes comparisons.

3.1: Electoral and Census Data

This thesis uses electoral and census data to examine how congressional apportionment affects partisanship and minority representation. Primary data sources include precinct- and county-level election returns and the 2020 U.S. Census demographic data. Combining these datasets, the thesis explores how population changes influence congressional representation and whether these changes sustain or shift current power structures. The 2020 Census, the most detailed population dataset available, is the basis for congressional apportionment and redistricting. Census data were collected through online responses, mailed forms, and in-person interviews, with efforts to reach undercounted populations. However, the 2020 Census faced challenges due to the COVID-19 pandemic, political interference, and concerns about undercounts of minority populations (Neidert et al., 2025). These challenges raise critical concerns about data accuracy and completeness, which in turn affect the integrity of apportionment and the fairness of political representation derived from it.

To improve accuracy, the Census Bureau applied post-enumeration surveys and statistical corrections (Census, 2022). While these adjustments aim to reflect actual population changes, concerns remain that undercounts of Black, Hispanic, and Native American populations persist. These discrepancies have direct implications for apportionment and may disadvantage politically marginalized communities. Other challenges include the politicization of census administration, which can affect response rates, funding, and methodology (American Oversight, 2024). Technological advances, such as the increased use of administrative records, may improve efficiency but raise data privacy concerns and representation bias. In addition to their empirical utility, precinct- and county-level datasets offer methodological advantages. Their granularity enables a more localized analysis of voter behavior, especially in districts that have undergone

significant boundary changes. This level of detail is critical for understanding how apportionment alters the partisan landscape not just across states, but within them—shedding light on how redistricting shapes electoral outcomes, policy responsiveness, and minority political inclusion at the district level.

Following the apportionment of 435 House seats—a system in place since the 1930 Census (Eckman, 2025)—states initiate the redistricting process. Redistricting is frequently contested due to partisanship, race, and legal factors, including the Voting Rights Act of 1965 (NAACP, 2025). This thesis investigates how racial and ethnic demographic changes influence district boundaries and whether these lead to improved or reduced minority representation. The 2020 Census documented growth in Hispanic and Asian populations, the continued decline of the non-Hispanic white majority, and increased urbanization (Census, 2021). These trends suggest that minorities should gain representation, but whether they do depends on redistricting outcomes in states with seat changes. Because seat changes directly affect the redistricting process, understanding how demographic trends translate into boundary decisions is crucial for evaluating whether redistricting processes promote equity or entrench bias.

To measure the effects of apportionment and redistricting, the thesis analyzes precinct and county-level election data from recent elections, including data used by Dave's Redistricting. These datasets allow for a granular analysis of Democrat, Republican, and third-party voting behavior. Unlike statewide results, local-level data better reveals patterns in newly drawn or eliminated districts. Historical election data will be used to assess partisan outcomes before and after redistricting in states that gained or lost seats after the 2020 Census. This is especially relevant for the Partisan Gains Hypothesis (H1), which predicts increased partisan advantage for dominant parties in states gaining seats. Comparisons of vote share and partisan outcomes will

reveal whether apportionment reinforces or reshapes power structures. Precinct-level data will also be used to test the Minority Representation Hypothesis (H2) and the Disproportionate Impact Hypothesis (H3). This thesis will assess whether district changes align with areas of minority population growth or instead dilute minority influence. The growth of Hispanic and Black populations in states like Texas and Florida offers a future case study potential for examining how redistricting reflects demographic changes (or not) (Verhovek, 2024). These data points provide the empirical foundation for evaluating whether the redistricting process amplifies or undermines the political influence of dominant parties and historically underrepresented communities. These tools and datasets, when combined, help isolate the effects of redistricting decisions from broader electoral trends. This distinction is critical for attributing shifts in representation to the redistricting process rather than unrelated political or demographic factors.

Because redistricting results in new boundaries, direct pre- and post-redistricting comparisons can be problematic. To address this, the thesis uses state-level and aggregated district-level data, especially for changes in partisan control and minority representation. Where district-level analysis is used, lagged demographic variables such as the 2020 minority population share ensure a temporal separation between demographics and outcomes. This approach supports credible estimates of how population shifts influence representation. While some demographic trends may appear exogenous, redistricting decisions often shape them.

Looking ahead, the 2030 Census will be a key opportunity to evaluate long-term growth, migration, and diversification trends. While that data is not yet available, this thesis uses state-level population projections from the Census Bureau to anticipate likely seat gains and losses (Census, 2024). States expected to grow faster than average (e.g., North Carolina, Montana, Oregon) are classified as gainers. At the same time, those with stagnant or declining

populations (e.g., Illinois, Michigan, West Virginia) are projected to lose seats. These classifications rely on the continued use of the Huntington-Hill apportionment method, which has been used since 1941. From a research standpoint, the 2030 Census will offer valuable insight into whether trends observed in 2020 have persisted or changed (Government Accountability Office, 2024). If current trajectories hold, political tensions around redistricting may intensify as rural and white populations decline while urban and majority-minority districts seek fuller representation.

3.2: Mapping and Modeling

This thesis uses district mapping software to analyze how congressional apportionment affects partisan and minority representation. Dave's Redistricting provides a visual and data-based analysis of how population changes shape district boundaries. Mapping is essential for identifying redistricting's impact on representation. This thesis uses Dave's Redistricting to compare actual and alternative district maps for six states that gained or lost seats after the 2020 Census: Illinois, Michigan, Montana, North Carolina, Oregon, and West Virginia. These states were chosen because they represent seat gain (Montana, North Carolina, Oregon) and loss (Illinois, Michigan, West Virginia). They vary in their redistricting methods—from independent commissions (Michigan, Montana) to partisan-controlled processes (Illinois, North Carolina, Oregon, West Virginia) (Ballotpedia). This variation helps illustrate how apportionment-induced redistricting plays out across different political and demographic contexts.

To illustrate these effects, six state-level case studies are presented. For each, DRA2020 simulations model two scenarios: one where the state gains a seat and another where it loses a seat. These simulations reveal potential impacts on partisan balance and minority representation. Montana is a recent real-world example, gaining a second seat after the 2020 Census. Its "seat

loss" scenario imagines a return to a single at-large district, while a hypothetical third seat tests future changes. The selected states represent regional and political diversity—from Republican-leaning rural states (Montana, West Virginia) to battlegrounds (North Carolina, Michigan) to Democrat strongholds (Oregon, Illinois).

The mapping process layers electoral and demographic data onto congressional districts, offering a refined view of how population changes influence representation. Key areas of analysis include:

Partisan Composition: Districts are evaluated using 2020-2022 vote data to test whether seat gains favor dominant parties (H1).

Minority Representation: District demographics assess whether descriptive representation increases with population growth (H2).

Compactness and Competitiveness: Metrics like Polsby-Popper and Reock scores evaluate district fairness.

Mapping simulations further enable comparison across alternative apportionment scenarios. While district-level outcomes are modeled, using state-level aggregates and lagged demographic predictors increases robustness and accounts for redistricting-induced endogeneity. This dual-level approach ensures that findings are not artifacts of map boundaries alone but reflect genuine representational dynamics. By simulating both seat gain and seat loss conditions, the thesis isolates the structural effects of apportionment with greater precision. These tools and comparisons set the stage for the six state-level case studies analyzed in the following chapter.

CHAPTER 4

Data and Results

This chapter begins with six state-level case studies that build on the methodology described in Chapter 3. For each state, two redistricting simulations are presented–one for a gain of a congressional seat, and one for a loss–to explore the political and demographic consequences of apportionment. These paired scenarios help isolate how shifts in congressional seat allocation can reshape partisan advantage and minority representation within a state. The Montana case, serves as a useful reference point because it experienced a real seat gain after the 2020 Census. Data-driven findings are presented in this chapter, but the analysis of the findings will be addressed in Chapter 5. DRA2020, a redistricting simulation tool, is used to generate twelve hypothetical districting maps. Maps are organized by state–Montana, North Carolina, Oregon, Illinois, Michigan, and West Virginia–with two maps per state illustrating the effects of gaining and losing congressional districts, either historically or hypothetically. Descriptive statistics accompany these maps, summarizing the partisan composition and the racial/ethnic demographics of each plan while highlighting potential shifts in representation under different apportionment scenarios. To frame the analysis, a few notes on case selection and scope are warranted.

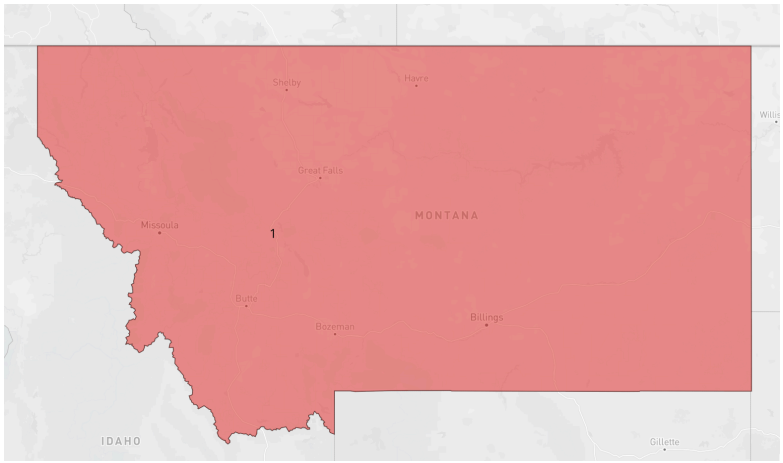
While these six case studies are not exhaustive, they were selected to provide meaningful variation in regional context, partisan control, and redistricting procedures. Time constraints and the need for in-depth, state-specific simulations drove the focus on this limited sample. In addition, including relatively small states like Montana and West Virginia may introduce a

small-state bias, particularly when analyzing broader trends in representation. However, these states were purposefully chosen to highlight how even minimal apportionment changes—such as adding or subtracting a single seat—can produce outsized political effects. Moreover, this sample includes both partisan- and commission-led redistricting processes, allowing cross-case comparisons aligned with the thesis's hypotheses. Though a national analysis of all fifty states is beyond the scope of this study, the selected cases represent a diverse cross-section of apportionment dynamics and institutional contexts. In constructing the simulations used throughout this chapter, the following tools and procedures were employed:

All twelve simulated district maps were created using Dave's Redistricting App (DRA2020), an open-access platform designed for drawing congressional districts using integrated demographic, electoral, and geographic datasets. DRA2020 provides tools to evaluate district compactness (Polsby-Popper, Reock scores), partisan lean (based on past election results), minority representation (by voting-age population), and competitiveness (margin of victory estimates). For each state in this study, I drew two scenarios by hand—one reflecting a gain of a congressional seat and the other reflecting a loss—using 2020 census data and respecting district population equality thresholds. When feasible, I adhered to relevant state-specific redistricting principles, including county integrity, minority voting protections, and contiguity requirements. The drawing process was both iterative and time-intensive. Initial drafts were refined to improve compactness, maintain logical geographic continuity, and ensure compliance with baseline fairness metrics. In several instances, I redrew district lines multiple times to more closely align with real-world demographic clustering and to create districts with plausible electoral outcomes. While these hand-drawn maps are not intended as formal

redistricting proposals, they reflect plausible alternatives grounded in empirical data and simulate official mapmakers' choices.

4.1: Case Study – Montana



	Population		Shapes		Partisan Lean			Demographics (VAP)							DOWNLOAD
ID	Total	+/-			Dem	Rep	Oth	Total	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0				0%	0%	0%	0	0%	0%	0%	0%	0%	0%	0%
1	1,084,225	0%	✓	✓	42.65%	55.09%	2.25%	850,123	85.58%	14.42%	3.52%	0.88%	1.36%	7.78%	0.23%
	1,084,225	**0%**	✓	✓	**42.65%**	**55.09%**	**2.25%**	**850,123**	**85.58%**	**14.42%**	**3.52%**	**0.88%**	**1.36%**	**7.78%**	**0.23%**

Notes

- Precinct Shapes: Census 2020
- Total Population: Census 2020
- Voting Age Population: Census 2020
- Election Result: Composite of 2016 Pres, 2020 Pres, 2018 Sen, 2020 Sen, 2020 Gov, 2020 AG
- One district leans Republican, none lean Democratic, and none fall in the 45–55% competitive range.

