Make redistricting great again

A comparative study of the decennial congressional redistricting process and partisan bias from 2012-2016

Vilde Marie Ørnung

Master thesis at the Department of Political Science
Faculty of Social Sciences

UNIVERSITY OF OSLO

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IV

Abstract

This thesis is a comparative study of the congressional redistricting process in 43 states and an analysis on partisan bias in the U.S. House of Representatives elections in 2012, 2014 and 2016. Partisan bias is, generally speaking, bias beneficial to one party in the translation of votes to seats in an election. The analysis is based on secondary analysis of both qualitative and quantitative data. The renowned metrics of the efficiency gap and partisan symmetry is used to measure partisan bias. The study has shown that politicians in a majority of states redraws congressional district lines every ten years contrary to using independent commissions to draw the lines. In 2011, the Republican Party drew voting districts in 17 states and some of these states have among the highest bias measured in all three elections after redistricting. In the literature, there is some disagreement on what is causing this bias; partisan gerrymandering or self-sorting of voters, or both. In 2018, the United States Supreme Court will decide whether partisan gerrymandering is constitutional, and thereby affecting the redistricting process and possibly influencing the ability of voters to choose their leaders.

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The process of writing this thesis has been, to use a cliché, a rollercoaster in many ways. Never have I been more frustrated or worked harder on anything. It has been challenging, but also so much fun to write about something that has really interested me ever since I saw the first episodes of the West Wing in high school. I am glad I listen to my heart when deciding on the subject for this master thesis.

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All the errors in this thesis are my own.

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1 Introduction

As vested in the United States Constitution (1787), states have to redraw their congressional districts every ten years following the decennial census. *Congressional redistricting* is a process of redrawing voting districts for the elections to the United States House of Representatives (U.S. House) in each state. Population data from the decennial census provide the information which the congressional district lines are based on. The redistricting process varies in each state, but all states have chosen a method of legislative redistricting by politicians or by commissions.

The Connecticut Compromise reached at the Constitutional Convention in 1787 decided that the U.S. House was to represent the people as a whole, and the United States Senate was to serve the interests of the states. Moreover, the U.S. House was to be elected by the people, and the U.S. Senate to be elected from state governments. Representatives to the U.S. House are elected for a two-year term in single-member districts in a plurality voting system, popularly referred to as *winner-takes-all elections*.

To study the redistricting process and partisan bias is important because it is crucial to gauge if Americans have a fair chance at electing their representatives in government. In fact, many argue that the decennial redistricting process can seal the faith of the congressional elections for a ten year period. Further, it has been claimed that the redistricting process in 2011 contributed to voters not electing their politicians, but rather politicians electing their voters through manipulation of districts. Additionally, depending on how congressional lines are drawn, some voters may have a reduced chance at electing their preferred candidate than their neighbors. A society where the voters assume that their vote does not count contributes to reducing the faith and support of democratic institutions and by that, creating a democratic deficit.

The issue of *partisan gerrymandering* – referred to as the manipulation of voting districts in favor of one party at the expense of the other has been a hotly debated issue in American politics for decades. Gerrymandering occurs in states with a legislative redistricting procedure where politicians are drawing the districts. Furthermore, the redistricting process in 2011, which was dominated by the Republican Party in a majority of states, saw a spike in gerrymandering in swing states. Many scholars argue gerrymandering will impact elections to

the U.S. Congress until next redistricting in 2021. However, others contend that while gerrymandering does impact elections, the phenomenon of *self-sorting* among voters has a larger influence. The literature shows that Americans are segregating themselves based on social and political beliefs, Democratic voters chose to reside in urban areas in industrialized states, whereas Republican voters live in rural parts of the country. Consequently, this tendency creates a natural bias beneficial for the Republican Party.

Regardless of the reason, the congressional elections in 2012-2016 have shown a *partisan bias* in favor of the Republican Party in a majority of states. Considering this, districting plans can create a bias favoring one party when there is an asymmetry in the relationship between votes cast for a party and how these votes are translated into seats. As a result, a party can receive a minority of the votes cast in an election, but win a majority of the seats. Further, there is an ongoing academic debate on how to measure partisan bias. No metrics have been accepted by the United States Supreme Court as a valid standard to measure bias in cases of possible partisan gerrymandering. However, several metrics are regarded as valid statistical measurements in political science. As a result, to measure partisan bias in states with a decennial redistricting procedure, two of the most well-known metrics, partisan symmetry, developed by Gelman and King (1994) and the efficiency gap, developed by Stephanopoulos and McGhee (2014) will be applied.

1.1   Research question

The research question is based on the literature and research presented in chapter 2. First, the literature highlights the connection between redistricting process and partisan bias. Further, an ongoing discussion among academics relates to whether partisan bias is caused by gerrymandering or self-sorting of voters or both. Second, there is a debate on which statistical instruments best suited to measure partisan bias. Third, among political scientists, there is an academic consensus that it did occur gerrymandering in many states dominated by the Republican Party[1] in 2011. However, why some states have produced more bias than others has not been analyzed. The main subject of interest in this thesis is, therefore, the phenomenon of partisan bias. Consequently, it is necessary to have a threefold research question;

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[1] The Republican Party is sometimes referred to as the GOP (Grand Old Party)

Every decade the map of congressional districts in the United States are adjusted or re-drawn. What characterizes the different congressional redistricting processes? To what extent does the electoral map create partisan bias in congressional election results in the states with a decennial redistricting procedure? If we concentrate on redistricting processes in states dominated by Republicans in 2011, why do only some of them have consistently biased election results in the period of 2012-2016 in favor of Republicans?

When choosing research strategy, it is preferred to select an approach with the purpose of giving the best answer as possible to the research question (Hellevik, 2011, p. 36). Therefore, it can be clarifying to have a more in-depth look different parts of the research question. To answer each part in a most satisfying way possible, it necessitates different research strategies.

1. *Every decade the map of congressional districts in the United States are adjusted or re-drawn. What characterizes the different congressional redistricting processes?*

Here, it is necessary to do a descriptive large-N analysis by mapping the entire redistricting process in all the states with a decennial redistricting procedure to answer this part of the research question. Moreover, descriptive studies aim to give information about cases on different sublevels in a study. They are often analytical and comparative (Grønmo, 2011, p. 356). The 43 states account for the total population of cases in the thesis because these states have a decennial redistricting procedure, the remaining seven states have only one congressional district. The aim is to give a broad comparative description of the procedures in each state using qualitative data that compares both longitudinally and geographically. The results and conclusions will contribute in deriving key figures that will be used to answer part two and three of the research question.

2. *To what extent does the electoral map create partisan bias in congressional election results in the states with a decennial redistricting procedure?*

Further, using the categorization derived from the description of the redistricting procedures, the second part of the research question will connect the independent variables describing redistricting to partisan bias. By using the term *partisan bias* in this context is associated with bias that is beneficial to one party in the translation of votes to seats in elections.

Consequently, the metrics of the efficiency gap and partisan symmetry will be used to measure *partisan bias* of the redistricting plans in each state. The comparative analysis will show if any parties are benefiting to a significant degree from the design of the congressional districts in the period from 2012-2016, covering three election cycles. The independent variables used in this analysis are redistricting model, party dominance, and state size.

However, the efficiency gap is difficult to apply when comparing smaller states. To face this challenge, only 26 states with more than six congressional districts will be included in the efficiency seat gap analysis in chapter 7. These 26 states account for 85 percent of all congressional districts in the United States. States with fewer than six congressional districts are excluded from the analysis. In the partisan symmetry analysis, states with three or more congressional districts are included.

> 3. *If we concentrate on redistricting processes in states dominated by Republicans in 2011, why do only some of them have consistently biased election results in the period of 2012-2016 in favor of Republicans?*

The results from the analysis of partisan bias in chapter 7 will show that states with legislative procedures and Republican dominance produce the most bias in the timeframe. However, not all the states have the same level of bias. Therefore, this chapter will have a comparative analysis of the 12 Republican-drawn states with more than six congressional districts. They are separated based on the case selection method of the Possibility Principle. Moreover, it is considered more appropriate to apply a qualitative approach to this part of the study which has a more explorative character. Since the analysis is explorative, this will only lead to laying the ground work for future studies that should be more systematic. There will be a discussion of motives and opportunities of gerrymandering, combined with the increasing polarization in the electorate. Further, a general discussion of the disappearing bias theory of Goedert (2015) and geographical bias with an emphasis on compactness and urbanization in each state. Next, Pennsylvania and Alabama's congressional vote will be compared to the presidential vote in 2016 to analyze if there are patterns in the distribution of voters that can explain the differences in bias.

1.2   Limitations

There have been made several limitations throughout this thesis because of time and space constraints. Therefore, this thesis will not look into state legislative redistricting and state legislative gerrymandering. Further, it will neither discuss the process of apportionment in detail or racial gerrymandering, even though the latter is mentioned where it is appropriate. The period has been limited to the redistricting process in 2011 and three U.S. House elections in 2012, 2014 and 2016. Additionally, states with more than one congressional district have been excluded from the thesis.

1.3   Methodology

This thesis aims to understand the phenomenon of partisan bias more in-depth. Therefore, it is essential first to explain and understand the redistricting process in the United States. Second, how the electoral map can create partisan bias in congressional elections and third, why certain states with a Republican-drawn congressional districts creates a high asymmetry when translating votes into seats in favor of the Republican Party and why others do not. As a result, this thesis is both a descriptive and exploratory comparative study.

Moreover, it is *descriptive* in the sense that it is done a large-N mapping of characteristics of all the cases on a few variables. It is *exploratory* in the third part of the research question because there does not exist a distinct political science theory in the area of interest (Hellevik, 2011, p. 88). Most of the theory applied in this thesis is based on previous research on gerrymandering and self-sorting. Additionally, the research method is *extensive* when describing the whole universe of states and the partisan bias that is occurring in the states. This research strategy is preferred because it provides the opportunity to see variation among the units when comparing them (Hellevik, 2011, p. 97). Further, the thesis has a more *intensive* approach when trying to view the states more holistically to explain what can contribute to explain variations in bias (Hellevik, 2011, p. 98).

1.4   Data

The data applied in this thesis is a combination of qualitative and quantitative material. More specifically, the qualitative part of the thesis is based on written primary and secondary sources. This data is related to different redistricting procedures, court rulings, and academic literature on gerrymandering and geographical bias. Also, analysis and reports from institutions that study elections and news sources have been applied. Moreover, the academic literature referenced is with some exceptions, primarily from post-2010. This was done for two reasons. First, because it is more useful to apply up-to-date research and second, because new theories and approaches have emerged in the wake of the redistricting process in 2011.

Further, the quantitative data is based on secondary sources derived from Royden and Li at the Brennan Center for Justice at NYU Law's (2017) report *Extreme Maps* which focused on partisan gerrymandering in 26 states measured on three different metrics. The data set derived from this report is the efficiency seat gap measurements. Moreover, the partisan symmetry data was calculated by Anthony McGann and sent to me by e-mail upon request. The geospatial software firm Azavea has calculated the Polsby-Popper scores. For a discussion on the data's validity and reliability, see chapter 6.4 and 6.5. For a critical review of the sources, see chapter 5.3.1

1.5   Theory and concepts

This chapter will be based on existing literature and introduce fundamental concepts. First, it will outline the federal system of government, which includes the plurality rule in single-member districts and the two-party system. Key authors in this section are Lijphart, Bormann and Golder and Maurice Duverger. Second, there is a discussion on the theory of voting and demography as a source of bias in elections. Important authors in this regard are Chen and Rodden, Wasserman and Flinn and Nate Silver. Last, the section of gerrymandering is comprehensive. The section will outline key concepts in the literature with an in-depth description of partisan gerrymandering emphasizing United States (U.S.) Supreme Court rulings, and the path from 2018 and forward. Key contributors are Kernell et al., McGann et al., Stephanopoulos and McGhee, Chen and Cottrell, Beveridge et al. and Goedert.