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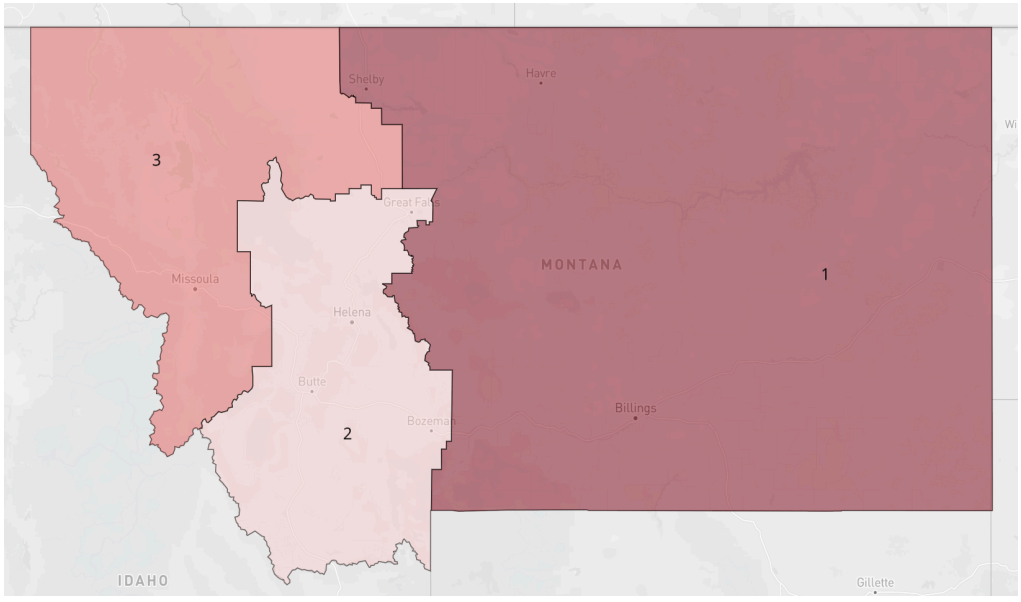
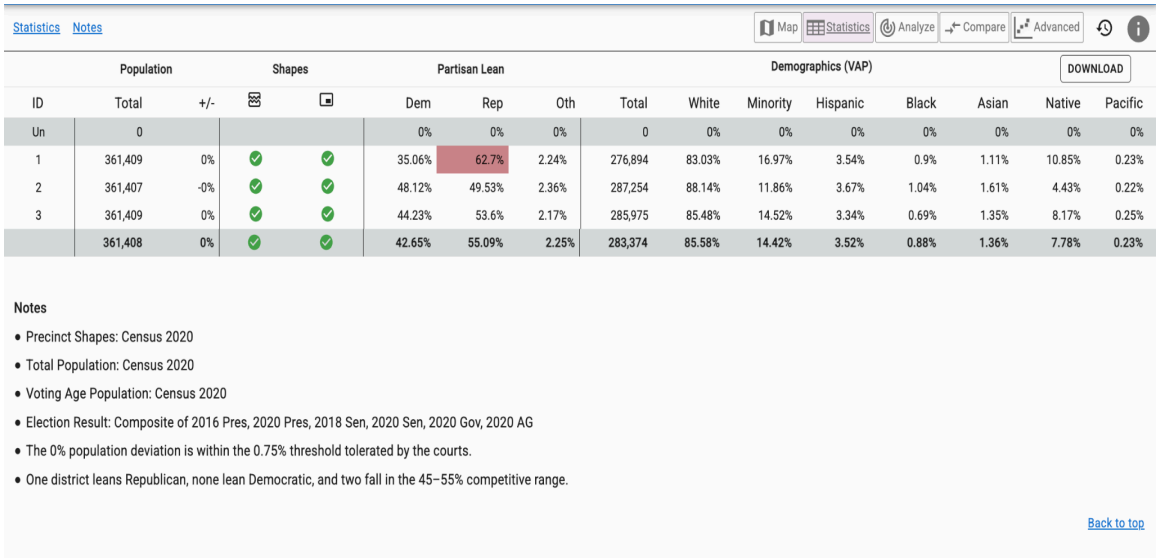
Figure 4-1. Montana (-1) District Map and Demographics

Montana's congressional representation underwent a significant change in 2022, when the state was granted a second seat following the 2020 Census. This marked a departure from its longstanding at-large status. To explore how apportionment affects representation, this section simulates two hypothetical scenarios: one in which Montana loses a congressional seat and

reverts to a single at-large district, and another where it gains a third seat, expanding representation further. These simulations—though based on hand-drawn maps created in DRA2020 and subject to minor inaccuracies—nonetheless offer valuable insights into districting trends. A shift to an at-large district consolidates all voters into a single statewide electorate, producing a Republican-leaning vote share of 55.09% Republican to 42.65% Democratic. This configuration eliminates competitive districts and reinforces Montana's status as a Republican stronghold. Demographically, the at-large setup limits opportunities for targeted minority representation: while 14.42% of the population identifies as nonwhite, including a Native American population of 7.78%, regional clusters of higher minority density are absorbed into the broader statewide electorate. In contrast, adding a third district introduces more political diversity and enhances the concentration of Native representation in one district. Overall, Montana serves as a useful example of how seat gains can promote competitiveness and minority influence, while seat losses tend to entrench existing power structures.





Statistics Notes

Map | Statistics | Analyze | Compare | Advanced

DOWNLOAD

	Population		Shapes		Partisan Lean			Demographics (VAP)							
ID	Total	+/-			Dem	Rep	Oth	Total	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0				0%	0%	0%	0	0%	0%	0%	0%	0%	0%	0%
1	361,409	0%	✓	✓	35.06%	62.7%	2.24%	276,894	83.03%	16.97%	3.54%	0.9%	1.11%	10.85%	0.23%
2	361,407	-0%	✓	✓	48.12%	49.53%	2.36%	287,254	88.14%	11.86%	3.67%	1.04%	1.61%	4.43%	0.22%
3	361,409	0%	✓	✓	44.23%	53.6%	2.17%	285,975	85.48%	14.52%	3.34%	0.69%	1.35%	8.17%	0.25%
	361,408	0%	✓	✓	42.65%	55.09%	2.25%	283,374	85.58%	14.42%	3.52%	0.88%	1.36%	7.78%	0.23%

Notes

- Precinct Shapes: Census 2020
- Total Population: Census 2020
- Voting Age Population: Census 2020
- Election Result: Composite of 2016 Pres, 2020 Pres, 2018 Sen, 2020 Sen, 2020 Gov, 2020 AG
- The 0% population deviation is within the 0.75% threshold tolerated by the courts.
- One district leans Republican, none lean Democratic, and two fall in the 45–55% competitive range.

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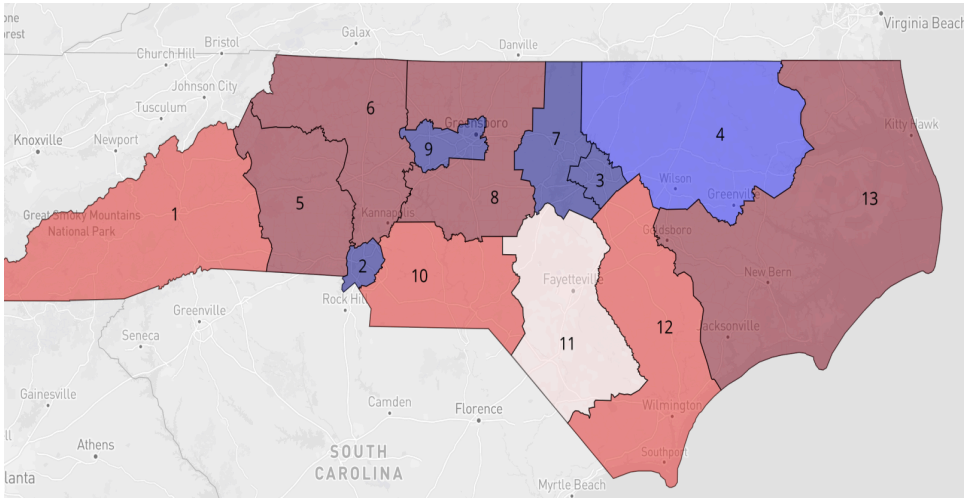
Figure 4-2. Montana (+1) District Map and Demographics

The simulated three-district configuration introduces slight political diversification while preserving a Republican advantage. A newly configured three-district map results in one solid Republican seat (62.7% Republican), one competitive district (49.53% Republican, 48.12% Democratic), and one moderately Republican district (53.6% Republican, 44.23% Democratic). Compared to the at-large scenario, this configuration introduces at least one highly competitive district while also slightly improving Democratic performance elsewhere. Geographically, minority representation has become more concentrated, particularly in District 2, where the Native American population has increased to 10.85%. Although overall state demographics remain unchanged, redistributing voters into multiple districts enhances the potential for minority influence, especially in the competitive district. Ultimately, losing a congressional seat consolidates Republican strength and diminishes minority influence, whereas gaining a seat fosters a more balanced political environment and slightly improves minority representation.

While the hand-drawn maps may contain minor inaccuracies, they effectively illustrate the broader impact of district apportionment on Montana's political and demographic landscape.

4.2: Case Study – North Carolina



Statistics Notes — Map | Statistics | Analyze | Compare | Advanced — DOWNLOAD

	Population		Shapes		Partisan Lean			Demographics (VAP)							
ID	Total	+/-			Dem	Rep	Oth	Total	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0				0%	0%	0%	0	0%	0%	0%	0%	0%	0%	0%
1	803,029	-0%	✓	✓	42.75%	54.83%	2.43%	655,428	84.57%	15.43%	6.04%	4.36%	1.25%	3.44%	0.21%
2	803,041	0%	✓	✓	70.78%	26.62%	2.6%	623,243	40.67%	59.33%	14.71%	37.35%	6.57%	1.95%	0.15%
3	803,029	-0%	✓	✓	64.98%	32.48%	2.54%	624,718	56.48%	43.52%	10.35%	21.84%	10.14%	1.76%	0.14%
4	803,028	-0%	✓	✓	54.1%	44.19%	1.7%	625,404	51.56%	48.44%	6.6%	38.61%	1.68%	2.18%	0.13%
5	803,028	-0%	✓	✓	30.89%	66.86%	2.25%	634,307	77.58%	22.42%	6.38%	11.59%	2.15%	2.42%	0.1%
6	803,030	0%	✓	✓	35.71%	61.85%	2.43%	627,306	76.79%	23.21%	7.83%	10.79%	2.61%	2%	0.11%
7	803,029	-0%	✓	✓	66.26%	31.54%	2.19%	624,625	59.72%	40.28%	9.86%	22.08%	6.78%	2.01%	0.12%
8	803,028	-0%	✓	✓	34.1%	63.86%	2.04%	628,693	73.01%	26.99%	8.4%	14.76%	1.72%	2.4%	0.11%
9	803,029	-0%	✓	✓	59.3%	38.48%	2.23%	629,350	52.61%	47.39%	9.61%	32.01%	4.55%	2.12%	0.12%
10	803,026	-0%	✓	✓	41.5%	56.21%	2.29%	606,710	66.06%	33.94%	9%	17.6%	4.85%	2.69%	0.13%
11	803,038	0%	✓	✓	48.91%	48.92%	2.17%	607,497	48.21%	51.79%	10.27%	30.85%	2.6%	9.37%	0.44%
12	803,027	-0%	✓	✓	40.74%	57.01%	2.25%	633,597	71.28%	28.72%	9.43%	15.68%	1.33%	2.44%	0.14%
13	803,026	-0%	✓	✓	38.45%	59.4%	2.15%	634,221	66.91%	33.09%	7.24%	21.58%	2.2%	2.28%	0.34%
	803,030	0%	✓	✓	48.32%	49.43%	2.25%	627,315	63.64%	36.36%	8.88%	21.37%	3.71%	2.84%	0.17%

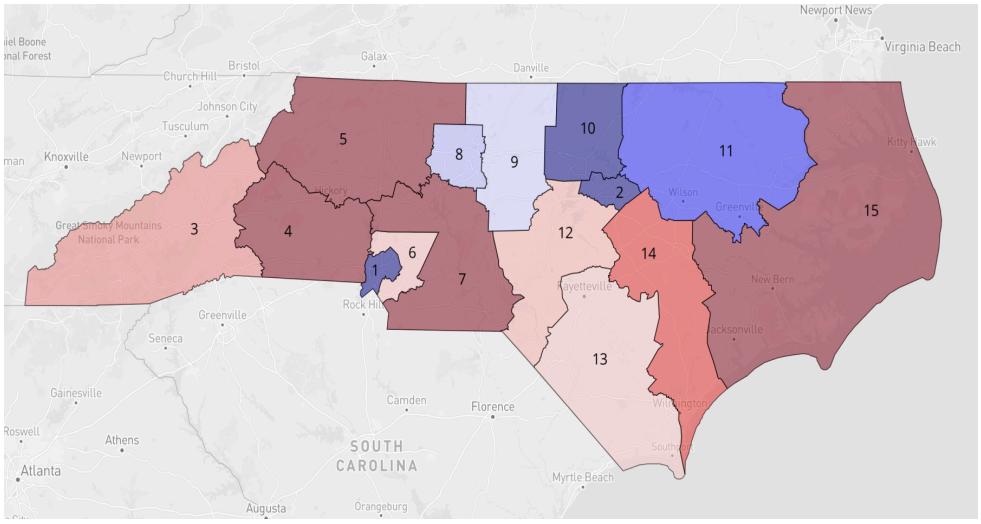
Notes

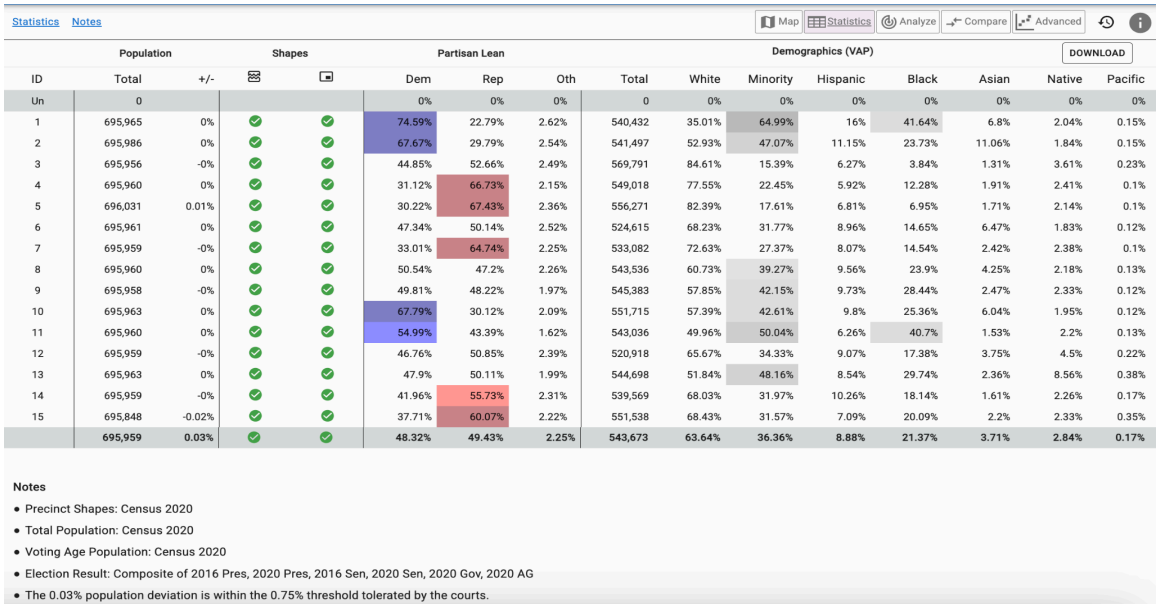
- Precinct Shapes: Census 2020
- Total Population: Census 2020
- Voting Age Population: Census 2020
- Election Result: Composite of 2016 Pres, 2020 Pres, 2016 Sen, 2020 Sen, 2020 Gov, 2020 AG
- The 0% population deviation is within the 0.75% threshold tolerated by the courts.
- Seven districts lean Republican, five lean Democratic, and one falls in the 45–55% competitive range.
- There are two majority-minority districts.

Figure 4-3. North Carolina (-1) District Map and Demographics

North Carolina represents a fast-growing, ethnically diverse battleground state where shifts in congressional seats can dramatically affect both partisan competitiveness and minority

influence, particularly among Black voters in urban areas. Examining the effects of losing a congressional district (reducing from fourteen to thirteen) and gaining a congressional district (expanding to fifteen seats) provides insight into changes in partisan balance and minority representation. Maps generated in DRA2020 serve as the foundation for this analysis, though minor inaccuracies may exist due to manual adjustments. Despite these limitations, the descriptive statistics offer valuable observations on apportionment shifts' political and demographic consequences. Reducing to thirteen districts requires the remaining seats to absorb the redistributed population, increasing district sizes and altering partisan balance. This configuration strengthens Republican control as several districts become more conservative due to consolidating Republican-leaning areas. Democratic-leaning districts remain relatively stable, yet competitive seats experience greater polarization. Additionally, minority representation slightly declines as urban majority-minority districts merge with surrounding areas, diluting their overall vote share. The number of majority-minority districts remains unchanged, but minority voters in marginal districts lose some influence, potentially reducing the electoral viability of minority-preferred candidates.





Statistics Notes

Map | Statistics | Analyze | Compare | Advanced

DOWNLOAD

	Population		Shapes		Partisan Lean			Demographics (VAP)							
ID	Total	+/-			Dem	Rep	Oth	Total	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0				0%	0%	0%	0	0%	0%	0%	0%	0%	0%	0%
1	695,965	0%	✓	✓	74.59%	22.79%	2.62%	540,432	35.01%	64.99%	16%	41.64%	6.8%	2.04%	0.15%
2	695,986	0%	✓	✓	67.67%	29.79%	2.54%	541,497	52.93%	47.07%	11.15%	23.73%	11.06%	1.84%	0.15%
3	695,956	-0%	✓	✓	44.85%	52.66%	2.49%	569,791	84.61%	15.39%	6.27%	3.84%	1.31%	3.61%	0.23%
4	695,960	0%	✓	✓	31.12%	66.73%	2.15%	549,018	77.55%	22.45%	5.92%	12.28%	1.91%	2.41%	0.1%
5	696,031	0.01%	✓	✓	30.22%	67.43%	2.36%	556,271	82.39%	17.61%	6.81%	6.95%	1.71%	2.14%	0.1%
6	695,961	0%	✓	✓	47.34%	50.14%	2.52%	524,615	68.23%	31.77%	8.96%	14.65%	6.47%	1.83%	0.12%
7	695,959	-0%	✓	✓	33.01%	64.74%	2.25%	533,082	72.63%	27.37%	8.07%	14.54%	2.42%	2.38%	0.1%
8	695,960	0%	✓	✓	50.54%	47.2%	2.26%	543,536	60.73%	39.27%	9.56%	23.9%	4.25%	2.18%	0.13%
9	695,958	-0%	✓	✓	49.81%	48.22%	1.97%	545,383	57.85%	42.15%	9.73%	28.44%	2.47%	2.33%	0.12%
10	695,963	0%	✓	✓	67.79%	30.12%	2.09%	551,715	57.39%	42.61%	9.8%	25.36%	6.04%	1.95%	0.12%
11	695,960	0%	✓	✓	54.99%	43.39%	1.62%	543,036	49.96%	50.04%	6.26%	40.7%	1.53%	2.2%	0.13%
12	695,959	-0%	✓	✓	46.76%	50.85%	2.39%	520,918	65.67%	34.33%	9.07%	17.38%	3.75%	4.5%	0.22%
13	695,963	0%	✓	✓	47.9%	50.11%	1.99%	544,698	51.84%	48.16%	8.54%	29.74%	2.36%	8.56%	0.38%
14	695,959	-0%	✓	✓	41.96%	55.73%	2.31%	539,569	68.03%	31.97%	10.26%	18.14%	1.61%	2.26%	0.17%
15	695,848	-0.02%	✓	✓	37.71%	60.07%	2.22%	551,538	68.43%	31.57%	7.09%	20.09%	2.2%	2.33%	0.35%
	695,959	**0.03%**	✓	✓	**48.32%**	**49.43%**	**2.25%**	**543,673**	**63.64%**	**36.36%**	**8.88%**	**21.37%**	**3.71%**	**2.84%**	**0.17%**

Notes

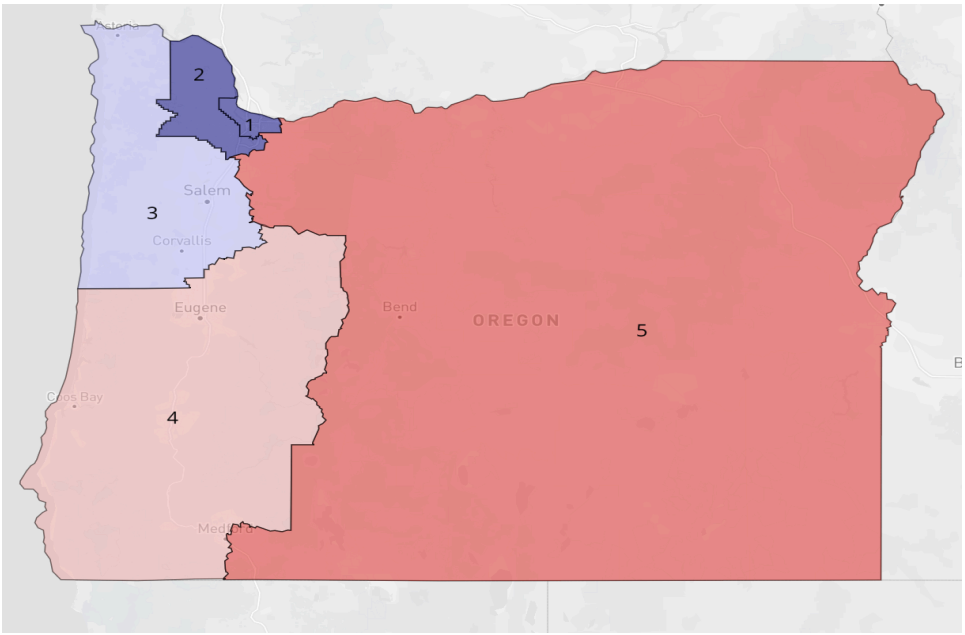
- Precinct Shapes: Census 2020
- Total Population: Census 2020
- Voting Age Population: Census 2020
- Election Result: Composite of 2016 Pres, 2020 Pres, 2016 Sen, 2020 Sen, 2020 Gov, 2020 AG
- The 0.03% population deviation is within the 0.75% threshold tolerated by the courts.

Figure 4-4. North Carolina (+1) District Map and Demographics

By contrast, the scenario in which North Carolina gains a fifteenth congressional district, results in smaller, more localized districts that enhance electoral competitiveness. Adding a new seat introduces one more Democratic-leaning district while increasing the number of potentially competitive seats. Minority representation also improves under this scenario, as urban minority populations are more effectively concentrated within designated districts, amplifying their electoral influence. Data suggests a rise in majority-minority or plurality-minority districts, reflecting a more proportional alignment with North Carolina's increasing racial and ethnic diversity. Overall, losing a congressional district consolidates Republican strength while slightly diminishing minority representation, whereas gaining a seat fosters greater Democratic competitiveness and strengthens minority influence in key districts. Although these hand-drawn maps may not fully replicate official redistricting processes, they effectively illustrate the

significant impact of apportionment changes in North Carolina's electoral and demographic landscape.

4.3: Case Study – Oregon



Statistics Notes

Map | Statistics | Analyze | Compare | Advanced

DOWNLOAD

	Population		Shapes		Partisan Lean			Demographics (VAP)							
ID	Total	+/-			Dem	Rep	Oth	Total	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0				0%	0%	0%	0	0%	0%	0%	0%	0%	0%	0%
1	847,451	-0%	✓	✓	77.09%	18.51%	4.39%	693,526	69.26%	30.74%	10.87%	6.47%	9.5%	3.49%	0.98%
2	847,451	-0%	✓	✓	59.93%	35.08%	4.99%	659,555	69.55%	30.45%	12.94%	2.72%	11.21%	3.07%	0.96%
3	847,453	0%	✓	✓	48.82%	45.95%	5.23%	664,429	74.48%	25.52%	15.21%	1.51%	3.64%	4.47%	0.89%
4	847,449	-0%	✓	✓	45.54%	49.48%	4.97%	687,638	81.97%	18.03%	7.93%	1.49%	2.86%	4.77%	0.57%
5	847,452	0%	✓	✓	41.9%	53.7%	4.4%	665,504	79.45%	20.55%	10.98%	1.11%	3.02%	4.47%	0.54%
	847,451	0%	✓	✓	54.75%	40.47%	4.79%	674,130	74.95%	25.05%	11.55%	2.68%	6.05%	4.06%	0.79%

Notes

- Precinct Shapes: Census 2020
- Total Population: Census 2020
- Voting Age Population: Census 2020
- Election Result: Composite of 2016 Pres, 2020 Pres, 2020 Sen, 2018 Gov, 2020 AG
- The 0% population deviation is within the 0.75% threshold tolerated by the courts.
- One district leans Republican, two lean Democratic, and two fall in the 45–55% competitive range.