1.6   Structure of thesis

The political, institutional framework is presented in **chapter 2** to provide the context to understand the redistricting process in the United States. Federalism and the relationship between federal and state level is central in understanding the autonomy the states have in the redistricting process, and the importance of the rulings and precedence that is set by the U.S. Supreme Court. Further, the electoral system is outlined to understand how congressional districts can be manipulated through gerrymandering, and why geographical bias can influence electoral results. Next, the theories on voting and population distribution and gerrymandering are presented.

The redistricting process is presented in **chapter 3.** Apportionment and federal and state-based requirements the states have to adhere to is discussed. Further, information on the 2010 census and the redistricting in 2011 is presented. This information is important to comprehend the next chapter and to answer the first research question on what characterizes the redistricting process in each state.

Furthermore, the state-by-state redistricting process is presented in **chapter 4**. It is essential to outline the different processes because the literature shows an increase in bias in states with legislative-based redistricting procedures contrary to the states with commissions. However, the outline only contains general characteristics, and a more comprehensive description was decided to be too time-consuming and not needed to give a broad description of each system. More details would probably involve a case study. Further, there is an expectation that the different procedures will have certain qualities that can influence the partisan bias. As a result, a comparative large N-analysis was considered the most appropriate research method. This was done to get a clear understanding of different labels that could be used to describe the redistricting systems. The data gained from this chapter will be used to compare the different states in regards to the efficiency gap and partisan symmetry in chapter 7.

Chapter 5 sets out to discuss the comparative method used in the thesis. Moreover, it will also critically review the sources used. Further, a presentation of the operationalization of the variables used in tables in chapter 4 will be presented.

To be able to compare partisan bias among the states it is necessary to explain the metrics used. Therefore, **chapter 6** sets out to discuss the efficiency gap, partisan symmetry as well as

the Polsby-Popper Test, which is briefly mentioned. Additionally, the thesis validity and reliability is discussed at the end of the chapter.

An overall comparison of all the states efficiency gap and partisan symmetry scores in the congressional elections of 2012, 2014 and 2016 is provided in **chapter 7** to illustrate how the electoral map can create bias. By using secondary data, the data sets were interpreted by making tables and figures in Excel. The results from the chapter narrowed the relevant cases for explorative comparative analysis.

The overall analysis revealed that states with Republican-drawn maps were consistently most biased, but not all the Republican-dominated states had the same level of bias. This was a surprising finding, given the many benefits of gerrymandering described in the literature. Therefore, the focus in **chapter 8** is to provide a discussion to why only a few Republican states had consistently high levels of bias, and why others do not. The aim is to provide some thoughts as to what can explain the differences that have been observed by comparing states with Republican-drawn congressional districts. Further, this can be a foundation for future, more systematic analysis of partisan bias.

Finally, **Chapter 9** will have a summary of the findings in the thesis, related to the research question and reflections on what can be a subject of future analysis.

2 Elections in single-member districts in a federal system, geographical bias, and gerrymandering

Elections to the United States House of Representatives is based on plurality voting in single-member districts in a two-party system. The electoral model is often described as a *winner-takes-all* procedure. Simultaneously, population patterns of the American electorate show that there are distinct trends as to where voters chose to live. There is a reason to suggest that the political system and population patterns create a window of opportunity for politicians to draw congressional districts that benefit them in elections to the U.S. House.

Several variables can contribute to explain partisan bias in elections and why one party is benefiting more than the other and by that having a better chance of winning congressional districts. In this regard, one variable is the characteristics of the electoral system, a second variable is based on geography and third, other political factors such as gerrymandering of congressional districts. The purpose of this chapter is to discuss the academic literature on the American system of government, electoral systems, population patterns and partisan gerrymandering. The political system and gerrymandering are considered institutional factors, whereas population distribution is a geographical factor.

First, I will define key concepts and traits of the federal system of government. Among these are the plurality rule of elections in single-member districts and the two-party system. Next, to be able to answer *"to what extent does the electoral map create partisan bias in election results?"* three sections of this chapter is important. They are; the political system of the United States, the geographical distribution of voters and gerrymandering. These theories will be presented and discussed.

2.1 The political system in the United States

2.1.1 Federalism

The United States has a federal system of government. *Federalism* combines elements of confederation, where the lower level of government has the primary authority and elements of unitary government; where the national government has the sovereign power (Kernell et al., 2016, p. 85). Although there are several definitions of federalism, scholars agree upon the following trait; a division of power between the central and regional governments (Lijphart, 1999, p. 186). Further, Arend Lijphart argued that federalism as a form of government is relatively rare in modern democracies and mostly occur in countries with large populations and heterogeneous societies (Lijphart, 1999, p. 195). In the United States, the federal government is the centralized authority, and regional governments are called states (Lijphart, 1999, p. 187).

The federal level has three branches of government; the executive, the legislative and the judiciary. After being under British colonial rule for over hundred years the Framers of the Constitution created a system where no branch of government has an excess amount of power, and where each branch can control the other (Kernell et al., 2016, p. 59). The French philosopher Montesquieu inspired the principle of *checks and balances* (Kernell et al., 2016, p. 54). In the redistricting process, the judicial branch acts as a check on the power of the legislative branch with the ability to oversee if the maps comply with redistricting requirements, and also can invalidate the maps drawn by the legislatures.

The states and the federal government

The executive branch comprises the President, Vice President, the Executive Office of the President, several councils and White House offices. *The judicial branch* consists of the United States Supreme Court and U.S. District Courts, U.S. Court of Appeals among others. *The legislative branch* embodies the bicameral United States Congress that consist of the United States House of Representatives and the United States Senate (United States Department of State, 2000, p. 66).

A majority of the government's authority is decentralized in the United States, and the regional governments consist of 50 states. Furthermore, each state has the same structure as

the federal level, with three branches of government and their own Constitution. The highest elected official in a state is the Governor, and all states have a bicameral legislature except Nebraska (Nebraska, n.d.).

Federalism creates a two-level system of political institutions and a judicial system that in some aspects give the states autonomy on a wide range of issues, such as redistricting, but the decisions made can also be revoked by the federal court system. This dualism can pose challenges to the redistricting process. The states have a significant amount of autonomy when drawing new congressional districts every ten years, but they are constrained to adhere to both federal and state-based requirements for how the maps will be drawn (see chapter 3.2.1 and 3.2.2). Additionally, federal courts can ultimately rule the maps created by the states to violate the requirements set by the Constitution or by case law. In redistricting cases, only cases of malapportioned districts and racial gerrymandering have been accepted as justiciable by the courts. Therefore, the importance of the judicial branch in general, and the rulings on gerrymandering in particular is a reason for why so much focus has been put on court rulings in this thesis.

The states' rights are guaranteed by the tenth amendment of the U.S. Constitution. It establishes that *"The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States, respectively, or to the people"* (Kernell et al., 2016, p. 648). These are often referred to as *reserved powers*. The states are mainly autonomous and have delegated powers to the federal government (National Governors Association, n. d.).

A representative democracy

James Madison argued in Federalist No. 10 that the American democracy is a *representative democracy.* He called for a new system of government by introducing the term *republic*. Because of the large size of the United States, both in population and geography, it was not possible to choose a direct form of democracy. A representative government was the only viable solution (Kernell et al., 2016, p. 445).

The threat of the delegation of power in a representative democracy is that the elected representatives do not act on behalf of its constituents. Therefore, a solution to this problem is to hold the representatives accountable and to have regular and free elections (Kernell et al.,

2016, p. 445). The philosopher John Locke's idea of *popular sovereignty* – that the government officials' authority is delegated to them by the people, who also can withdraw that power through elections, is one of the leading characteristics of the U.S. Constitution and the American government (Kernell et al., 2016, p. 54).

2.1.2 Plurality rule in single-member districts

An electoral system is a system where votes are translated into seats (i.e., representation in the legislative branch) (Lijphart, 1999, p. 154). Moreover, free and competitive elections is a vital part of the democratic process. In *Article 1, Section 4* of the U.S. Constitution, states are given the power to determine the "*time, places and manner*" of congressional elections. Congress can at any time alter or regulate elections through the passing of new laws (United States Senate, n. d.).

Members of the U.S. House of Representatives are elected for two years. Consequently, every two years, the whole of the U.S. House is to be elected. When an election is held in a year between two presidential elections, it is called a *midterm election.*

The United States is one of a few countries that use a *majoritarian electoral model.* Bormann and Golder (2013) showed that the use of a majoritarian system worldwide has declined in the period from 1950-2000. The countries that still use this model are mostly former British or French colonies. Among the majoritarian systems, most countries use *single-member district plurality system* (SMDP) (Bormann and Golder, 2013, p. 365).

Close to all elections in the U.S. are held using SMDP. This implies that a candidate receiving more votes than the opposing candidate wins, and all votes cast for the losing candidate are wasted (Lijphart, 1999, p. 143). The plurality rule is often described as *first past the post* or *winner-takes-all* where one candidate is elected from each district (Smith, 2012, p. 760). On the contrary, this system is the opposite of multi-member districts, where several candidates are elected simultaneously to the same district (Bormann and Golder, 2013, p. 361).

2.1.3 Two-party system

According to *Duverger's law,* the nature of plurality rule in single-member districts results in two-party competition in the electoral system, making it more difficult for third parties to

compete in elections (Smith, 2012, p. 759). Consequently, this contributes to the development of a two-party system. In essence, how many parties there are in a political system is a result of the institutional framework of the electoral process (Smith, 2012, p. 759). The United States does fit the premise of Maurice Duverger with a two-party dominance in most elections, but according to Singer (2012), this is only partly true for the majoritarian systems in the United Kingdom, India, and Canada, where smaller parties have made electoral progress.

Further, Duverger pointed to two effects of the plurality rule; one mechanical and one psychological. The mechanical effect is that in an election, the third and fourth largest parties are underrepresented because plurality rule favors the two largest parties. Additionally, the psychological consequence is that when voters realize this mechanical effect, they instead chose to vote for one of the two largest parties in the election.

In a broader explanation of the development of party systems, Arend Lijphart (1999, p. 144-154) pointed to a few additional variables besides the electoral formula that was proposed by Duverger to explain the emergence of party systems in a country;

1. The electoral formula; a plurality, majoritarian or proportional system

2. The district magnitude; single-member or multi-member districts

3. The electoral threshold; how many votes are needed to win the seat

4. The assembly size; the total number of seats in the legislative body

According to Lijphart, countries with a plurality or majoritarian electoral formula, small district magnitudes and a high electoral threshold produce fewer competing parties (Lijphart, 1999, p. 144-154). These variables are all fitting to the SMDP system in the U.S.