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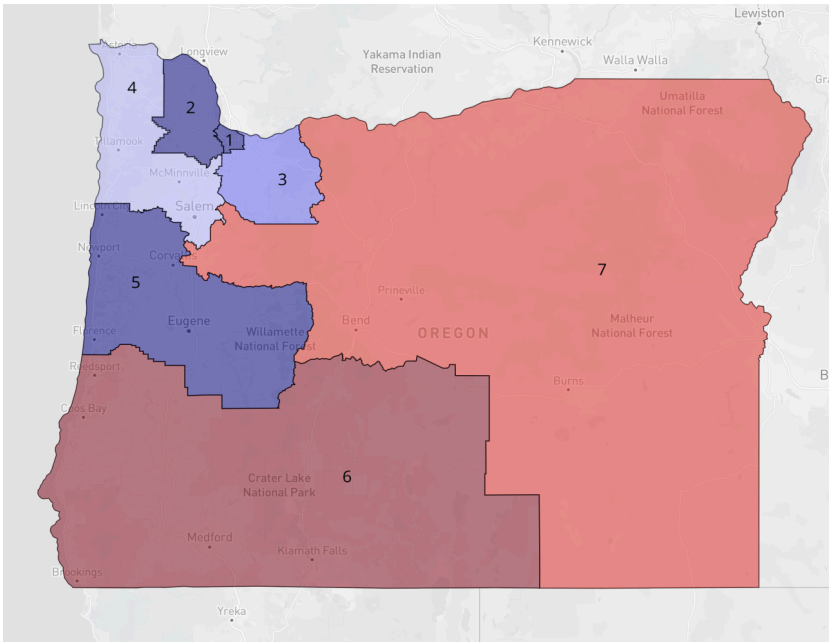
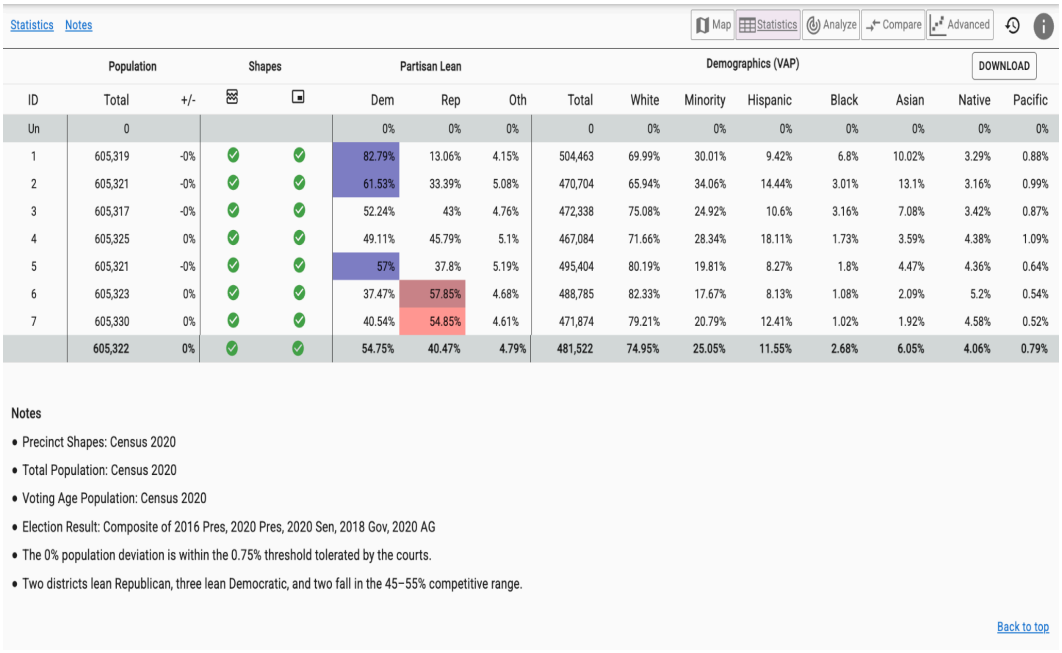
Figure 4-5. Oregon (-1) District Map and Demographics

Oregon exemplifies a safe Democratic state with a relatively homogeneous population, where seat changes still reveal subtle shifts in partisan control and modest opportunities for minority concentration, particularly among Hispanic voters. Analyzing two hypothetical scenarios – one where Oregon loses a congressional district, reducing the total number from six to five, and another where the state gains a district, expanding representation to seven – illustrates the challenges of equitable districting while maintaining population balance. Each case highlights the complexity of ensuring fair representation amid shifting demographic and political landscapes. Although manually drawn, the maps and corresponding descriptive statistics offer valuable insights into how these changes might reshape Oregon's congressional districts. Reducing to five districts consolidates representation into larger, fewer districts, altering partisan distribution. Under this configuration, one district remains strongly Democratic, two become competitive, and two lean Republican. Minority representation remains relatively stable, with a statewide voting-age minority population (VAP) of approximately 25.05%. However, consolidating urban Democratic strongholds while expanding rural Republican-leaning districts reduces overall competitiveness, with fewer districts falling within the 45-55% range.





Statistics Notes

Map | Statistics | Analyze | Compare | Advanced

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	Population		Shapes		Partisan Lean			Demographics (VAP)							
ID	Total	+/-			Dem	Rep	Oth	Total	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0				0%	0%	0%	0	0%	0%	0%	0%	0%	0%	0%
1	605,319	-0%	✓	✓	82.79%	13.06%	4.15%	504,463	69.99%	30.01%	9.42%	6.8%	10.02%	3.29%	0.88%
2	605,321	-0%	✓	✓	61.53%	33.39%	5.08%	470,704	65.94%	34.06%	14.44%	3.01%	13.1%	3.16%	0.99%
3	605,317	-0%	✓	✓	52.24%	43%	4.76%	472,338	75.08%	24.92%	10.6%	3.16%	7.08%	3.42%	0.87%
4	605,325	0%	✓	✓	49.11%	45.79%	5.1%	467,084	71.66%	28.34%	18.11%	1.73%	3.59%	4.38%	1.09%
5	605,321	-0%	✓	✓	57%	37.8%	5.19%	495,404	80.19%	19.81%	8.27%	1.8%	4.47%	4.36%	0.64%
6	605,323	0%	✓	✓	37.47%	57.85%	4.68%	488,785	82.33%	17.67%	8.13%	1.08%	2.09%	5.2%	0.54%
7	605,330	0%	✓	✓	40.54%	54.85%	4.61%	471,874	79.21%	20.79%	12.41%	1.02%	1.92%	4.58%	0.52%
	605,322	0%	✓	✓	54.75%	40.47%	4.79%	481,522	74.95%	25.05%	11.55%	2.68%	6.05%	4.06%	0.79%

Notes

- Precinct Shapes: Census 2020
- Total Population: Census 2020
- Voting Age Population: Census 2020
- Election Result: Composite of 2016 Pres, 2020 Pres, 2020 Sen, 2018 Gov, 2020 AG
- The 0% population deviation is within the 0.75% threshold tolerated by the courts.
- Two districts lean Republican, three lean Democratic, and two fall in the 45–55% competitive range.

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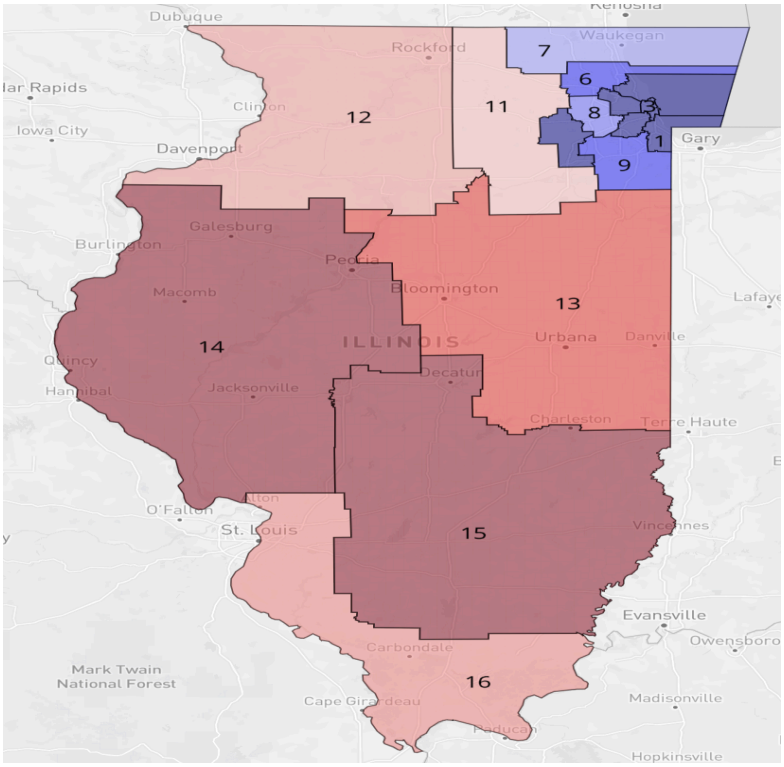
Figure 4-6. Oregon (+1) District Map and Demographics

In the alternative seat-gain scenario, increasing the number of Oregon's congressional districts to seven expands representation and leads to a more fragmented political landscape. Adding a new district produces a more balanced partisan distribution, with three Democratic-leaning districts, two Republican-leaning districts, and two competitive seats. Minority representation experiences slight improvements, as the overall VAP percentage remains at 25.05% but sees localized increases in certain districts due to voter redistribution. Incorporating urban and suburban areas into the new district enhances the potential for minority electoral influence. Furthermore, creating additional competitive districts shifts more seats into the 45-55% range, fostering a greater balance in representation. Despite the possibility of minor inaccuracies due to manual districting, these findings underscore the broader impact of adding or removing congressional seats. Losing a district consolidates Republican representation and reduces competitiveness, whereas gaining a district redistributes Democratic-leaning voters and

strengthens minority representation. The implications of these changes reinforce congressional apportionment's role in shaping electoral outcomes and determining the equitable distribution of political power.

4.4: Case Study – Illinois



Statistics Notes

Map Statistics Analyze Compare Advanced

DOWNLOAD

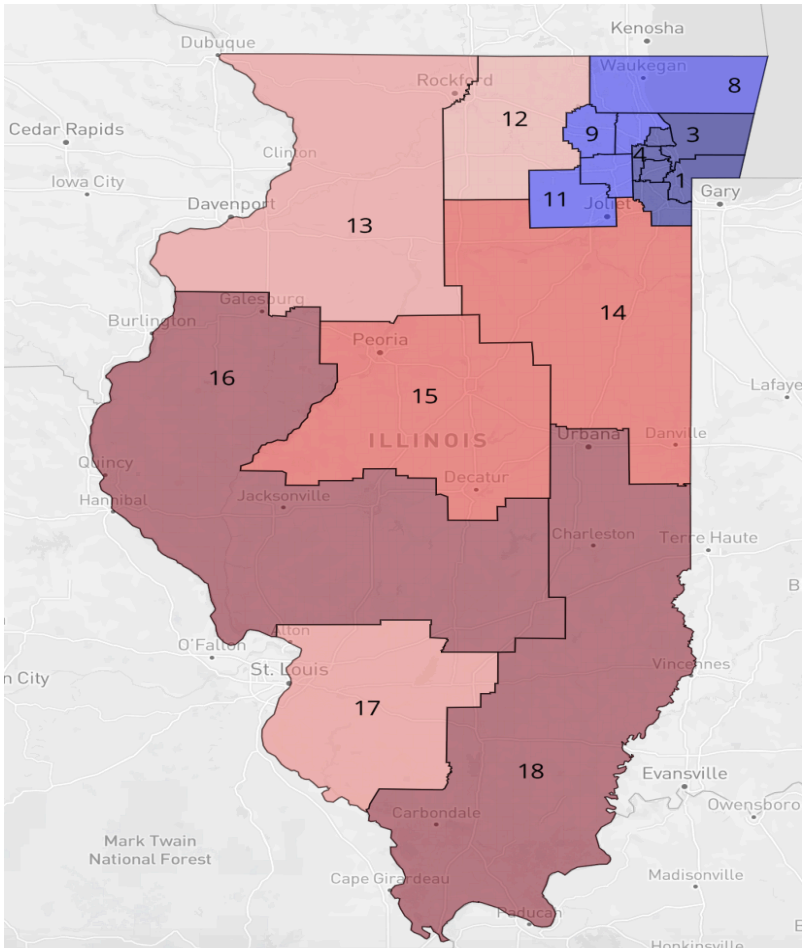
	Population		Shapes		Partisan Lean			Demographics (VAP)							
ID	Total	+/-			Dem	Rep	Oth	Total	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0				0%	0%	0%	0	0%	0%	0%	0%	0%	0%	0%
1	800,783	0%	✓	✓	90.45%	4.73%	4.81%	621,789	7.04%	92.96%	11.52%	79.54%	2.2%	1.49%	0.12%
2	800,781	-0%	✓	✓	71.05%	23.96%	4.99%	600,709	28.35%	71.65%	57.91%	10.29%	3.33%	4.56%	0.12%
3	800,784	0%	District is contiguous	✓	78.5%	17.2%	4.31%	691,638	58.2%	41.8%	16.01%	11.73%	13.34%	1.58%	0.14%
4	800,782	0%	✓	✓	73.72%	21.63%	4.66%	623,833	36.31%	63.69%	36.04%	22.5%	5.29%	2.79%	0.14%
5	800,811	0%	✓	✓	70.08%	26.03%	3.89%	640,100	58.29%	41.71%	14.74%	8.73%	17.38%	1.69%	0.15%
6	800,781	-0%	✓	✓	55.78%	40.36%	3.86%	624,315	67.25%	32.75%	12.71%	2.84%	16.24%	1.37%	0.1%
7	800,780	-0%	✓	✓	50.34%	44.91%	4.75%	613,228	64.44%	35.56%	21.4%	6.83%	5.71%	2.4%	0.17%
8	800,782	0%	✓	✓	52.31%	43.1%	4.58%	624,599	69.88%	30.12%	12.79%	4.79%	11.32%	1.44%	0.11%
9	800,783	0%	✓	✓	56.04%	39.19%	4.78%	622,095	60.44%	39.56%	11.6%	24.56%	2.46%	1.47%	0.08%
10	800,781	-0%	✓	✓	57.72%	37.5%	4.78%	597,026	52.93%	47.07%	24.35%	11.35%	10.35%	2.18%	0.12%
11	800,784	0%	✓	✓	46%	48.94%	5.06%	606,101	70.25%	29.75%	18.48%	4.74%	4.88%	2.31%	0.11%
12	800,782	0%	✓	✓	44.78%	50.44%	4.78%	624,428	77.84%	22.16%	9.68%	8.3%	2.1%	1.99%	0.08%
13	800,782	0%	✓	✓	40.68%	54.3%	5.03%	628,355	77.67%	22.33%	5.75%	9.23%	5.36%	1.77%	0.1%
14	800,781	-0%	✓	✓	37.14%	57.87%	4.99%	627,055	86%	14%	3.07%	6.83%	1.82%	1.85%	0.13%
15	800,783	0%	✓	✓	32.74%	62.78%	4.47%	628,283	86.45%	13.55%	2.2%	7.64%	1.38%	1.83%	0.1%
16	800,748	-0%	✓	✓	43.99%	51.79%	4.21%	625,915	76.91%	23.09%	3.4%	15.21%	1.81%	2.24%	0.13%
	800,782	0.01%	✓	✓	55.49%	39.9%	4.61%	624,957	61.24%	38.76%	16.2%	14.68%	6.62%	2.05%	0.12%