Conversely, the electoral system used in many European countries is the *proportional representation system* (PR), where elections are held in multi-member districts. This system aims to secure the representation of both the majority and minority population. As a result, votes are translated into seats proportionally (Lijphart, 1999, p. 141).

Two-party systems are more susceptible to gerrymandering

Two party systems are more exposed to gerrymandering compared to other electoral systems, such as mixed-member or PR systems, as shown by Coma and Lago (2018, p. 99). In a rare comparative study of lower house elections in 54 democracies, they also found that country size in majoritarian systems can contribute to gerrymandering as well. Larger countries have legislatures reflecting the population size and populous countries are more heterogeneous than smaller ones, creating possible gains of manipulation of voting districts (Coma and Lago, 2018, p. 99, 102).

Consequently, the characteristics of the American political system produce a two-party system that results in voters having to choose between two parties: The Democrats or the Republicans. Additionally, this section has also shown that the two-party system is more prone to gerrymandering than other electoral systems. Simultaneously, according to several academics, where the voters chose to live can also have an impact on which party has an electoral advantage in elections to the U.S. House of Representatives.

2.2 Voting and population distribution

Numerous studies have been conducted in political science to contribute to developing a theory on human geography to account for bias in elections (see Rodden 2010; Ansolabehere et al., 2006; Jacobson, 2015; Carson et al., 2007; Amos et al., 2017; Chen and Rodden, 2016).

Chen and Rodden's (2013) work on the population patterns of voters as a way to understand partisan bias contributed to a new way of thinking about what the scholars describe as *unintentional gerrymandering*. However, this concept is somewhat inaccurate. Voters, people, chose to reside in certain areas due to other reasons than partisan gain in elections. Rather, industry and job opportunities act more as pull factors contributing to the choice of residency. As a result of economic and social status, this impacts political views. Chen and Rodden's study showed that human geography, where partisan voters with strong affiliations to a party choose to reside, can contribute to an advantage for Republicans and a disadvantage for Democrats.

Democratic voters live in urban centers, Republicans prefer rural areas

Furthermore, this development can be referred to as *geographical bias*. Democrats have a weakness in congressional elections in large and urbanized states when votes are translated to seats because of their voters' tendency to cluster in these areas (Chen and Rodden, 2013, p. 262). Democratic voters are mostly residing in larger cities and homogenous urban areas. However, the relationship between population density and a vote to Democratic candidates cannot to the same extent be transferred to Southern and Western states with a lesser degree of industrialization and large rural African-American populations (Chen and Rodden, 2013, p. 242). *Clustering of voters* can in this context be understood as partisan voters choosing to live in the same areas, as opposed to living more dispersed, as Republicans tend to do. Additionally, one important finding in the study was when drawing district lines, in many states, the Democratic Party would win less than 50 percent of the seats while receiving 50 percent of the popular vote because of the underlying residential patterns of partisans, combined with redistricting principles of contiguity and compactness (Chen and Rodden, 2013, p. 239). A consequence of the SMDP system is that when partisan voters live near each other, one party easily wins that congressional district. However, because a candidate will often need to achieve 50 percent + 1 in SMDP elections, those voters may be underrepresented in the rest of the state's congressional districts.

Moreover, the industrial revolution, great migration and successive suburbanization patterns are factors contributing in explaining why Democrats tend to cluster more than Republicans do (Chen and Rodden, 2013, p. 241). Republicans, on the other hand, are living more dispersed in the rural and suburban periphery (see also Sides and McGhee, 2013). Through computer-based simulations, Chen and Rodden demonstrated the electoral bias in favor of Republicans when partisan gerrymandering was not present. The most substantial bias against Democrats was found in states where their partisan voters lived in urban areas. Overall, Republicans had a significant advantage in the distribution of votes into seats (Chen and

Rodden, 2013, p. 242, 254)[2]. No simulated plan turned out unbiased, or with a Democratic bias (Chen and Rodden, 2013, p. 256)[3].

Chen and Rodden's analysis was limited to state legislative elections with data from the previous redistricting cycle that is now 18 years old. Nevertheless, the residential patterns they discovered have been confirmed in recent studies of the geography of the American electorate. In the Partisan Voting Index (PVI) of 2017, the Cook Political Report showed that 92 swing districts[4] have disappeared since 1997 (Wasserman and Flinn, 2017). 83 percent of the decline came from "natural sorting" of voters, which means Democrats are clustering in cities and urban areas whereas Republicans live mostly in rural and suburban areas, just as Chen and Rodden showed in 2013. Additionally, only 17 percent of the drop can be attributed to altered district lines (Wasserman and Flinn, 2017). Similarly, a Pew Research Center study from 2017 showed that 65 percent of Republicans favor living in larger houses that are more remote, whereas 61 percent of Democrats prefer to live in smaller homes closer to urban areas with walking distance to schools (Pew Research Center, 2017). However, Chen and Rodden's study has also been subject to critique in regards to methodology and inferences. McGann, Smith, Latner, and Keena (2016) stated in their book "Gerrymandering in America", that it is important to be skeptical to inferences drawn from a distribution of computer-generated simulations because it is not given that they constitute a representative sample (McGann et al., 2016, p. 111). Furhermore, McGann, et al (2016) explain partisan bias because of gerrymandering, and not human geography.

However, population distribution regarding living in rural or urban areas is not the only cause of explanation for partisan bias in elections when discussing geographical factors. The constitutionally required majority-minority districts can also be a source of bias.

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[2] Using precinct-level data from the 2000 presidential election and U.S. Census Bureau precinct boundary files in 20 states to prove the connection between population densities and voting.
[3] Chen and Rodden's computer simulated 25 congressional districting plans and 160 state legislative districts in Florida.
[4] Swing, purple or competitive districts refer to districts containing an even mix of voters that vote for the red Republicans or blue Democrats.

2.2.1 Majority-minority district as a source of geographical bias

In an article, Nate Silver (2013) of the election analysis website FiveThirtyEight contended when studying election results, he agreed with Chen and Rodden that too much focus is being put on gerrymandering and not on human geography (Silver, 2013). In 2013, he examined 435 congressional districts to see how they voted in the U.S. Presidential election the

Figure 2.1: The 12th district in North Carolina that was ruled unconstitutional by the U.S. Supreme Court in 2017. The district lines are marked in dark green (The New York Times, 2016a)

previous year and thereby evaluating President Obama's electoral performance in *majority-minority districts*.

Majority-minority districts are historically the least compact districts because they are purposefully drawn over distances to connect specific communities. Today, scholars agree that it does not exist a standard as to what is an effective majority-minority district.

Moreover, this can vary from state to state. Majority-minority districts represent in many ways a partisan stalemate between Democrats and Republicans. Minority groups tend to vote by a large margin for Democratic candidates. As a result, when these groups are packed together, Republicans are gaining in the neighboring districts where their electoral demographic is advantageous to them because they live more dispersed than Democrats. This has resulted in Republicans often being in favor of majority-minority districts, and the same districts have troubled Democrats (Druke, 2017a).

Silvers analysis showed President Obama winning 44 districts by at least 50 percentage points. 41 of these districts were majority-minority, created by states to comply with the Voting Rights Act. Mitt Romney, the Republican candidate for President only won eight districts by the same margin. The districts President Obama won were heavily partisan, Silver noted. This resulted in a large number of wasted votes for the Democrats. This, in turn, caused

Romney to win 226 of 435 districts in 2012 even though President Obama won the popular vote by four percentage points[5] (Silver, 2013). President Obama won the 106 majority-minority districts in the U.S. by 40-percentage points on average. Since minorities cluster in some geographical regions like Southeast Washington D.C., or the Bronx in New York, it is difficult not to create highly partisan districts where Democrats will waste votes without gerrymandering.

It is possible to see that there is to a degree a consensus in regards to the population patterns in the recent years among the American electorate. Moreover, the fact that Democrats tend to reside in urban areas and Republicans in rural ones creates opportunities for politicians to take advantage of this development and use it for political gain if they are fortunate to have political dominance in a state. Consequently, the next part of this chapter will be devoted to the phenomenon of gerrymandering as a source of partisan bias.

2.3   Gerrymandering: intentional manipulation of voting districts

The literature on gerrymandering is wide-ranging in political science (see Gul and Pesendorfer, 2010; Cox and Katz, 1999, 2002; McCarthy et al., 2009; Herron and Wiseman, 2008; Carson et al., 2004; Gelman and King, 1994; Tufte, 1973; Goedert, 2015; Berman, 2018)

There are several definitions of the phenomenon. The U.S. Supreme Court in *Vieth v. Jubelirer* (2004) defined a "political gerrymander" as

> *"[t]he practice of dividing a geographical area into electoral districts, often of highly irregular shape, to give one political party an unfair advantage by diluting the opposition's voting strength."*

(Vieth v. Jubelirer, 2004[6])

This definition is based on the assumption that oddly-looking districts can be an indication of gerrymandering. While this in many cases can be correct, less compact districts can also be

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[5] Obama won 51 percent against Romney's 47 percent.
[6] The Court cited Black's Law Dictionary 696 (7th ed. 1999)

majority-minority districts. Therefore, the shape of the district can be misleading when seeking to define gerrymandering.

The nonpartisan electoral reform advocacy organization FairVote defines gerrymandering as an:

> *The act of politicians manipulating the redrawing of legislative district lines in order to help their friends and hurt their enemies. They may seek to help one party win extra seats (a partisan gerrymander), make incumbents of both parties safer (an incumbent-protection gerrymander) or target particular incumbents who have fallen out of favor* (FairVote, n. d., a).

This definition is broader and includes different types of gerrymandering such as partisan gerrymandering, incumbency-protection and attacks against an incumbent. However, it still lacks the aspect of racial gerrymandering. The only form of gerrymandering that to this date is unconstitutional. Nevertheless, since gerrymandering is a broad phenomenon and can occur in different shapes or form, this is the definition that is best suited to explain the practice of the two definitions presented here.

Figure 2.2: Illustration of the original Gerry-mander of 1812 (FairVote, n. d., b)

The practice of gerrymandering can be dated back to at least the 18th century. Some scholars argue that the first gerrymander occurred when one of the Founding Fathers; Governor Patrick Henry drew a congressional district in Virginia in 1789 with the intent of making the future President James Madison lose the election the same year (Mordfin, n. d.).

Furthermore, although the practice is several hundred years old, the term gerrymandering originated after the redistricting process in Massachusetts in 1812. The legislature of the Bay State drew a district that onlookers described as a "dragon-like contour." At a Boston dinner party the same year, some guests noted that the district looked like a salamander after seeing a drawing of it. Eventually, the term was finally coined "Gerry-mander" after the Governor of

Massachusetts, Elbridge Gerry. As a Governor, Gerry signed the new state Senate district into law (Kernell et al., 2016, p. 222; Trickey, 2017).

Effective gerrymanders

Moreover, there are primarily two tools that lawmakers have at their disposal to perform a gerrymander that is most commonly referenced in the literature.

Packing is a method where one creates an overconcentration of a party's voters into a few districts where their candidate wins by an overwhelming margin. Since the U.S. has winner-take-all elections, a candidate only needs over 50 percent to win (Issacharoff and Karlan, 2004, p. 552).

Additionally, *cracking* refers to the act of dispersing an opposing party's voters over several districts where their candidate will consistently lose by narrow margins. Consequently, because Party A already has won in a few districts because of "packing," the rest of Party A's votes are distributed in districts the party will lose (Issacharoff and Karlan, 2004, p. 551).

From these two techniques, lawmakers can manipulate the outcome of elections by drawing congressional districts to concentrate their opponents' voters in a few districts, and by that having their party consequently winning the remaining districts in the state by a comfortable margin. To summarize, packing creates excess votes and cracking generates a large number of lost votes for a party (Mordfin, n. d.). However, some states do not need to pack and crack districts, because one party's overwhelming electoral support in the state will naturally lead to a party winning every district either way. They can, therefore, draw congressional districts resembling the miniature of the statewide vote, without having to give the opposing party any districts. This can be exemplified with Democrats in Massachusetts and Republicans in Oklahoma[7] (McGann et al., 2016, p. 149).

However, it is not possible to do this everywhere because of clustering of voters and geographical obstacles such as rivers and mountains. If the state has a significant minority

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[7] The Democratic Party had won U.S. House of Representatives elections by 10-0 in 2010, 9-0 in 2012, 9-0 in 2014 and 9-0 in 2016 in Massachusetts. In Oklahoma the Republican Party won the U.S. House of Representatives elections by 4-1 in 2010, 5-0 in 2012, 5-0 in 2014, 5-0 in 2016.

population, the creation of majority-minority districts can also be a solution if this minority group live in relative proximity and can be packed together (McGann et al., 2016, p. 149).

According to Nick Stephanopoulos, all the information lawmakers need to effectively gerrymander is having presidential elections results by ward or precinct levels and create as many safe districts for your party as possible. Next, the remaining voters for the opposing party are placed in a few safe districts that they win by a large margin (Mordfin, n.d.). Summarized, an effective gerrymander involves one party having more success in translating votes into seats, even without winning a majority of the statewide vote (Stephanopoulos and McGhee, 2015, p. 852).

In the discussion on gerrymandering, it is important to distinguish between the two types of gerrymandering that is most commonly referenced in the literature: partisan and racial gerrymandering. The latter will not be discussed but is mentioned in chapter 2.2.1.

2.3.1 Partisan gerrymandering

Partisan gerrymandering has been the subject of several cases to the U.S. Supreme Court the last decades. In general, two issues have been discussed. One, whether partisan gerrymandering is justiciable, meaning if it is an issue the Court can decide upon (and not politicians). Second, if partisan gerrymandering is constitutional (McGann et al., 2016, p. 2).

Legal battles over partisan gerrymandering

In *Davis v. Bandemer* (1986), the U.S. Supreme Court ruled that claims of partisan gerrymandering be justiciable under the Equal Protection Clause of the 14th amendment (Davis v. Bandemer, 1986, p. 109, 110). The Court established that the principles of *one person, one vote* from *Wesberry v. Sanders* (1964) could also be applied to partisan gerrymandering cases (McGann et al., 2016, p. 23).

Davis v. Bandemer originated in a redistricting process in Indiana in 1981. The plaintiffs were Indiana Democrats, who challenged the redistricting plan for state legislative districts. They argued that the maps had been drawn with the purpose of diluting Democratic votes (McGann et al., 2016, p. 41). The election held in the following year resulted in Democrats winning fewer seats than the Republicans, even though they won the statewide popular vote. Consequently, this contributed to the U.S. District Court's ruling that the reapportionment

plan was in violation of the Constitution and contributed to discriminatory dilution of the Democratic vote. It was decided that new maps needed to be drawn (McGann et al., 2016, p. 42). The U.S. Supreme Court overturned this decision in 1986 because of the rigid standards set by the U.S. District Court. They argued that the standards were so strict they were almost impossible to meet. Nevertheless, the Court concluded that political gerrymandering had occurred in Indiana. The ruling in *Davis v. Bandemer* left the door open for uncertainty and ambiguity on how one could recognize and define partisan gerrymandering. However, it also made clear that future cases of partisan gerrymandering could be decided in the court system (McGann et al., 2016, p. 44). This posed a risk to the politicians in state legislatures that were in control of the redistricting process (McGann et al., 2016, p. 44).

Furthermore, a U.S. Supreme Court ruling on gerrymandering that has not received the same attention as *Davis* or *Wesberry* is *Vieth v. Jubelirer* (2004). In fact, McGann et al. (2016) argues that the decision in *Vieth* (2004) overturned the decision in *Davis v. Bandemer* and challenged the equality principles put forth in *Wesberry.*

In *Vieth,* the U.S. Supreme Court had to decide yet again if partisan gerrymandering was a justiciable issue or not. The majority of the Court made it clear that in their view, partisan gerrymandering is a political question and not justiciable (McGann et al., 2016, p. 2). Instead, the issue should be left to politicians. Justice Scalia wrote the majority opinion and argued that partisan gerrymandering was not justiciable because there is no acceptable standard for adjudicating such cases. Moreover, he argued that neither *Davis* nor the plaintiffs in *Vieth* could specify this standard (McGann et al., 2016, p. 51). Additionally, Justice Scalia argued that equal protection is only a right guaranteed to persons, not equally sized groups, like political parties (McGann, 2016, p. 48). Justice Kennedy wrote the concurring opinion and argued for the need of a workable standard to measure partisan gerrymandering for it to be justiciable and did not dismiss the possibility of it happening in the future (McGann et al., 2016, p. 2, 7).

Republican gerrymanders in 2011

It is argued by McGann et al. (2016) that partisan gerrymandering is the single explanation for the partisan bias in elections because a pro-Republican bias can only be seen in states with a legislative process where Republicans controlled redistricting in 2011. (McGann et al., 2016, p. 146).

It is suggested that there is increased partisan bias in states where Republicans control both the state legislature and governorship and have the opportunity and motive to gerrymander for political gain (McGann et al., 2016, p. 159; Coma and Lago, 2018, p. 102). *Opportunity* refers to the ability to gerrymander, meaning control of the trifecta[8] (McGann et al., 2016, p. 147). *Motive* refers to the drawing of biased districts is advantageous when the district is considered somewhat competitive in national elections (McGann et al., 2016, p. 149). Additionally, it can refer to the possible political advantages from manipulating districts, such as being able to push a political agenda or to secure political dominance (Coma and Lago, 2018, p. 102)[9].

Conversely, Chen and Cottrell (2013) discovered that while gerrymandering does affect partisan gains in elections, it only created a few extra Republican seats nationwide. In most states, the gerrymandering had little effect on the partisan outcome in the distribution of votes to seats. Moreover, the partisan gain was with the exception California, small (Chen and Cottrell, 2013, p. 329, 340). As a result, they concluded that the partisan composition in the U.S. Congress is a result of factors other than partisan gerrymandering of voting districts.

Nevertheless, just as McGann et al. (2016), Chen and Cottrell discovered who controls redistricting matters. Republicans gain from having single-party control of the legislative-based redistricting process. This is because, in a majority of states with a legislative districting process, the Republicans controlled the entire process during the last round of redistricting in 2011. Further, Democratic candidates have a negative bias in preclearance states under the Voting Rights Act states with Republican control. This finding is surprising, given that legal requirements are put in place in these states to avoid votes being diluted (Chen and Cottrell, 2013, p. 340).

Contradictory to McGann et al. (2016), Sides and McGhee (2013) argued other factors than redistricting influenced election results in 2012[10]. Instead, incumbency advantage was viewed as a more valid explanation. They discovered that when only taking into account the redistricting process, this made the Democratic Party lose seven seats in the 2012 election.

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[8] Control of the trifecta refers to one party having control of the state legislature and governorship in a state, and by that having total dominance over the redistricting process.
[9] A competitive state had a 25 percent or less spread in the popular vote in the 2008 presidential election. All other states are regarded as noncompetitive (McGann et al., 2016, p. 156).
[10] Sides and McGhee did a counterfactual study and analyzed data from the 2012 U.S. House election.

When including incumbency, the influence of gerrymandering disappeared. Additionally, the Republican bias does not overlap with years of redistricting. Instead, they argue, the bias is in favor of the party with most incumbents. Their results from 2012 showed that districts plans drawn by Republicans do favor the GOP, nonpartisan plans also support them, and districts drawn by Democrats are mostly unbiased (or fair). This indicates that the bias is caused by more than just partisan gerrymandering, because it seems difficult for Democrats to draw a biased district even when they control the redistricting process. This finding is also supported by Chen and Rodden (2013).

2018 and forward

In an amicus brief to the U.S. Supreme Court at the *Gill v. Whitford* (United Supreme Court 2017a) proceedings, professors A. Beveridge, B. Burden, R. S. Erikson, B. L. Fraga, D. P. Green, J. Grimmer, L. Handley, J. A. Henderson, E. D. Hersh, D. C. Kimball, M. Meredith, M. C. Munger, C. M. Nall, D. Rivers, D. Rohde, B. F. Schaffner, E. Schickler and A. White argued that technological advances, voter data, and stable partisan alignment can result in more extreme partisan gerrymandering in the 2021 redistricting than was observed in 2011 (U.S. Supreme Court 2017a, p. 2). Politicians who draw new district lines can perform extreme gerrymanders because the voting patterns of the electorate are increasingly more predictable and stable combined with new technology and more sophisticated data available (U.S. Supreme Court 2017a, p. 3, 4). In fact, this information was applied in several states in the redistricting cycle in 2011, generating maps with a high degree of bias. Consequently, the authors fear it will happen again in 2021 if the U.S. Supreme Court does not intervene (U.S. Supreme Court 2017a, p. 2). McGann et al. (2016) agree with Beveridge et al. that due to the extensive gerrymandering in 2011, the *Vieth* decision will most likely affect U.S. House elections until the new maps are redrawn in 2021 (McGann et al., 2016, p. 1).

Moreover, Goedert contended in a 2015 article that in 2011, congressional districts were intentionally drawn by Republican lawmakers to maximize the seat advantage in close national elections (Goedert, 2015, p. 1). Additionally, this impression was also confirmed by David Wasserman at the Cook Political Report (2018). Wasserman contended when Republicans drew the district lines in 2011, in many states, they aimed to spread their voters over several congressional districts to maximize the seat advantage. However, the drawback could be that if the GOP had a disappointing year, this could backfire, giving the Democrats

the upper hand in many elections (Wasserman, 2018). Therefore, it is not a given, as many have predicted, that the Republican gerrymanders of 2011 will make them prevail in all the U.S. House elections until next redistricting round. If the Democratic Party is having an outstanding year, they can turn the tables around. The Republican gerrymanders of 2011 are not insurmountable; if enough people turn out to vote, the electoral obstacles can be overcome.

2.4   Closing remarks

This chapter has shown that the United States has a federal system of government based on the principles of representative democracy and popular sovereignty. Moreover, the states have by the U.S. Constitution been given much autonomy, especially in the redistricting process. However, this power can be limited by the judicial branch according to the principle of checks and balances. Further, elections are held through a plurality vote in single-member districts which naturally favors a two-party system. Additionally, an extensive body of research has shown that there are distinct population patterns among the American electorate that can influence the parties' electoral performance in U.S. House elections. Consequently, this trend has made manipulation of the congressional districts for political gain, partisan gerrymandering, more accessible to lawmakers. Scholars disagree on how much is to gain from the gerrymandering regarding seat distribution to the U.S. House. Therefore, to get a better understanding of how geographical bias and gerrymandering influence each other and how electoral maps can create partisan bias, it is important to understand the redistricting process in the United States.