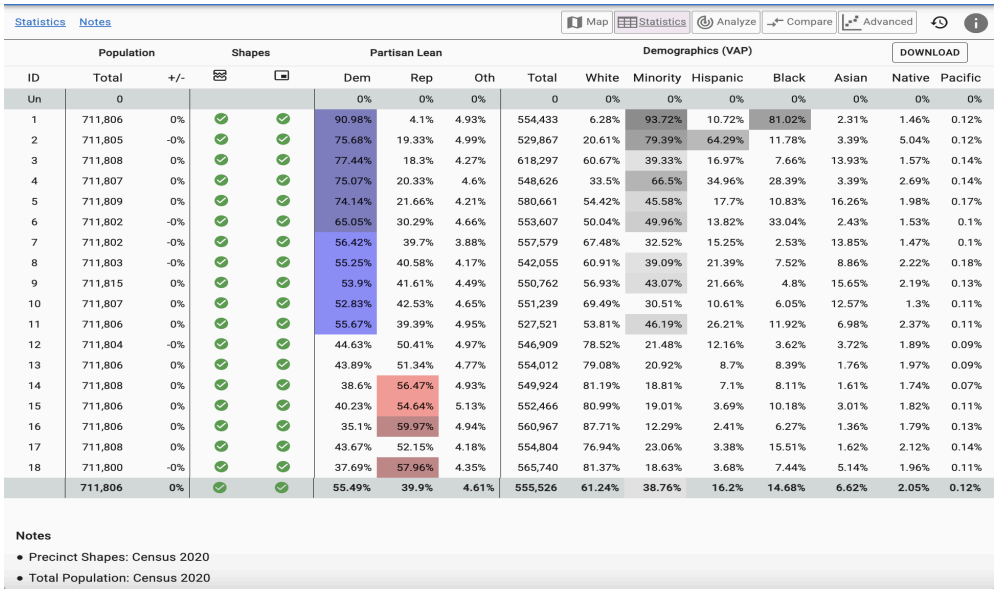
Notes

- Precinct Shapes: Census 2020
- Total Population: Census 2020
- Voting Age Population: Census 2020
- Election Result: Composite of 2016 Pres, 2020 Pres, 2016 Sen, 2020 Sen, 2018 Gov, 2018 AG
- The 0.01% population deviation is within the 0.75% threshold tolerated by the courts.
- Three districts lean Republican, eight lean Democratic, and five fall in the 45–55% competitive range.
- There are three majority-minority districts.

Figure 4-7. Illinois (-1) District Map and Demographics

Illinois is a reliably Democratic state with significant racial diversity, especially in the Chicago metro area, making it a critical case for observing how seat changes can dilute or enhance majority-minority representation. Redistricting scenarios modeled in DRA2020 illustrate the impact of Illinois losing and gaining a congressional district, shifting from seventeen districts to sixteen in one case and expanding to eighteen in another. A reduction to sixteen districts consolidates Democratic and Republican strongholds, leading to a decrease in the total number of majority-minority districts. Before this change, three majority-minority districts were concentrated in Chicago. Under the sixteen-district configuration, minority representation faces slight dilution as some majority-minority districts merge with surrounding suburban and rural areas, reducing their overall electoral influence.





Statistics | Notes — Map | Statistics | Analyze | Compare | Advanced

	Population		Shapes		Partisan Lean			Demographics (VAP)							DOWNLOAD
ID	Total	+/-			Dem	Rep	Oth	Total	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0				0%	0%	0%	0	0%	0%	0%	0%	0%	0%	0%
1	711,806	0%	✓	✓	90.98%	4.1%	4.93%	554,433	6.28%	93.72%	10.72%	81.02%	2.31%	1.46%	0.12%
2	711,805	-0%	✓	✓	75.68%	19.33%	4.99%	529,867	20.61%	79.39%	64.29%	11.78%	3.39%	5.04%	0.12%
3	711,808	0%	✓	✓	77.44%	18.3%	4.27%	618,297	60.67%	39.33%	16.97%	7.66%	13.93%	1.57%	0.14%
4	711,807	0%	✓	✓	75.07%	20.33%	4.6%	548,626	33.5%	66.5%	34.96%	28.39%	3.39%	2.69%	0.14%
5	711,809	0%	✓	✓	74.14%	21.66%	4.21%	580,661	54.42%	45.58%	17.7%	10.83%	16.26%	1.98%	0.17%
6	711,802	-0%	✓	✓	65.05%	30.29%	4.66%	553,607	50.04%	49.96%	13.82%	33.04%	2.43%	1.53%	0.1%
7	711,802	-0%	✓	✓	56.42%	39.7%	3.88%	557,579	67.48%	32.52%	15.25%	2.53%	13.85%	1.47%	0.1%
8	711,803	-0%	✓	✓	55.25%	40.58%	4.17%	542,055	60.91%	39.09%	21.39%	7.52%	8.86%	2.22%	0.18%
9	711,815	0%	✓	✓	53.9%	41.61%	4.49%	550,762	56.93%	43.07%	21.66%	4.8%	15.65%	2.19%	0.13%
10	711,807	0%	✓	✓	52.83%	42.53%	4.65%	551,239	69.49%	30.51%	10.61%	6.05%	12.57%	1.3%	0.11%
11	711,806	0%	✓	✓	55.67%	39.39%	4.95%	527,521	53.81%	46.19%	26.21%	11.92%	6.98%	2.37%	0.11%
12	711,804	-0%	✓	✓	44.63%	50.41%	4.97%	546,909	78.52%	21.48%	12.16%	3.62%	3.72%	1.89%	0.09%
13	711,806	0%	✓	✓	43.89%	51.34%	4.77%	554,012	79.08%	20.92%	8.7%	8.39%	1.76%	1.97%	0.09%
14	711,808	0%	✓	✓	38.6%	56.47%	4.93%	549,924	81.19%	18.81%	7.1%	8.11%	1.61%	1.74%	0.07%
15	711,806	0%	✓	✓	40.23%	54.64%	5.13%	552,466	80.99%	19.01%	3.69%	10.18%	3.01%	1.82%	0.11%
16	711,806	0%	✓	✓	35.1%	59.97%	4.94%	560,967	87.71%	12.29%	2.41%	6.27%	1.36%	1.79%	0.13%
17	711,808	0%	✓	✓	43.67%	52.15%	4.18%	554,804	76.94%	23.06%	3.38%	15.51%	1.62%	2.12%	0.14%
18	711,800	-0%	✓	✓	37.69%	57.96%	4.35%	565,740	81.37%	18.63%	3.68%	7.44%	5.14%	1.96%	0.11%
	711,806	0%	✓	✓	55.49%	39.9%	4.61%	555,526	61.24%	38.76%	16.2%	14.68%	6.62%	2.05%	0.12%

Notes
- Precinct Shapes: Census 2020
- Total Population: Census 2020

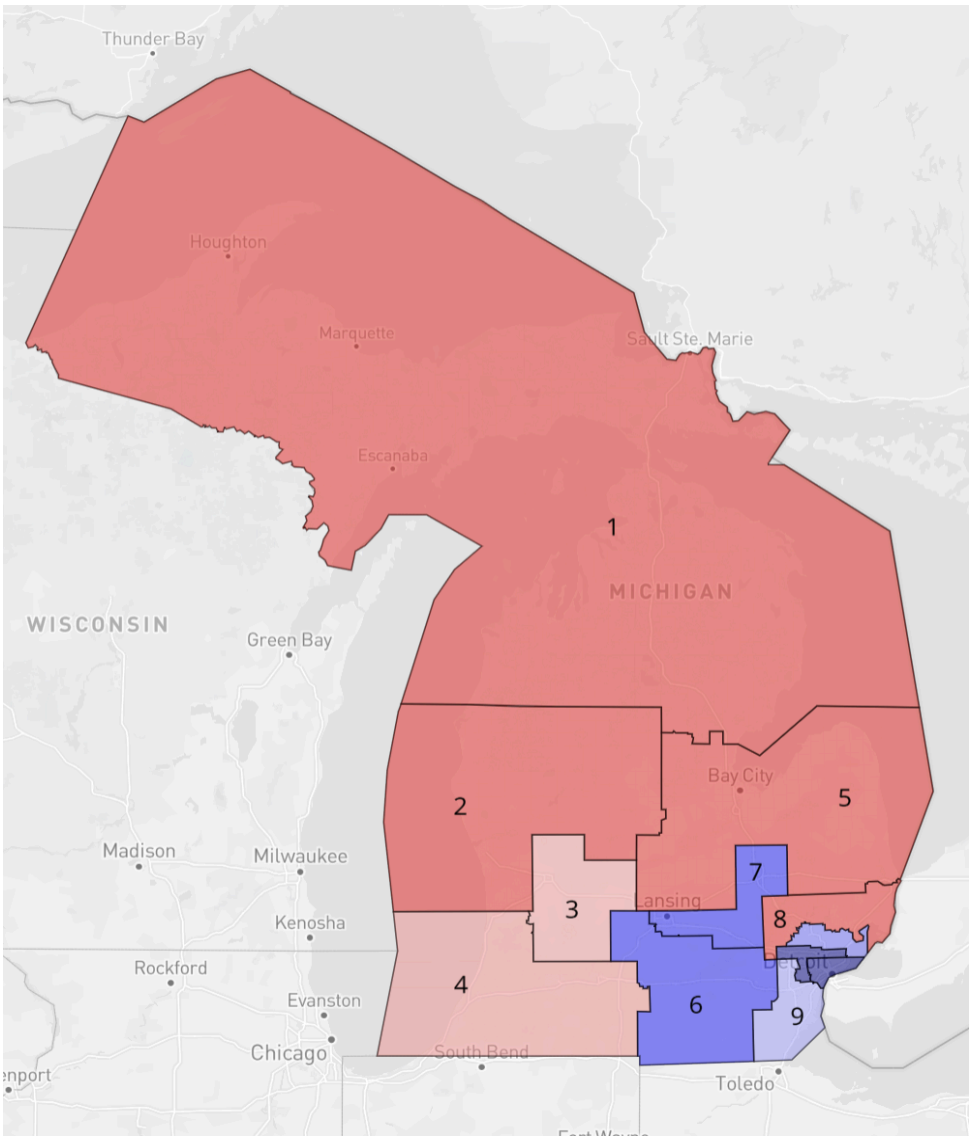
Figure 4-8. Illinois (+1) District Map and Demographics