3 Redistricting

In this chapter, the federal and state-based requirements for redistricting is described to answer the first part of the research question in chapter 4. First, there will be an introduction of what redistricting is and how apportionment is conducted. Next, the federal and state-based requirements for the redistricting process is described. Last, the 2010 census and the redistricting process in 2011 is outlined. It is important to understand the formalities of the redistricting process to see what opportunities and limits there are to the process for the states drawing the districts. The terms *district, seat,* and *representatives* will be used interchangeably.

3.1   What is redistricting?

Redistricting is a method of changing geographical boundaries of districts where people elect their members to the U.S. House of Representatives, state legislature, school board or city council (United States Census Bureau, 2011). Furthermore, redistricting of congressional districts needs to be done after the decennial census because of the shifting population in each state. Consequently, some states may get more districts and some will lose one or several districts.

Federal provisions like the 14th, 15th amendment and the Voting Rights Act regulate the redistricting process. Further, case law set by the U.S. Supreme Court and lower federal courts after 1962 are essential to the way redistricting is carried out. Additionally, state constitutions also have provisions that stipulate how district lines are drawn. The 37 states have chosen different models of redistricting. Primarily this is done through the legislative process or by a commission.

3.1.1 Apportionment

Apportionment is a necessary prerequisite for the redistricting process (Kernell et al., 2016, p. 220).

Article 1, Section 2 of the U.S. Constitution requires that the number of members to the U.S. House of Representatives be apportioned to each state depending on their population relative to other states. After the decennial census, states can lose or increase the number of seats in

the U.S. House of Representatives depending on whether their population has grown or decreased the last ten years (United States Senate, n. d.).

Furthermore, the total number of seats in the U.S. House of Representatives is a fixed number of 435, and the congressional districts are apportioned to each state automatically (Kernell et al., 2016, p. 220; Cox and Katz, 1999, p. 817). After the last census in 2010, the average population size of a congressional district was 710 767 (United States Census Bureau, 2011).

3.2 Requirements and limitations of the congressional redistricting process

3.2.1 Federal requirements

Equal populations

In 1964, the U.S. Supreme Court ruled in *Wesberry v. Sanders* that malapportionment was unconstitutional because it should be considered a right for voters to be treated equally (Wesberry v. Sanders, 1964). When congressional districts were drawn with varying population sizes, the consequences could be disadvantageous to specific groups of voters because some votes would be weighted more than others. Consequently, this would result in the votes of some people in certain congressional districts counting more than others in different areas (McGann et al., 2016, p. 6, 7).

The Court ruled that congressional districts must have as equal populations as possible according to the principle of *"one person, one vote"* (Wesberry v. Sanders, 1964). Constraining states to have as equal district populations as possible is ensured in the Apportionment Clause of Article 1, Section 2 of the U.S. Constitution (National Conference of State Legislatures, 2018a; Wesberry v. Sanders, 1964)[11].

Consequently, a district will be considered unconstitutional if it has a one percent spread from the largest to smallest districts when this is not warranted in state policy (Levitt, n. d., a).

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[11] This criterion was also confirmed in *Reynolds v. Sims* (1964).

Malapportionment of districts can contribute to disproportionality when translating votes into seats. As a result, all states must draw congressional districts with the same number of people in it.

Race and ethnicity

The 15th amendment of the U.S. Constitution gives every citizen the right to vote and protection from having this right violated due to race or color. The U.S. Congress is also given the authority to legislate on the issue. This eventually led to the passage of the Voting Rights Act in 1965 (referred to as "The Act"). Furthermore, the aim was to ensure that states did not disenfranchise African-Americans and minorities from the right to vote (Redistricting Online, n. d., a). Through redistricting, breaking up minority groups in a way that makes it nearly impossible for them to elect their candidates of choice is unconstitutional. Concentrating them without reason is also illegal (Druke, 2017a).

The Act intended to contest strategies that diluted the minority vote, including the packing and cracking of congressional districts.

Section 2 of the Act prohibits a congressional district line that effectively denies minority voters the chance "*to participate in the political process and to elect representatives of their choice,*" and that discriminates by race and color (United States Department of Justice, 2015)

Consequently, for a court to rule that districts need to be redrawn, there are three guiding threshold conditions established by the U.S. Supreme Court in *Thornburg v. Gingles* (1986). The first is compactness. It has to be determined if it is possible to create a district that a majority of voters can fit into, within a geographically compact racial or ethnic minority group in a single-member district (Thornburg v. Gingles, 1986).

The second threshold looks at if a minority population tends to vote for the same types of candidate. Specifically, the question at hand is if the minority population would vote for the same kind of Democrats or Republicans in an election with a wide field of candidates (Thornburg v. Gingles, 1986).

The last threshold tests the possible competition, meaning if the rest of the population in the area votes for other candidates than the minority community. As a result, a determination has to be made of whether minorities vote as one block and the majority as another bloc. If this

were to be true, it would entail that the candidate preferred by the minorities would always lose if their vote were not protected. Having said that, if the three requirements above are not met, courts can look at the "totality of the circumstances" to decide if the minority vote has been infringed (Thornburg v. Gingles, 1986).

For this reason, if lawmakers want to avoid legal action, many choose to draw district lines in a way to protect significant minority populations in areas which are racially polarized for them to have a chance to elect their preferred candidate. These districts are often called *majority-minority districts*.

Section 5 of the Act specifies that *preclearance* must be in place for certain states and local jurisdictions. These areas are called *covered jurisdictions*. Conditions for being a covered jurisdiction is listed in Section 4 of the Act. When the Act was passed in 1965, covered jurisdictions were mostly Southern states (United States Department of Justice, 2017).

Further, The U.S. District Court in the District of Colombia or the U.S. Department of Justice's Civil Rights Division must accept all changes made in the voting regulations and systems in the covered jurisdictions to make sure that these changes are not discriminatory against minorities. A few of the changes to the election process that need preclearance are listed in § 51.13: changes in voting districts, redistricting, reapportionment, participation in political campaigns and the eligibility of voting (Redistricting Online, n. d, b; Williamson, 1984, p. 5; United States Department of Justice, 2012, p. 86).

3.2.2 State-based requirements

In addition to the federal requirements all states have to adhere to, many states have regulated the following redistricting principles in their state constitution. These criteria are the ones most commonly applied by states.

Compactness

Compactness involves people living within the congressional district, live in proximity to each other, or as close as possible. Specifically, 25 states have imposed this requirement for their congressional districts according to the National Conference of State Legislatures (National Conference of State Legislatures, 2018a). Furthermore, Courts have on several occasions stated that the principle of compactness is one of the most important goals of the

redistricting process. It can be difficult to determine whether a district is compact or not, because of its regular or irregular shape (Ballotpedia, n .d, a; Redistricting Online, n. d, c). In fact, many observers look at weirdly-shaped districts and make a case for gerrymandering. However, suspicious district lines can also have valid origins. Some districts are created that way to make majority-minority districts to comply with the Voting Rights Act.

Contiguity

The principle of contiguity requires that the congressional district is a physically connected entity without borders within the district. However, districts can also be contiguous with a bridge or by water. Furthermore, it has to be possible for a person to move from one place to another without leaving the district (McGann et al., 2016, p. 58). This requirement has been established in federal court rulings. Additionally, many states demand that their congressional districts need to be contiguous in addition to being compact. According to National Conference of State Legislatures, 32 states require that their congressional districts meet this requirement (National Conference of State Legislatures, 2018a).

Preservation of a community of interest

There is no explicit standard of what constitutes a community of interest. It can be described as a community with recognizable characteristics where like-minded people live. In *Miller v. Johnson* (1995) the U.S. Supreme Court defined it as "*communities that have some common thread of relevant interests*" (Miller v. Johnson, 1995). This criterion is applied in 16 states (National Conference of State Legislatures, 2018a).

Competitiveness

This is a criterion has been adopted by a few states since 2000. Specifically, it involves the congressional district having an even mix of partisans, meaning people that reasonably consistent vote for either the Democratic or the Republican Party. The ambition is to have more competitive elections. To make this happen, it is essential to draw districts that are not considered safe by either party, meaning not too Republican or Democratic-leaning. The Cook Political Report measures a competitive district compared to the way a district votes within five points of the national average in presidential elections (Wasserman and Flinn, 2017).

Nationwide, there has been a decline in the competitiveness in congressional districts the last 20 years. Cook's PVI has measured voting patterns in congressional districts the previous 20 years. In 1997, PVI counted 164 competitive congressional districts. In contrast, this number was reduced to only 72 districts in 2016 (Wasserman and Flinn, 2017).

3.3   2010 Census

In 2010, the apportionment population was 309 183463[12]. This included all residents of the 50 states and overseas federal employees with their families. Population movements have according to the United States Census Bureau shifted from the Northeast and Midwest and thus increasing the population in the Southern and Western states (United States Census Bureau, 2011).

Further, the apportionment data revealed that 12 U.S. House seats were to be divided among 18 states. Texas gained four seats, Florida got two, with Arizona, Georgia, Nevada, South Carolina, Utah, and Washington receiving one seat each. New York and Ohio lost two seats, and Illinois, Louisiana, Iowa, Massachusetts, Michigan, Missouri, New Jersey and Pennsylvania lost one seat (United States Census Bureau, 2011).

After the census in 2010, California was the most populous state and received 53 seats. The least populous states were Alaska, Delaware, Montana, North Dakota, South Dakota, Vermont, and Wyoming. All states only have one representative in the U.S. House (United States Census Bureau, 2011).

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[12] Not including the District of Colombia because the District does not have a voting representative in the U.S. Congress.

Figure 1.
Apportionment of the U.S. House of Representatives Based on the 2010 Census
(For information on confidentiality protection, nonsampling error, and definitions, see *www.census.gov/prod/cen2010/doc/sf1.pdf*)

Change from 2000 to 2010
- State gaining 4 seats in the House
- State gaining 2 seats in the House
- State gaining 1 seat in the House
- No change
- State losing 1 seat in the House
- State losing 2 seats in the House
- Census Region Boundary

Numbers represent reapportioned totals of U.S. Representatives.

Total U.S. Representatives: 435

Sources: U.S. Census Bureau, 2010 Census and Census 2000 at <www.census.gov/population/apportionment/data>.

Figure 3.1: The distribution of congressional districts nationwide after reapportionment based on the 2010 census data (United States Census Bureau, 2011).

3.4   Redistricting in 2011

The Republican Party's landslide victory in the midterm elections in 2010, awarded them with control of the redistricting process in 17 states where they won the governorship and the majority in both chambers of the legislature in the same state. In total, this constituted 202 U.S. House seats. Democrats only gained control of the process in six states, with a total of 47 U.S. House seats. Of the remaining 20 states, the parties shared power in 13 states; six had redistricting commissions, one was not applicable[13]. The remaining seven had only one congressional district with no need of redistricting the following year (Kernell et al., 2016, p. 224).

There has been extensive documentation of the Republican gerrymandering in 2011, especially in 50-50 swing states.

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[13] Nebraska has a nonpartisan legislative branch.

According to the *Cook Political Report´s* Partisans Voting Index (PVI), the Republican Party had 210 Republican-leaning congressional districts nationwide prior to the redistricting in 2011, compared to the Democrats´175. *A leaning district* is a district where one party is more likely than the other to win the congressional seat. The other 50 districts were balanced between the two parties (Wasserman and Flinn, 2017). After redistricting, the Republican Party had increased the number of Republican-leaning congressional districts to 221; the number of Democratic-leaning districts was reduced to 170 together with a reduction of balanced districts to 44 (Kernell et al., 2016, p. 224).

3.5   Closing remarks

To sum up this chapter, it has described the outlines of the redistricting process and which limitations are put on the creation of new congressional districts. Redistricting is the redrawing of voting districts following the decennial census and apportionment of districts to each state. States have autonomy in drawing the districts, but they also have to follow certain federal requirements, such as equal populations in each district and make sure that the district lines do not contribute to dilution of the minority vote. Additionally, state-based requirements such as compactness, contiguity, preservation of communities of interest and competitive districts. These criteria vary widely in each state. This chapter has addressed the 2010 census, which data the redistricting process in 2011 was based on. Following the U.S. House of Representatives election in 2010, the Republican Party was awarded the control of redistricting in 17 states. A result of this was the increase of Republican-leaning districts nationwide from 210 to 221. Following in the next chapter, is a description of the state-by-state redistricting procedures and the characteristics of each system.

4 State-by-state redistricting procedures

This chapter will give a detailed outline of the state-by-state redistricting process in the United States with the purpose of answering the research question *"what characterizes the different congressional redistricting processes?"* The systems for redistricting are characterized as a dichotomy; legislative-based and commission-based. Excluded are seven states with one congressional district because of small population sizes without the need to redistrict every ten years. These are Alaska, Delaware, Montana, North Dakota, South Dakota, Vermont and Wyoming (McGann et al., 2016, p. 153).

4.1   Categorization

The 43 states with decennial redistricting have chosen different procedures. How to classify them can be challenging. Scholars and online resources use different categories when labeling the variable "redistricting procedure".

The online encyclopedia of American politics, Ballotpedia, categorizes the redistricting process in three groups: "*State legislature," "independent commissions*" and "*politician commissions*" (Ballotpedia, n. d., a). FairVote uses a different categorization: "*State legislature*," "*bipartisan commission*," "*citizen's commission*," "*panel of civil servants*" and "*not applicable*" (FairVote, n. d., b). In their analysis of redistricting in 26 states, Royden and Li applied the following categories: "*Republican control of the process*", "*Democratic control*", "*split control between the parties*", "*independent commission*", "*politician commission*", "*court-imposed*" and "*court-modified*" (Royden and Li, 2017, p. 16). Professor Justin Levitt of Loyola Law School use the classifications "*legislature alone*," "*advisory commission*," "*backup commission*," "*politician commission*," "*independent commission*" (Levitt, n. d., b). Finally, McGann et al. (2016, p. 153) applied the following categories: "*normal legislative process*," "*independent or bipartisan commission*," "*mixed*" and "*no congressional redistricting*."

This thesis will apply a dichotomous variable, *legislative-based* and *commission-based redistricting* process. As shown, there is a clear consensus on the use of legislative-based as a category. Different scholars and websites separate states with legislative-based redistricting

which have elements of interference from commissions or the judiciary. McGann et al. (2016, p. 153) chose to classify Texas and Maine as "mixed" because of their use of advisory and backup commissions. It has been decided not to do that in this thesis because advisory commissions are not binding and the backup commission is only initiated when the legislative branch fails to deliver a proposal. Royden and Li have categorized New York and Minnesota as court-drawn (Royden and Li, 2017, p. 24). In this thesis, both are classified as legislative-based because New York only used an advisory commission while drawing congressional maps in 2011 and Minnesota can have courts draw maps if lawmakers are unable to agree on a proposal. Although this happened in 2011, the process is regarded as legislative-based because of its origin in the state legislature.

Iowa is a bit trickier case. The district maps are drawn by an independent agency, and a nonpartisan commission consults and oversees the process. The legislature eventually accepts or reject the map proposals (Levitt, n. d, c). Additionally, the legislature has the authority to amend the proposals, but it has not happened as of this day. In Iowa, the main criteria for making the maps are compactness and contiguity. The aim is also to make as fair and competitive maps as possible. Further, the lawmakers do not take into account demographics, incumbency concerns or statistics (Levitt, n. d, c). Iowa is classified as "mixed" by McGann, under "commission, then approved by the legislature." Ballotpedia uses the classification "state legislature." (Ballotpedia, n .d, b). Since the maps are presented as a regular bill and go through the ordinary legislative process including a veto or signature from the Governor, Iowa is classified as legislative-based in this thesis.

All the states in this thesis categorized as legislative-based have districting processes that originate in the legislative branch, either from the state legislature or the general assembly. What they have in common is that the state legislature is the starting point of the process and often politicians can make maps without the interference of other institutions. They are therefore classified as legislative-based altogether.

To simplify the categorization of the redistricting process, this thesis will apply the term *commission-based* which combines the different varieties of redistricting commissions in each state. In general, these are either independent commissions or politician commissions.

4.1.1 Legislative-based redistricting

37 states have chosen a legislative process when redistricting as shown in table 4.1. While there are varieties of the process in each state, the common denominator is most redistricting plans are proposed as a regular bill that follows the normal legislative process. The map proposal is introduced as a bill in the state House and needs to pass to be voted on in the state Senate by a simple majority vote or by 2/3 majorities. When both chambers have agreed upon a map, the proposal is sent to the Governor for signature or veto (McGann et al., 2016, p. 3).

State constitutions will often have a deadline set regarding when the district map proposals need to be approved. If lawmakers are unable to agree upon a plan before the deadline, courts will in some cases need to intervene to make sure the new maps are ready before for the next election. During the redistricting process in 2011, this happened in several states, including Kansas (Essex et al. v. Kobach et al., 2012), New York (Levitt, n. d., d) and Texas (Barnes, 2011). In Minnesota, the Democratic governor vetoed the maps passed by the Republican-controlled Congress, and the plans were sent to the Court (Pugmire, 2011).

Backup Commissions

Some states use a *backup commission* instead of the courts to decide on the layout of the congressional maps if this incident should occur (The Brennan Center for Justice, 2017). Backup commissions often do not have independence from possible influence from politicians, but they do have autonomy to authorize district lines (Cain, 2012, p. 1815). Four states use backup commission if the situation makes it necessary. In 2011, backup commissions were used in only a few states when the legislative branch was unable to produce maps in time. One of them was Connecticut (Altimari, 2011).

Advisory Commissions

Advisory commissions are often used to give recommendations for the state legislature on district lines and to gather public opinion. The state legislature can choose to follow their advice or ignore them altogether. Often the members of advisory commissions are elected officials or are designated to the committee by elected officials (Cain, 2012, p. 1815). Seven states can use advisory commissions. Several states had advisory commissions aiding the state politicians to make congressional maps in 2011, but in the end, the decision was up to

lawmakers. Some advisory commissions have more of an executive role than others; Iowa's bipartisan advisory committee has been given the authority to make map proposals together with the nonpartisan Legislative Services Agency. The legislature can only approve or reject their proposal (Cain, 2012, p. 1813). In New York, on the other hand, the legislature is free to amend, accept or reject any proposal from the advisory commission (Cain, 2012, p. 1814).

Table 4.1: The characteristics of the legislative-based redistricting procedures.

States	C' districts	Court	Commission	Gub' veto	Preclearance in 2011	Process in 2011
Alabama (AL)	7	No	Advisory	Yes	Yes	Legislative
Arkansas (AK)	4	No	No	Yes	Yes	Legislative
Colorado (CO)	7	Yes	No	Yes	No	Court-drawn
Connecticut (CT)	5	No	Backup	No	No	Court-drawn
Florida (FL)	27	Yes	No	Yes	Yes	Legislative
Georgia (GA)	14	No	No	Yes	Yes	Legislative
Illinois (IL)	18	No	Backup	Yes	No	Legislative
Indiana (IN)	9	No	Backup	Yes	No	Legislative
Iowa (IA)	4	Yes	Advisory and nonpartisan LSA	Yes	No	Commission
Kansas (KS)	4	Yes	No	Yes	No	Court-drawn
Kentucky (KY)	6	No	No	Yes	No	Legislative
Louisiana (LA)	6	No	No	Yes	Yes	Legislative
Maine (ME)	2	Yes	Advisory	Yes	No	Legislative
Maryland (MD)	8	No	No	Yes	No	Legislative
Massachusetts (MA)	9	No	No	Yes	No	Legislative

Michigan (MI)	14	No	No	Yes	Yes	Legislative
Minnesota (MN)	8	Yes	No	Yes	No	Court-drawn
Mississippi (MS)	4	Yes	Backup	Yes	Yes	Court-drawn
Missouri (MO)	8	No	No	Yes	No	Legislative
Nebraska (NE)	3	No	No	Yes	No	Legislative
Nevada (NV)	4	No	No	Yes	No	Court-drawn
New Hampshire (NH)	2	No	No	Yes	Yes	Legislative
New Mexico (NM)	3	No	No	Yes	No	Court-drawn
New York (NY)	27	No	Advisory	Yes	Yes	Court-drawn
North Carolina (NC)	13	No	No	No	Yes	Legislative
Ohio (OH)	16	No	Advisory	Yes	No	Legislative
Oklahoma (OK)	5	No	No	Yes	No	Legislative
Oregon (OR)	5	No	No	Yes	No	Legislative
Pennsylvania (PA)	18	No	No	Yes	No	Legislative
Rhode Island (RI)	2	No	Advisory	Yes	No	Legislative
South Carolina (SC)	7	No	No	Yes	Yes	Legislative
Tennessee (TN)	9	No	No	Yes	No	Legislative
Texas (TX)	36	No	No	Yes	Yes	Court-drawn
Utah (UT)	4	No	No	Yes	No	Legislative
Virginia (VA)	11	No	Advisory	Yes	Yes	Legislative
West Virginia (WV)	3	No	No	Yes	No	Legislative
Wisconsin (WI)	8	No	No	Yes	No	Legislative
Total: 37						

Figure 4.1. Shows how redistricting is conducted in 37 states that have chosen a legislative procedure. The states are shown in alphabetical order. The variables are the number of congressional districts, if the judiciary system is involved if the legislative branch is unable to pass new district lines within a deadline or by any other reason fail to agree, if they use a commission; either backup or an advisory. In addition, if the state's Governor can veto the maps or not. This will affect the needed for a party to control *the trifecta*; both chambers of the state legislature and the Governorship. North Carolina may serve as an example: In 2011, the political power in the state was split between a Republican controlled legislature and Democratic Governor. However, since the Governor in North Carolina does not have veto power, all the real power of redistricting is placed in the legislature.

The table also contains information on if the state was subject to preclearance under the Voting Rights Act, an issue which was addressed in chapter 3.2.1. 13 of the states were subject to Department of Justice (DOJ) preclearance under Section 3 of the Act, either to DOJ review only, DOJ and Court or Court only. This applied either to the entire state or in certain counties. Last, the table also describes who drew the congressional districts in 2011. This implies whether it was a legislative process that ended with a regular bill passing in the legislature, if Courts needed to draw maps or if a backup commission drew them. The research has shown that nine states had courts draw their maps after the legislative process failed, one state used a commission, and the remaining 27 had a regular legislative process. A description of the operationalization of each variable is found in chapter 5.5.