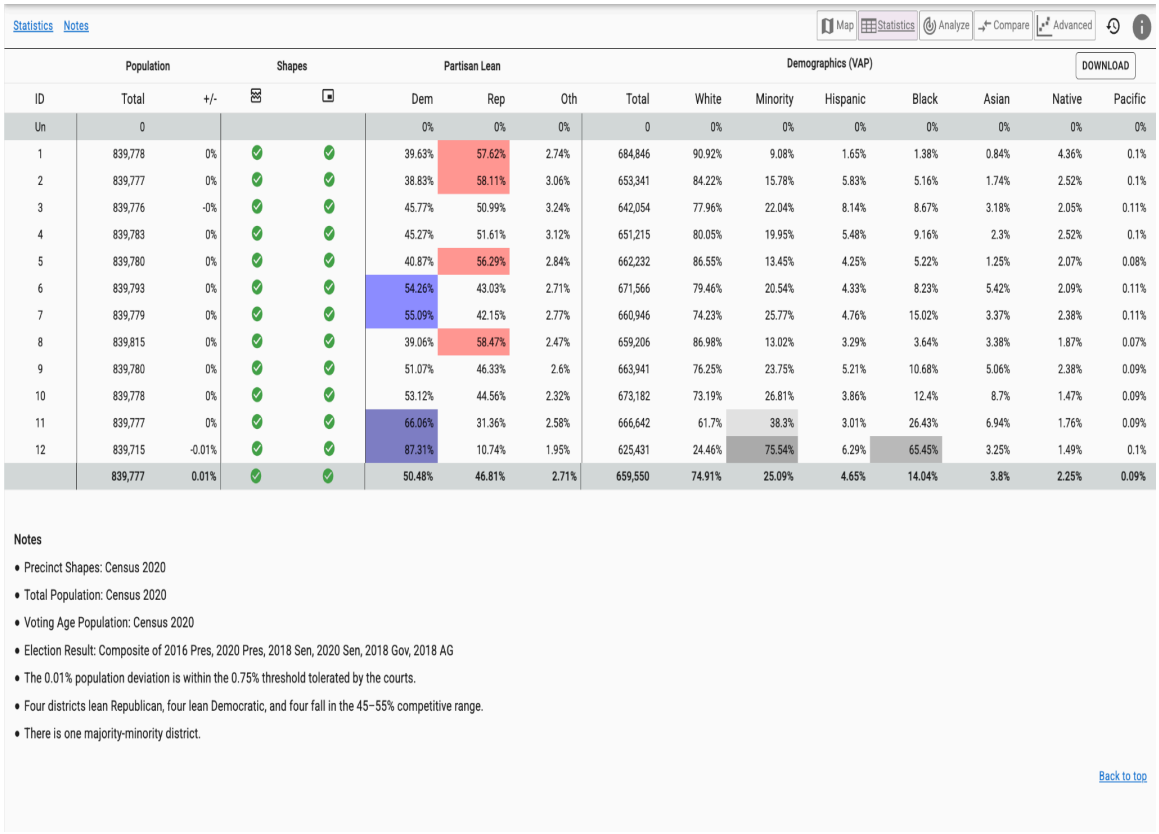
With the addition of an eighteenth district in Illinois, the number of competitive seats rises, along with an increase in majority-minority districts to four. Greater district granularity under this model enhances opportunities for minority representation. The partisan balance shifts modestly toward Democrats, with ten districts favoring Democrats, four favoring Republicans, and four falling within the competitive 45-55% range. Under the sixteen-district scenario, however, Republicans maintain an advantage in five districts while Democratic-leaning seats decline. Minority voting power is more concentrated in eighteen districts, where the most diverse district reaches a 93% minority voting-age population. Additional analysis reveals that Black and Hispanic populations remain more intact under the eighteen-district scenario, whereas their representation becomes more dispersed in the sixteen-district configuration.

Although these maps are manually drawn and may contain minor inaccuracies, they reveal key patterns regarding congressional apportionment's impact on political representation.

In Illinois, losing a congressional seat weakens minority representation, while gaining a seat facilitates more specialized districting and an increase in majority-minority districts. These findings align with national trends, which indicate that states losing seats often experience diminished minority representation due to the reallocation of voting blocs. A more detailed analysis of these patterns will be presented in Chapter 5, where cross-state comparisons and the legal and political implications of these findings will be further explored.

4.5: Case Study – Michigan





Statistics Notes

Map | Statistics | Analyze | Compare | Advanced

DOWNLOAD

	Population		Shapes		Partisan Lean			Demographics (VAP)							
ID	Total	+/-			Dem	Rep	Oth	Total	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0				0%	0%	0%	0	0%	0%	0%	0%	0%	0%	0%
1	839,778	0%	✓	✓	39.63%	57.62%	2.74%	684,846	90.92%	9.08%	1.65%	1.38%	0.84%	4.36%	0.1%
2	839,777	0%	✓	✓	38.83%	58.11%	3.06%	653,341	84.22%	15.78%	5.83%	5.16%	1.74%	2.52%	0.1%
3	839,776	-0%	✓	✓	45.77%	50.99%	3.24%	642,054	77.96%	22.04%	8.14%	8.67%	3.18%	2.05%	0.11%
4	839,783	0%	✓	✓	45.27%	51.61%	3.12%	651,215	80.05%	19.95%	5.48%	9.16%	2.3%	2.52%	0.1%
5	839,780	0%	✓	✓	40.87%	56.29%	2.84%	662,232	86.55%	13.45%	4.25%	5.22%	1.25%	2.07%	0.08%
6	839,793	0%	✓	✓	54.26%	43.03%	2.71%	671,566	79.46%	20.54%	4.33%	8.23%	5.42%	2.09%	0.11%
7	839,779	0%	✓	✓	55.09%	42.15%	2.77%	660,946	74.23%	25.77%	4.76%	15.02%	3.37%	2.38%	0.11%
8	839,815	0%	✓	✓	39.06%	58.47%	2.47%	659,206	86.98%	13.02%	3.29%	3.64%	3.38%	1.87%	0.07%
9	839,780	0%	✓	✓	51.07%	46.33%	2.6%	663,941	76.25%	23.75%	5.21%	10.68%	5.06%	2.38%	0.09%
10	839,778	0%	✓	✓	53.12%	44.56%	2.32%	673,182	73.19%	26.81%	3.86%	12.4%	8.7%	1.47%	0.09%
11	839,777	0%	✓	✓	66.06%	31.36%	2.58%	666,642	61.7%	38.3%	3.01%	26.43%	6.94%	1.76%	0.09%
12	839,715	-0.01%	✓	✓	87.31%	10.74%	1.95%	625,431	24.46%	75.54%	6.29%	65.45%	3.25%	1.49%	0.1%
	839,777	0.01%	✓	✓	50.48%	46.81%	2.71%	659,550	74.91%	25.09%	4.65%	14.04%	3.8%	2.25%	0.09%

Notes

- Precinct Shapes: Census 2020
- Total Population: Census 2020
- Voting Age Population: Census 2020
- Election Result: Composite of 2016 Pres, 2020 Pres, 2018 Sen, 2020 Sen, 2018 Gov, 2018 AG
- The 0.01% population deviation is within the 0.75% threshold tolerated by the courts.
- Four districts lean Republican, four lean Democratic, and four fall in the 45–55% competitive range.
- There is one majority-minority district.

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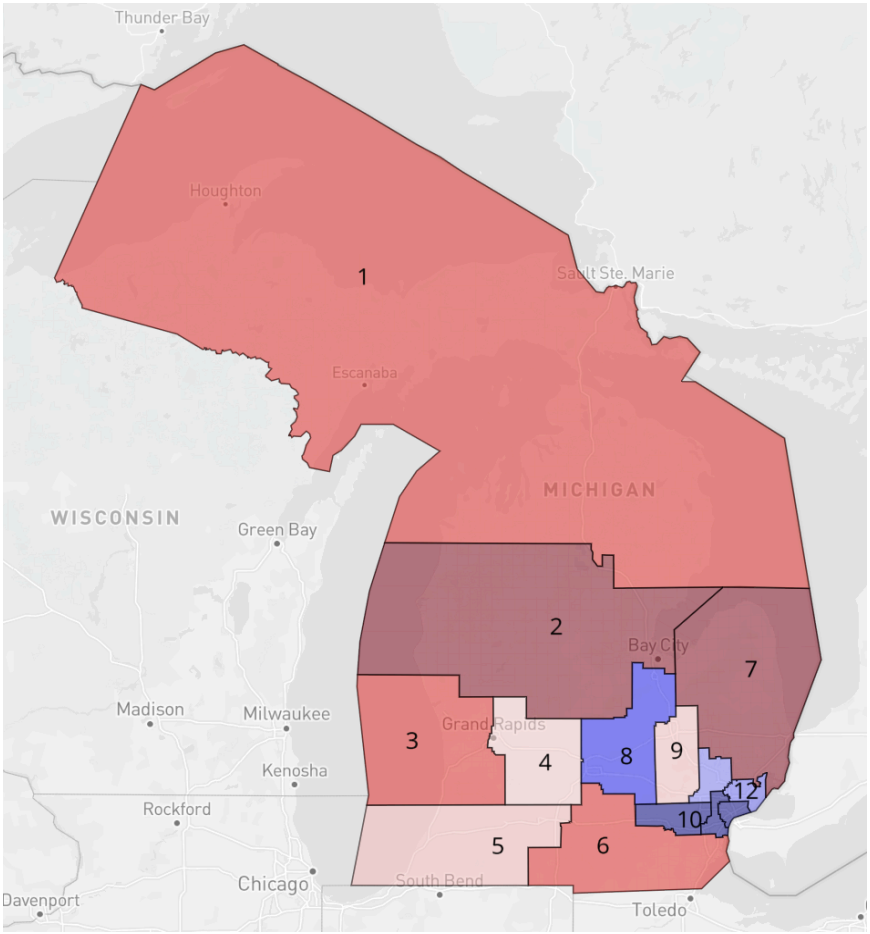
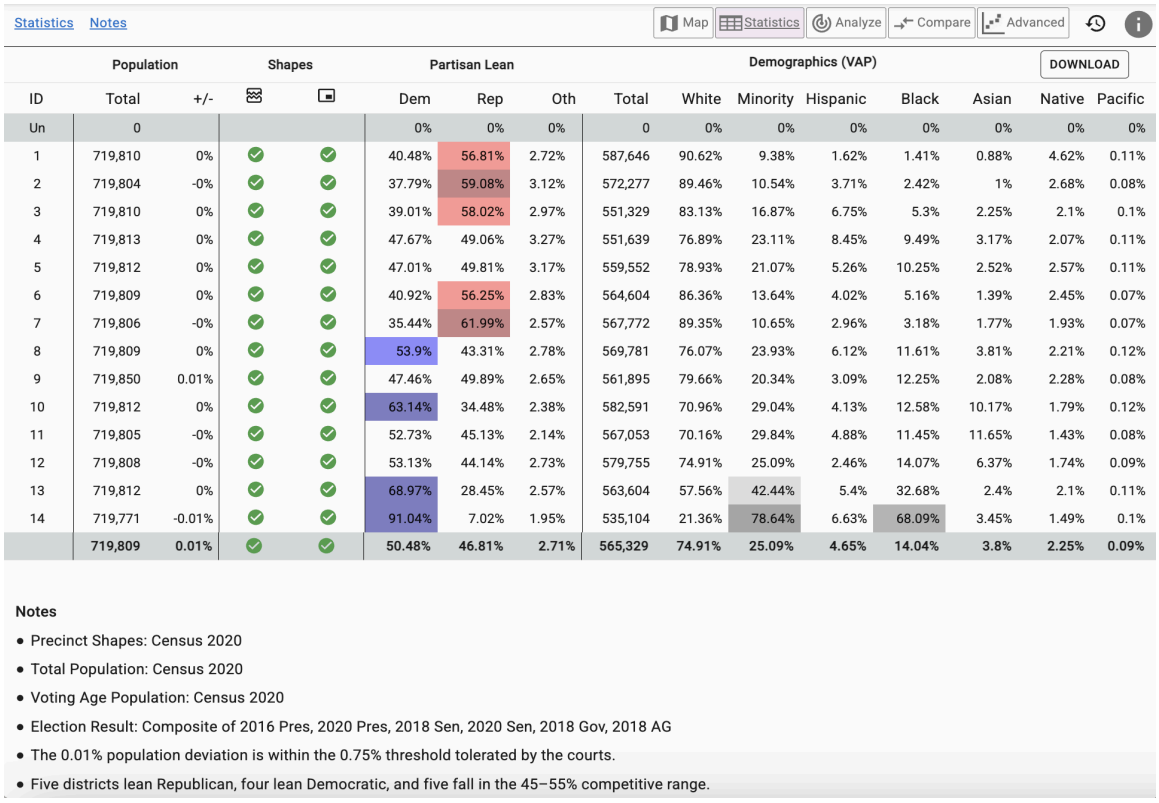
Figure 4-9. Michigan (-1) District Map and Demographics

Michigan stands as a racially diverse battleground state with an independent redistricting commission, providing a unique case to assess whether seat changes and nonpartisan districting improve or hinder equitable representation. Hypothetical maps drawn in DRA2020 illustrate two contrasting scenarios: one in which Michigan loses a congressional district, reducing the total from thirteen to twelve, and another where the state gains a seat, increasing the total to fourteen. Since an independent redistricting commission has been responsible for drawing Michigan's districts since the 2020 cycle, adjustments to district lines aim to balance partisan considerations with demographic representation. Despite the hand-drawn nature of these maps, which may introduce minor inaccuracies, the overarching trends offer valuable insights into the effects of

congressional seat changes. Reducing to twelve districts decreases the number of competitive seats, consolidating Republican-leaning areas and limiting Democratic opportunities outside historically strong urban centers. Four districts lean Republican, four favor Democrats, and four remain competitive within partisan lean's 45-55% range. Minority representation remains concentrated in a single district, with Detroit's metropolitan area retaining the state's only majority-minority district. Although losing a district marginally increases the minority population percentage in some remaining districts, it does not create new avenues for minority influence. The partisan breakdown further indicates that Republican-leaning districts become more secure, while Democratic-leaning districts consolidate more urban voters, maintaining competitiveness without significant gains.





Statistics Notes

Map | Statistics | Analyze | Compare | Advanced

	Population		Shapes		Partisan Lean			Demographics (VAP)							DOWNLOAD
ID	Total	+/-			Dem	Rep	Oth	Total	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0				0%	0%	0%	0	0%	0%	0%	0%	0%	0%	0%
1	719,810	0%	✓	✓	40.48%	56.81%	2.72%	587,646	90.62%	9.38%	1.62%	1.41%	0.88%	4.62%	0.11%
2	719,804	-0%	✓	✓	37.79%	59.08%	3.12%	572,277	89.46%	10.54%	3.71%	2.42%	1%	2.68%	0.08%
3	719,810	0%	✓	✓	39.01%	58.02%	2.97%	551,329	83.13%	16.87%	6.75%	5.3%	2.25%	2.1%	0.1%
4	719,813	0%	✓	✓	47.67%	49.06%	3.27%	551,639	76.89%	23.11%	8.45%	9.49%	3.17%	2.07%	0.11%
5	719,812	0%	✓	✓	47.01%	49.81%	3.17%	559,552	78.93%	21.07%	5.26%	10.25%	2.52%	2.57%	0.11%
6	719,809	0%	✓	✓	40.92%	56.25%	2.83%	564,604	86.36%	13.64%	4.02%	5.16%	1.39%	2.45%	0.07%
7	719,806	-0%	✓	✓	35.44%	61.99%	2.57%	567,772	89.35%	10.65%	2.96%	3.18%	1.77%	1.93%	0.07%
8	719,809	0%	✓	✓	53.9%	43.31%	2.78%	569,781	76.07%	23.93%	6.12%	11.61%	3.81%	2.21%	0.12%
9	719,850	0.01%	✓	✓	47.46%	49.89%	2.65%	561,895	79.66%	20.34%	3.09%	12.25%	2.08%	2.28%	0.08%
10	719,812	0%	✓	✓	63.14%	34.48%	2.38%	582,591	70.96%	29.04%	4.13%	12.58%	10.17%	1.79%	0.12%
11	719,805	-0%	✓	✓	52.73%	45.13%	2.14%	567,053	70.16%	29.84%	4.88%	11.45%	11.65%	1.43%	0.08%
12	719,808	-0%	✓	✓	53.13%	44.14%	2.73%	579,755	74.91%	25.09%	2.46%	14.07%	6.37%	1.74%	0.09%
13	719,812	0%	✓	✓	68.97%	28.45%	2.57%	563,604	57.56%	42.44%	5.4%	32.68%	2.4%	2.1%	0.11%
14	719,771	-0.01%	✓	✓	91.04%	7.02%	1.95%	535,104	21.36%	78.64%	6.63%	68.09%	3.45%	1.49%	0.1%
	719,809	**0.01%**	✓	✓	**50.48%**	**46.81%**	**2.71%**	**565,329**	**74.91%**	**25.09%**	**4.65%**	**14.04%**	**3.8%**	**2.25%**	**0.09%**

Notes

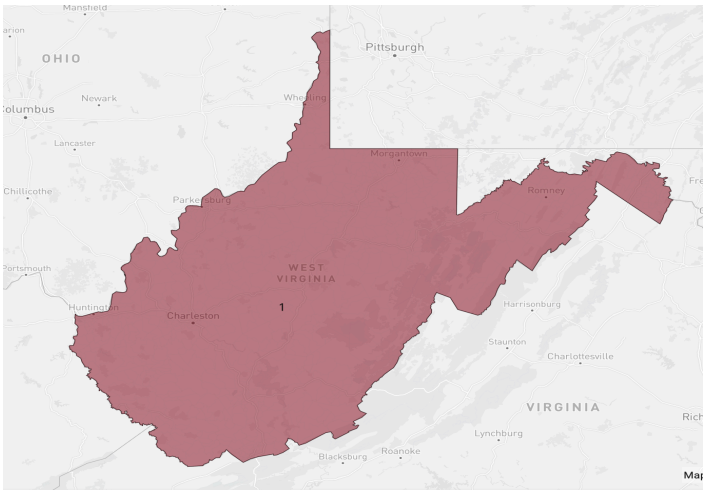
- Precinct Shapes: Census 2020
- Total Population: Census 2020
- Voting Age Population: Census 2020
- Election Result: Composite of 2016 Pres, 2020 Pres, 2018 Sen, 2020 Sen, 2018 Gov, 2018 AG
- The 0.01% population deviation is within the 0.75% threshold tolerated by the courts.
- Five districts lean Republican, four lean Democratic, and five fall in the 45–55% competitive range.

Figure 4-10. Michigan (+1) District Map and Demographics

Adjusting to fourteen congressional districts in Michigan alters the distribution of partisan and demographic groups, strengthening representation for minority populations. A fourteenth district allows for a more even distribution of voters, resulting in five Republican districts, four Democratic-leaning districts, and five competitive seats. The number of majority-minority districts rises from one to two, driven by boundary adjustments incorporating a higher percentage of nonwhite voters in urban and suburban areas. Detroit and its surrounding communities experience a notable increase in their influence, as additional representation prevents minority voters from being dispersed across multiple marginally competitive districts. Losing a congressional seat leads to fewer competitive districts and consolidation of Republican strongholds, whereas gaining a district enhances opportunities for Democratic candidates and

minority representation. Ensuring compliance with legally mandated population deviations, Michigan's independent redistricting commission continues to shape fair districting outcomes. However, the contrasting effects of losing and gaining a seat demonstrate that apportionment changes are decisive in determining the state's balance of political power. Adding a district creates greater electoral opportunities for historically underrepresented communities, while losing a district reinforces existing partisan dynamics rather than fostering new competitive landscapes.

4.6: Case Study – West Virginia



Statistics Notes | Map | Statistics | Analyze | Compare | Advanced | DOWNLOAD

	Population		Shapes		Partisan Lean			Demographics (VAP)							
ID	Total	+/-			Dem	Rep	Oth	Total	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0				0%	0%	0%	0	0%	0%	0%	0%	0%	0%	0%
1	1,793,716	0%	✓	✓	32.57%	64.71%	2.72%	1,432,932	90.24%	9.76%	1.64%	4.39%	1.13%	2.03%	0.08%
	1,793,716	**0%**	✓	✓	**32.57%**	**64.71%**	**2.72%**	**1,432,932**	**90.24%**	**9.76%**	**1.64%**	**4.39%**	**1.13%**	**2.03%**	**0.08%**

Notes

- Precinct Shapes: Census 2020
- Total Population: Census 2020
- Voting Age Population: Census 2020
- Election Result: Composite of 2016 Pres, 2020 Pres, 2018 Sen, 2020 Sen, 2020 Gov, 2020 AG
- One district leans Republican, none lean Democratic, and none fall in the 45–55% competitive range.

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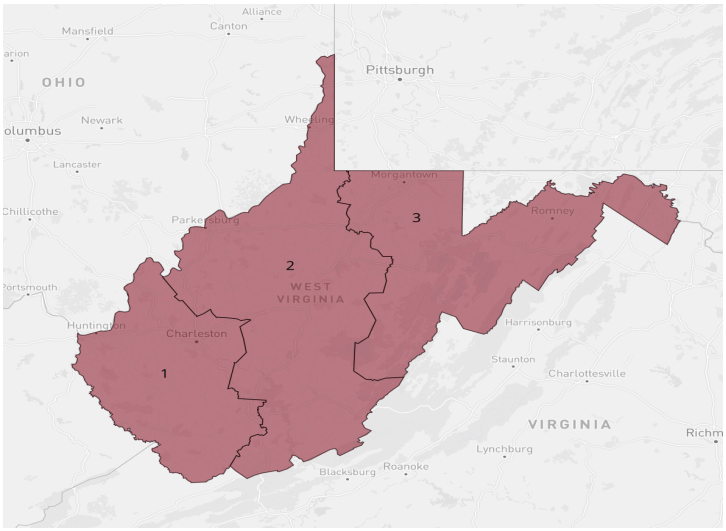
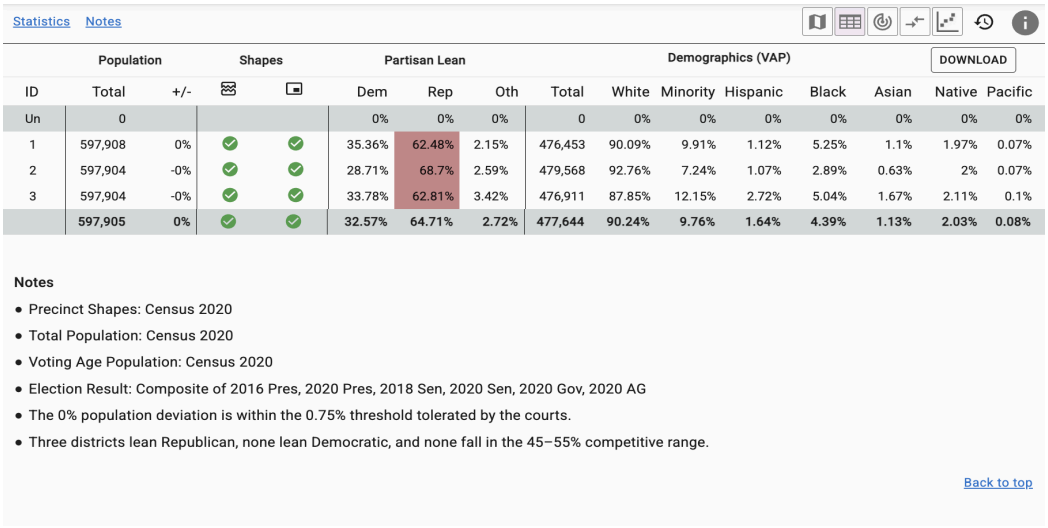
Figure 4-11. West Virginia (-1)
District Map and Demographics

West Virginia serves as a small, safe Republican state with a homogenous population, offering insight into how apportionment shifts affect partisan consolidation in rural, less-diverse environments. Examining the transition from two congressional districts to a single at-large district and the effects of adding a third district provides insight into the state's partisan composition and demographic characteristics. Since the district boundaries were manually drawn, minor inaccuracies may exist, though they still offer valuable context for understanding redistricting trends. A shift from two congressional districts to a single at-large district consolidates representation statewide, eliminating the possibility of intrastate partisan competition. Under this configuration, the at-large district maintains a strong Republican lean, with a partisan breakdown of 64.71% Republican, 32.57% Democratic, and 2.72% for other parties. Removing district-level divisions further entrenches Republican dominance, preventing the formation of competitive seats. Demographically, the at-large district remains overwhelmingly white (90.24%), with minority voters comprising only 9.76% of the voting-age population. Among the minority population, Black voters make up 4.39%, while Native American and Asian populations account for 2.03% and 1.13%, respectively. Since no single region can be drawn to increase minority influence, their voting power remains significantly limited under an at-large district.





Statistics Notes

	Population		Shapes		Partisan Lean			Demographics (VAP)							
ID	Total	+/-			Dem	Rep	Oth	Total	White	Minority	Hispanic	Black	Asian	Native	Pacific
Un	0				0%	0%	0%	0	0%	0%	0%	0%	0%	0%	0%
1	597,908	0%	✓	✓	35.36%	62.48%	2.15%	476,453	90.09%	9.91%	1.12%	5.25%	1.1%	1.97%	0.07%
2	597,904	-0%	✓	✓	28.71%	68.7%	2.59%	479,568	92.76%	7.24%	1.07%	2.89%	0.63%	2%	0.07%
3	597,904	-0%	✓	✓	33.78%	62.81%	3.42%	476,911	87.85%	12.15%	2.72%	5.04%	1.67%	2.11%	0.1%
	597,905	**0%**	✓	✓	**32.57%**	**64.71%**	**2.72%**	**477,644**	**90.24%**	**9.76%**	**1.64%**	**4.39%**	**1.13%**	**2.03%**	**0.08%**

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Notes

- Precinct Shapes: Census 2020
- Total Population: Census 2020
- Voting Age Population: Census 2020
- Election Result: Composite of 2016 Pres, 2020 Pres, 2018 Sen, 2020 Sen, 2020 Gov, 2020 AG
- The 0% population deviation is within the 0.75% threshold tolerated by the courts.
- Three districts lean Republican, none lean Democratic, and none fall in the 45–55% competitive range.