Both Republicans and Democrats want *trifecta control*, meaning one-party control of the governorship and a majority in both chambers of the state legislature. Consequently, the party in control of redistricting can draw congressional districts to their benefit to have an advantage in the next election cycles (Kernell et al., 2016, p. 220). Moreover, they can have their map proposals approved by both chambers of the state congress and approved by the Governor from the same party.

Table 4.2: The trifectas in each state after the 2010 election. [14] [15]

Trifectas in 2011		
Republican	**Democratic**	**Split control**
Alabama (AL)	Arkansas (AK)	Colorado (CO)
Florida (FL)	Connecticut (CT)	Iowa (IA)
Georgia (GA)	Illinois (IL)	Kentucky (KS)
Indiana (IN)	Maryland (MD)	Missouri (MO)
Kansas (KS)	Massachusetts (MA)	Nevada (NV)
Louisiana (LA)	West Virginia (WV)	New Hampshire (NH)
Maine (ME)		New Mexico (NM)
Mississippi (MS)		New York (NY)
Ohio (OH)		North Carolina (NC)
Oklahoma (OK)		Oregon (OR)
Pennsylvania (PA)		Virginia (VA)
Rhode Island (RI)		
South Carolina (SC)		
Tennessee (TN)		
Texas (TX)		
Utah (UT)		
Wisconsin (WI)		

In 2011, 23 states had one party controlling the legislative redistricting process as shown in table 4.2. The table shows Republican or Democratic control over the legislative and executive branch and split meaning bipartisan control.

4.1.2 Commission-based redistricting

Types of commission each state use vary widely from who participates, its mandate and structure. There are two types of commissions that differ from the ones used in legislative-based systems: politician and independent commissions.

Following the redistricting in 2011, six states used a commission to draw their congressional districts. Hawaii and New Jersey used politician commissions and Arizona, California, Idaho, and Washington used an independent commission. Members of *politician commissions* are

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[14] Nebraska is not applicable because it has a nonpartisan legislative branch.
[15] The Governor in North Carolina does not have veto power in the redistricting process. Therefore the state will be categorized as under Republican-drawn in chapter 7.

often elected officials or designated by them. The commissions have the autonomy to propose district plans without the approval of the state legislature. In contrast, the members of *independent commissions* are disconnected from elected officials and do not need legislative approval to submit new district lines (Cain, 2012, p. 1817). In the latter, it is required that the members not be public officials with the aim of limiting the direct participation from politicians.

Furthermore, independent commissions have been the subject of some controversy. The independent commission applied in Arizona may serve as an example. The new redistricting process was introduced through a ballot initiative in 2000, called Proposition 106 (Arizona Independent Redistricting Commission, 2001). The aim was to remove the redistricting of state legislative and congressional districts from politicians in the state assembly and to an independent commission, to achieve more competitive elections. The bipartisan commission consists of five members, where the fifth tiebreaking member is the chairperson. This person cannot be registered with any party that is not already on the commission (Arizona Independent Redistricting Commission, 2001). In 2011, the commission created three highly competitive districts (1st, 2nd, 9th congressional districts), four Republican districts (4th, 5th, 6th, 8th congressional districts) and two Democratic (3rd and 7th congressional districts). The commission has been the subject of several legal battles. In 2011, the chairwoman named Colleen Coyle Mathis (Druke, 2017b), was accused of partisanship and neglect of duty. She was then removed by the Republican Governor, and this decision was supported by the Republican controlled state Senate (Lacey, 2011). However, the Arizona Supreme Court reversed this decision and reinstated her (Isenstadt, 2011). In addition to the debate over Mathis membership, there was an intense partisan dispute of how competitive the districts should be. Arizona submitted their map proposals to DOJ for review, as required by Section 5 of Voting Rights Act, and the maps were accepted at the first try (Arizona Independent Redistricting Commission, 2012). In 2012 the Democratic Party won all the competitive districts (Ballotpedia, n. d., d). In 2014 and 2016 the Democrats won two out of three districts (Ballotpedia, n. d., e; f).

The different types of commissions vary regarding how they select their members. In Arizona, they pick from a citizen pool of 25 nominees chosen by politicians when forming the independent commission, while in New Jersey the task falls on the majority and minority leader of both chambers. California has adopted a model of a random selection of members of

their commission (Cain, 2012, p. 1818). Also, the courts are only involved in the process if a map is overturned by public referenda, like in California, or if the members of the commission cannot agree on a neutral tiebreaking member, like in New Jersey. Operationalization of the variables is found in chapter 5.5.

Table 4.3: The characteristics of the commission-based redistricting procedures.

States	C' districts	Independent	Bipartisan	Political	Preclearance in 2011	Court
Arizona (AZ)	9	Yes	Yes	No	Yes	Yes
California (CA)	53	Yes	Yes	No	Yes	Yes
Hawaii (HI)	2	No	Yes	Yes	No	Yes
Idaho (ID)	2	Yes	Yes	No	No	Yes
New Jersey (NJ)	12	No	Yes	Yes	No	Yes
Washington (WA)	10	Yes	Yes	No	No	Yes
Total: 6						

Source: Ballotpedia (n. d., c) and National Conference of State Legislatures (2018b), Levitt (n. d., b; f; g), McGann et al. (2016), Cain (2012) and Royden and Li (2017).

4.2   Closing remarks

This chapter has set out to describe the state-by-state redistricting process in the United States. The states have chosen quite similar systems of redistricting, mainly in two categories; legislative-based and commission-based systems. Legislative systems require redistricting by politicians, and commissions by independent members or members with political affiliations. A majority of the states has chosen a legislative-based method, and only a few have chosen a commission system. The literature showed in chapter 2.3 the relationship between redistricting procedure and partisan bias, and therefore it was necessary to map out the process in each state.

5 Methodology

This chapter aims to do two things. First, to address the methodological decisions and considerations that were made while doing the analysis and writing this thesis. Second, to discuss these decisions.

There will be a description and discussion of the methodology with an emphasis on comparative methods. The case selection for the discussion in chapter 8 was based on Mahoney and Goertz' Possibility Principle. Further, this chapter will also discuss the data analysis approach, the sources used and how the theoretical variables were coded and operationalized. The research approach has been outlined in chapter 1.3. The data was addressed in chapter 1.4. The validity and reliability are discussed in chapter 6.4 and 6.5.

5.1   Timeframe

To study the period from 2012-2016 was chosen for two reasons. First, there is a wide body of literature on the effects of redistricting models and gerrymandering before 2011 using different metrics. The efficiency gap is a relatively new measurement and was first presented in 2014. Consequently, there are limited datasets available before the redistricting process in 2011. Second, there is a consensus in the literature that the redistricting process in 2011 represented a crossroad; it was different to other redistricting procedures because of the broad use of gerrymandering in many states. Additionally, it is interesting to focus on the period from 2012-2016 because the 2018 congressional midterm elections are being held the same year as this thesis is published. This contributes to making the thesis more relevant. However, by choosing such a short period, it can make it more challenging to draw broader conclusions from the results. This is a drawback when considering the external validity.

5.2　　Research design

5.2.1 Comparative methods

Bryman (2012, p. 72) described the comparative design as a study of two contrasting cases with the use of similar methods. The principle being it is easier to understand social phenomena when similar cases are compared to each other. However, it can be challenging to find cases that are comparable because the method is based on ideal types (Lijphart, 1975, p. 163, 172). Comparative studies can contribute to generating broad knowledge on issues in social science (Grønmo, 2011, p. 385). This thesis compares *geographically* because it has included the total population of states from north to south and east to west of the United States. Additionally, it also compares *longitudinally* because it observes states at three different data points. Finally, it compares a smaller number of cases in chapter 8. An important decision to make when formulating a research strategy is the tradeoff between the number of units and the number of variables to include in the analysis. This thesis is first a large-N study with a few variables to answer part one and two of the research question. To answer question three, it is necessary to compare Republican-drawn states.

Lijphart argued that together with statistics, case studies, and experimental design comparative methods is one of the fundamental research designs (Lijphart, 1975, p. 159). Despite its strengths, the method also has some limitations that need to be addressed (Lijphart, 1975, p. 163, 172).

Challenges in comparative methods and how to solve them

Lijphart contended that a fundamental problem in comparative methods is the vast number of variables and few units. This can cause casual over-determination, making it difficult to sort out the key variables from the irrelevant ones (Lijphart, 1975, p. 163). Therefore, he proposed two solutions to the challenges with small-N studies. One solution was to *increase the number of cases*, also, extending the study geographically or longitudinally (Lijphart, 1975, p. 159). Instead of comparing two cases in this thesis, there is first a comparison of the total population of states on a few key variables. Later, there is a discussion regarding a few states with similarities on important variables but they differ in the dependent variable, high Republican bias.

A second solution is to *reduce the property space of the analysis* by merging similar independent variables if they are tapping the same feature. Simultaneously, reducing the values of each variable through dichotomization. It was considered to be more clarifying to have a dichotomous redistricting variable than one with several values. Therefore, the variable *redistricting procedure* was labeled as "legislative-based" and "commission-based." These are two categories which are mutually exclusive. The operationalization of the variables is described in chapter 5.5. This labeling could have been different with a variety of categories which has been done by other scholars, see McGann et al. (2016), Levitt, (n. d., b), Royden and Li (2017). However, it was considered more straightforward to dichotomize the categories since the differences in redistricting procedure did not vary too much.

Further, Lijphart also proposed an approach to solving the challenges with a large number of variables. He recommended focusing on *comparable cases*, meaning cases that are similar in specific key characteristics that are being treated as constants. All states with more than one congressional district are included in the large-N analysis in chapter 4, and thereby excluding irrelevant states without a decennial redistricting procedure.

The cases chosen for the discussion in chapter 8 are comparable on important characteristics; in redistricting procedure, political dominance and number of congressional districts. Moreover, they differ in the amount of partisan bias their district lines produce in congressional elections from 2012 to 2016. Nevertheless, the states can be considered relatively different on other variables, but those variables are irrelevant to answer the research question in this thesis. On the other hand, the risk of not identifying essential aspects of the phenomenon is present. Last, Lijphart recommends focusing the analysis on *key variables* and excluding irrelevant ones that are not critical to answer the research question (Lijphart, 1975, p. 163). This recommendation has been addressed in the previous section.

Equivalence in comparative methods

Issues regarding equivalence are especially sensitive in comparative methods because it requires that the cases being compared be equal and the data used is comparable. In this study, because of the federal system of the United States, the cases are regarded as equivalent. They have the same governmental structure and are governed by the same federal laws. Both the qualitative and quantitative data on the states are derived from the same sources.

5.3   Data

5.3.1 Critique of sources

The data used is described in chapter 1.4., and is a combination of academic literature, analysis from institutions, news sources, public records and court rulings. To review the sources, Scotts (1990) four criteria can serve as a useful framework (Bryman, 2012, p. 544).

1. *Authenticity.* Whether the document applied is real and its origin cannot be disputed.

2. *Credibility*. Evaluates whether the material is free of errors or falsehoods.

3. *Representativeness.* If the format of the document resembles other documents of the same type, or if it deviates from the norm.

4. *Meaning.* Considering if the sources or documents applied are understandable.

The *authenticity* of the primary sources used is viewed as satisfying. I consider primary sources as documents derived from public websites (ending with .gov), academic research that is peer-reviewed, analysis and reports from institutions such as Pew Research Center, the Cook Political Report, the Brennan Center for Justice at NYU Law, FiveThirtyEight, and the Brookings Institution. Moreover, it is known who produced the documents, and its origin is considered to be genuine.