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Figure 4-12. West Virginia (+1)
District Map and Demographics

The transition to three congressional districts in West Virginia establishes more localized regions while maintaining a strong Republican advantage. Across all three districts, the Republican vote share exceeds 60%, with District 2 demonstrating the highest Republican lean at 68.7%. Even with additional representation, Democratic candidates continue to face steep electoral obstacles. Some demographic variation emerges under the three-district configuration, though minority representation remains relatively low. District 3 contains the highest minority population at 12.15%, whereas Districts 1 and 2 stay below 10%. Despite this redistribution, no district qualifies as majority-minority, and none falls within the competitive range of 45-55% for either party. These congressional district shifts ultimately produce little change in West Virginia's partisan balance. Reducing the state to a single at-large district consolidates Republican control while eliminating opportunities for intra-party competition. Introducing a third district distributes representation but does not significantly enhance competitiveness or minority electoral influence. Entrenched partisan dynamics continue to define West Virginia's congressional landscape, where

electoral outcomes remain largely predetermined by demographic composition and historical voting trends.

4.7: Summary of Findings

The state-level redistricting simulations generated using DRA2020 offer a powerful lens for examining how congressional apportionment shapes both partisan control and minority representation. Across the six case studies—Montana, North Carolina, Oregon, Illinois, Michigan, and West Virginia—clear patterns emerged that reinforce the central theoretical claims presented earlier in this thesis. The analysis revealed consistent structural tendencies by simulating scenarios where each state either gained or lost a congressional seat. Specifically, states that gained seats could create new districts that entrenched partisan control or expanded minority influence. In contrast, those who lost seats often did so at the expense of competitiveness and descriptive representation. The simulations illustrate how small numerical shifts in apportionment can cascade into large representational consequences, especially when combined with partisan map-drawing power. Though hand-drawn and subject to minor imprecision, the maps closely mirrored real-world demographic and electoral trends, allowing for robust comparisons between hypothetical and actual outcomes. This reinforces that apportionment outcomes are not predetermined by population data alone, but are actively shaped by political actors within institutional constraints. These findings offer compelling evidence that the apportionment process is far from neutral—it interacts dynamically with partisan strategy, racial geography, and institutional design.

Results from these simulations strongly support the Partisan Gains Hypothesis (H1), which argues that states gaining congressional seats would consolidate partisan advantage for the dominant party. In nearly every case, states that added a district used the opportunity to protect

existing strongholds or expand their influence into new territory. For instance, North Carolina's hypothetical fifteenth seat allowed for the creation of an additional Democratic-leaning district in a diversifying urban corridor. At the same time, Montana's third district provided Republicans with a favorable new seat while modestly increasing competitiveness. In Illinois and Oregon, both Democratic-leaning states, the addition of seats allowed mapmakers to reinforce existing partisan advantages by carefully distributing urban voters and minimizing potential Republican inroads. Conversely, states that lost seats—such as West Virginia and Michigan—were forced to consolidate their districts, often absorbing competitive or opposition-leaning areas into safer districts. These patterns confirm that apportionment does not merely redistribute population but reallocates political opportunity, often with partisan intent. These trends affirm that apportionment-induced redistricting is not simply a demographic exercise but a political opportunity leveraged by those in power to shape electoral outcomes for the coming decade. In this way, the DRA2020 findings lend empirical weight to the broader academic consensus on partisan cartographic manipulation as a strategic response to structural change.

DRA2020 simulations also confirm the Minority Representation Hypothesis (H2), particularly in contexts where racial or ethnic minorities are sufficiently numerous and spatially concentrated to influence district boundaries. In Illinois and Michigan, for example, gaining a district enabled the creation of new majority-minority or plurality-minority districts, particularly in urban and suburban regions with large Black or Hispanic populations. The eighteen-district configuration in Illinois expanded the number of districts where minority voters comprised a majority of the Voting-Age Population (VAP), improving prospects for descriptive representation. However, the extent of these gains depended heavily on who controlled the redistricting process. States with partisan redistricting authorities, such as Illinois and North

Carolina, often achieved more aggressive minority consolidation than those with independent commissions, like Michigan and Montana, where institutional constraints limited overtly race-conscious districting. In states that lost seats, such as West Virginia or Michigan's twelve-seat configuration, descriptive representation suffered due to merging minority communities into larger, less favorable districts. This underscores a key theme of this thesis: demographic growth alone does not guarantee increased representation without intentional district design that prioritizes minority communities. These findings suggest that while population growth among minority communities is necessary for improving representation, it is not sufficient; the structure and incentives of the redistricting process play a decisive role in whether those gains are realized. In sum, institutional context—not just population data—determines whether racial equity is advanced or undermined through redistricting.

Finally, the DRA2020 findings align with the Disproportionate Impact Hypothesis (H3), which contends that the fixed size of the U.S. House exacerbates representation disparities, particularly in states experiencing population stagnation or decline. In states like West Virginia, which lost a seat, transitioning to an at-large district eliminated any possibility of intrastate competition. It erased localized representation, further entrenching one-party control. Similarly, the contraction from thirteen to twelve districts in Michigan weakened competitiveness and undermined the influence of minority communities, as fewer districts were available to distribute diverse populations. These dynamics demonstrate how the zero-sum nature of apportionment—where one state's gain is another's loss—has tangible consequences for electoral equity. Because House seats are capped at 435, states losing population face difficult trade-offs, often resulting in the dilution of politically or demographically distinct communities. This bottleneck in representational growth has created a competitive and often regressive environment

where diversity and proportionality are sacrificed in favor of expediency and political survival. The findings underscore a broader systemic issue: under a fixed-house framework, apportionment changes function as reflections of population movement and as redistributions of political opportunity. This reality suggests that as the nation continues to diversify and shift demographically, the structural rigidity of the apportionment system will increasingly distort equitable representation unless reform is considered. Ultimately, these simulations provide evidence that institutional inertia and static congressional capacity are barriers to inclusive democratic governance in the 21st century.

A key insight from comparing hand-drawn maps to politically enacted maps is the degree of potential representational improvement under alternative configurations. While official maps were often shaped by partisan goals—particularly in states like North Carolina and Illinois—the hand-drawn maps produced through neutral criteria, such as compactness, population equality, and racial clustering, revealed pathways to greater electoral competitiveness and more equitable descriptive representation. The contrast between official and simulated maps illustrates how institutional safeguards—or their absence—determine whether redistricting promotes fairness or reinforces dominance. The divergence between official and simulated outcomes was modest in states with independent commissions, such as Michigan and Montana. However, the gap was more pronounced in partisan-controlled states, with official maps more likely to fragment minority communities or concentrate voters for partisan gain.

This comparison reinforces the theoretical frameworks outlined in Chapter 1. Specifically, it confirms that the outcomes of congressional apportionment are not predetermined by demographic trends alone but are mediated by the structures through which redistricting is implemented. My simulations serve as counterfactuals demonstrating what could have occurred

under alternative institutional arrangements. They support the Partisan Gains Hypothesis by showing how newly created seats can be drawn to entrench or balance partisan control. They also support the Minority Representation Hypothesis, as hand-drawn maps frequently revealed opportunities for new majority-minority or influence districts that official plans did not pursue. These comparisons indicate that the shape of political representation is contingent not only on population movement but also on the political will embedded within redistricting rules and practices.

Table 1. Summary of DRA2020
Simulation Results by State

State	Seat Change	H1: Partisan	H2: Minority	H3: Impact	Takeaways
MT	-1 and +1	GOP solidified in -1; increased competition in +1	Native influence improved slightly in +1	-1 erased district diversity	Small shifts = big consequences
NC	-1 and +1	Dem advantage grew in +1; GOP consolidated in -1	Minority strength improved with +1	-1 weakened minority clusters	Growth can help or hurt
OR	-1 and +1	Dems enhanced control in -1	Minor Hispanic gains in +1	-1 reduced competition	Gains support fairness
IL	-1 and +1	Dems preserved urban dominance	+1 created new majority-minority district	Loss diluted diversity in metro areas	Partisan actors shape equity
MI	-1 and +1	Balanced; commission limited gains	+1 allowed a second majority-minority district	-1 removed competitive seats	Commissions limit extreme change
WV	-1 and +1	GOP dominance persisted in both	Low diversity limited gains	-1 created at-large district	Rural states face few options

Note: Table summarizes state-level DRA2020 simulations and aligns findings with the three central hypotheses discussed in Chapter 1

CHAPTER 5

Conclusion

Congressional apportionment is foundational in shaping political representation in the United States. As this thesis has shown, the redistribution of House seats following each decennial census has far-reaching implications for partisan control, electoral competitiveness, and minority representation. While apportionment is driven by population change, the outcomes are heavily shaped by political actors and institutional mechanisms—most notably, the following redistricting process. Empirical findings from redistricting simulations and state case studies demonstrate that states losing congressional seats often consolidate partisan strongholds, entrenching the power of the dominant party and limiting electoral competition. On the other hand, states that gain seats may experience more variable outcomes, including opportunities for competitive districts and minority influence—but these are far from guaranteed. A central theme throughout this thesis is the asymmetry of apportionment effects: losses often produce sharper partisan and representational consequences than gains.

The role of redistricting institutions emerged as a critical factor in shaping outcomes. Independent commissions, particularly in states like Michigan and Montana, were more likely to preserve competitive districts and uphold minority representation. In contrast, partisan-controlled redistricting processes often diluted minority voting power or strategically fragmented opposition voters, reinforcing existing power structures. These patterns highlight how apportionment is not merely a numerical adjustment but a catalyst for political advantage or exclusion, depending on the mechanisms through which redistricting is conducted. The implications extend beyond

partisan competition. Despite significant demographic growth in many minority communities, this did not consistently translate into increased descriptive representation. The 2022 redistricting cycle showed that new majority-minority districts were rare and unevenly distributed—determined mainly by political control rather than population equity. Legal challenges, such as Allen v. Milligan (2023), underscore the continued need for Voting Rights Act protections and judicial oversight to ensure fair representation.

These findings emphasize the urgent need for structural reforms from a policy perspective. National standards for redistricting transparency, stronger enforcement of voting rights protections, and the expansion of independent redistricting commissions could mitigate the distortions observed in recent cycles. Citizen-led ballot initiatives and judicial review offer viable paths forward, particularly in states where legislative reform is unlikely. While independent commissions are not a panacea, their broader adoption—paired with safeguards for transparency and accountability—may reduce the most egregious forms of gerrymandering. Looking ahead to the 2030 Census, several challenges and opportunities emerge. First, the growing mismatch between population growth and congressional representation raises questions about the fixed size of the House. Representational disparities may worsen without serious debate about House expansion or structural reforms. Second, the persistence of racial vote dilution—even in states experiencing minority population growth—suggests that voting rights protections remain insufficient without active enforcement. Third, the politicization of redistricting highlights the importance of nonpartisan governance, especially as court decisions continue to shape the legal boundaries of electoral fairness.

This thesis also identifies several limitations and directions for future research. While this study offers a comprehensive analysis of apportionment's effects on partisan and minority

representation, it relies on aggregate-level electoral data and hand-drawn maps that, while informative, cannot fully capture district-level nuance or voter behavior. Future studies should incorporate voter-level data, finalized redistricting plans, and survey research to better understand how voters respond to new district boundaries. Additionally, research could explore the impact of redistricting on state legislatures, examine longitudinal trends across multiple census cycles, and assess how divided governments influence redistricting outcomes. Another promising study area is the intersection between legal challenges and redistricting outcomes. Do court-ordered maps produce fairer representation or merely delay partisan entrenchment? Comparing outcomes across judicial, legislative, and commission-drawn maps could provide valuable insights into the role of institutional checks in safeguarding democracy.

Finally, as the United States continues to experience population shifts—including urbanization, generational turnover, and regional migration—the long-term direction of electoral politics remains uncertain. Whether institutions can adapt to these changes will determine the distribution of political power and the legitimacy of democratic governance. Ensuring that apportionment and redistricting processes reflect the nation's evolving demographics is essential for upholding fair and representative institutions. Apportionment and redistricting must be scrutinized as processes beyond simple numerical adjustments. Their impact is felt not only in the short term but across decades of policymaking, electoral outcomes, and civic participation. As the American electorate diversifies, the stakes for equitable representation only grow. This thesis contributes to that conversation and underscores the importance of reform, vigilance, and innovation in pursuing a truly representative democracy.

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