The *credibility* of the documents is viewed as good. Federal records are regarded as having a high level of credibility because they are written by bureaucrats in the federal government that is dependent on producing truthful public sources of information relating to the business of government. On the other hand, public documents can be seen as biased. It is important to be aware of the notion that some government agencies can have more of a political leaning because some employees are politically appointed. This can be a threat to the credibility. Further, much of the cited material is statistics, public opinion polling, and research on electoral behavior. The documents are viewed as nonpartisan and legitimate because they have been published by respected institutions. However, it is important to be aware of the notion that the author of the documents can have an agenda or opinion that he or she wants to be reflected in the documents (Bryman, 2012, p. 551). This can be a threat to the credibility of reports from the Brennan Center for Justice and FairVote which advocate electoral reform. However, the institutions have been cited by news sources and other establishments and is

therefore reviewed as credible. Furthermore, I made a conscious choice of only citing news sources that are regarded as having a reputation of respected journalism and fact-checking, such as such as The New York Times, The Washington Post, Politico and the Guardian, although some exceptions have been made when it comes to the use of information from local news media. By using a variety of sources to verify the information, I regard the data as being credible. Additionally, I have used data from the nonpartisan online encyclopedia of American politics and elections, Ballotpedia. According to their website, all of their articles are written by their editorial staff of 60 writers. Their work has been cited by The New York Times, Politico and The Washington Post. Ballotpedia's work is therefore considered to be reliable although some of the articles have been cross-checked with different sources like Justin Levitt's website All About Redistricting, in cases where there was doubt of some of the information not being completely updated.

In regards to *representativeness*, Bryman notes that in qualitative research, the issue of representativeness is not a meaningful question because it is not representative in statistical contexts (Bryman, 2012, p. 550).

The documents *meaning* is considered to be quite good. Court rulings can be challenging for a non-lawyer to read and comprehend, but a vast majority of the documents used have been accessible to read and relatively understandable.

5.4   Selection of cases

Given that comparative studies often are based on larger entities such as nation-states, organizations or institutions, the selection of cases often involves strategical considerations (Grønmo, 2011, p. 384). Comparative analysis based on countries can study sublevels such as regions, states or counties (Grønmo, 2011, p. 387). The next section relates to the case selection for the analysis in chapter 8.

5.4.1 Mahoney and Goertz' Possibility Principle

The concepts of positive, negative and irrelevant cases when selecting cases in comparative methods was introduced by Mahoney and Goertz (2004) and is mostly related to small N-research. The positive cases are those where the phenomenon that is studied has taken place, in this case, high Republican bias in 2012-2016 (Mahoney and Goertz, 2004, p. 653). Further,

the negative cases are those cases where the phenomenon could have occurred, but didn't, and consequently, are suited to be compared to the positive cases. This is known as the *Possibility Principle* (Mahoney and Goertz, 2004, p. 657). In this thesis, the negative cases are Republican-drawn states in 2011 with relatively low bias in 2012-2016. The irrelevant cases are the states where it was impossible for the phenomenon to occur. Irrelevant cases are a problem for three reasons. First, by including irrelevant cases, too much time is spent on something that cannot answer the research question. Second, by including the total number of cases, the instances that confirms the theory will be artificially increased. Third, the inclusion of irrelevant cases results in too many negative cases, which can lead to false inferences of causality (Mahoney and Goertz, 2004, p. 656). In chapter 8, irrelevant cases are cases with a commission-based redistricting process, Democratic or split-party control or states with only one congressional district. Having said that, the analysis in chapter 8 is not a systematic small-N analysis, but is rather a comparison of states with the guiding help of the Possibility Principle. Moreover, the threshold of an efficiency seat gap of two or more seats was chosen to distinguish the states because it is a standard proposed by the authors Stephanopoulos and McGhee. A partisan symmetry score of -30 or more was chosen because the states with the most substantial bias were placed between -30 and -40 in the dataset that was available. These are also labeled by McGann et al. (2016, p. 73) as the most extreme cases. The literature does not give any indication of what a reasonable threshold of partisan symmetry is, compared to the precise thresholds of the efficiency gap.

Summarized, the cases were chosen for the analysis in chapter 8 by the following criteria:

1. States with a legislative redistricting process

2. States with a significant bias towards one party in two or more election cycles (turned out to be Republican-drawn congressional districts)

3. States with six or more congressional districts

4. Category *one* consists of states with high bias in two or more elections. High bias is defined as an efficiency seat gap of two seats and a partisan symmetry score of -30 and more. Category two consist of the remaining states that do not have such high bias in the elections and are Republican-drawn

5.5   Tables and categorization

This section will give an outline of how the different variables in chapter 4 were operationalized, categorized and coded. The intention has been to use renowned concepts and definitions as they are applied in academic literature. However, the variables ultimately chosen has been operationalized using this author's definitions and understanding of the concepts. It has been important to use operational definitions that reflect the theoretical definitions. It can be a challenging task when there is limited literature available on the subject but the supporting literature was regarded as sufficient to make satisfying operationalization of the variables.

The first categorization contained the whole population of states, and these were distinguished by two procedures; legislative-based or commission-based processes at the time of redistricting in 2011.

Table 5.1: This table shows how the redistricting procedure was coded.

Variable	Operationalization
Redistricting procedure	The different procedures for redistricting are coded as a dichotomous variable: • Legislative-based process • Commission-based process (including independent commission and politician commission)

The dichotomization resulted in two different tables for each redistricting procedure. Table 5.2 below shows how the variables for states with legislative-based redistricting procedures were coded.

Table 5.2: This table shows how the variables for legislative-based states were coded.

Variable	Operationalization
Congressional districts	The number of congressional districts each state has. This describes how many districts that have to be redrawn following the decennial census.
Court	If the state has a procedure for involving the court system in the event were the legislative branch fails to approve a districting plan. This is coded: • Yes • No
Commissions	If the state has a system for including commissions if either the legislative branch fails to adopt a districting plan (*Backup Commission*), or having a commission advising on the process of making the maps (*Advisory Commission*). This is coded as: • Backup commission • Advisory Commission • No
Gubernatorial veto	If the state law requires a signature from the Governor when passing the districting plan as a regular bill. This is important when looking at the trifectas. This is coded: • Yes • No
Preclearance in 2011	If the state was a preclearance state under the Voting Rights Act. This is typically applied to states that have a history of diluting minority votes. This is coded: • Yes • No
Process in 2011	Which institution ultimately ended up deciding the congressional redistricting process in each state when the district lines were last redrawn, in 2011. This is coded as either: • Legislative

52	• Court-drawn
	• Commission (backup)

Table 5.3 shows the trifectas at the time of redistricting in 2011. This is only relevant to states with a legislative process.

Table 5.3: This table shows how the political dominance in each state was coded.

Variable	Operationalization
Trifectas in 2011	Trifectas are operationalized as one party controlling both chambers of the state legislature and the governorship. They are coded as: • R (Republican) • D (Democrat) • S (Split control between the parties)

Further, states with a commission-based redistricting procedure were described through different variables than those with legislative-based systems because the procedures are quite diverse.

Table 5.4: This table shows how the variables for commission-based states were coded.

Variable	Operationalization
Congressional districts	The number of congressional districts each state has. This shows how many districts that have to be redrawn following the decennial census.
Independent	If the commission is regarded as an independent commission. This is coded • Yes • No
Bipartisan	If the partisan composition of the commission was partisan or bipartisan. This is coded • Yes • No
Political	If the commission is regarded as a politician commission. This is coded • Yes • No
Preclearance in 2011	If the state was a preclearance state under the Voting Rights Act. This is typically applied to states that have a history of diluting minority votes. This is coded • Yes • No
Court	If the state law gives the opportunity for involvement from the courts should some incident occur. This is coded • Yes • No

5.6   Closing remarks

This master thesis applies a comparative research design with the use of qualitative and quantitative data. Moreover, it is both a comparatively large-N study where a vast number of cases is compared longitudinally and geographically regarding key characteristics such as redistricting procedure and level of partisan bias. Further, a critical review of the sources has been discussed, as well as the methods for case selection. Finally, the tables used in chapter 4 and how the variables were operationalized was addressed.

6 How to measure partisan bias

As previously mentioned, in *Vieth v. Jubelirer* (2004), Justice Anthony Kennedy indicated that he was open for the possibility to rule in favor of declaring partisan gerrymandering unconstitutional if there was developed a "workable standard" to measure it (McGann et al. 2016, p. 7).

Nevertheless, the U.S. Supreme Court has rejected nearly every available test for partisan gerrymandering. Further, the Court has several times decided that none of the proposed standards presented to the Court has been sufficient to act as a measurement of partisan gerrymandering (Stephanopoulos and McGhee, 2015, p. 833).

The efficiency gap used in this thesis is being tested in the upcoming *Gill v. Whitford* (2018), the case of partisan gerrymandering of state legislative districts in Wisconsin. The partisan symmetry measurement was used by the plaintiffs in *League of United Latin American Citizens* (*LULAC) v. Perry* (2006) but was not accepted by the U.S. Supreme Court as a workable standard. The Justices on the Court expressed a positive view on the idea of partisan symmetry to measure gerrymandering. Since then, scholars have tried to further develop a metric that is based on symmetry, and that can be accepted as a workable standard by the Courts.

6.1   The efficiency gap

Nicholas Stephanopoulos, a professor at the University of Chicago Law School and Eric McGhee, research fellow at the Public Policy Institute of California, introduced the efficiency gap in their article *Partisan Gerrymandering and the Efficiency Gap* in 2014. Stephanopoulos and McGhee describe the efficiency gap as a *measure of undeserved seat share*. The metric shows the proportion of seats a party gets that it would not have won if both parties wasted the equal amount of votes under a different redistricting plan (Stephanopoulos and McGhee, 2015, p. 854).

The efficiency gap is based on the assumption that all gerrymandering is done through the techniques of packing and cracking with the aim of wasting the other sides' votes as much as possible. In practice, this means that all votes that are cast in an election that does not give a party a win in any additional districts are regarded as a *wasted vote* (Cohn and Bui, 2017).

Because elections to the U.S. House are held in an SMDP system, therefore 50 percent of all the votes cast in each election are wasted (Stephanopoulos and McGhee, 2015, p. 851).

This, in turn, establishes two categories of wasted votes;

- All votes that the losing candidate in an election received

- All the additional votes the winning candidate got (50 percent of all votes cast + 1) (Stephanopoulos and McGhee, 2015, p. 834)

Stephanopoulos and McGhee argue that cracking of districts can be blamed for a large number of wasted votes in an election for a losing candidate, whereas packing can be attributed to excess votes for a winning candidate (Stephanopoulos and McGhee, 2015, p. 834).

6.1.1 How to measure the efficiency gap

Moreover, the efficiency gap is the difference between the votes each party is wasting in an election divided by the number of all votes cast (Stephanopoulos and McGhee, 2015, p. 831). The calculation of the efficiency gap is done through three steps.

First, one has to identify how many votes were wasted by both parties in the election. Votes that were cast for a losing candidate are counted as *wasted votes* together with all votes that were cast for a winning candidate above the 50 percent threshold needed to win in the election. Further, the second part of the process it to calculate the whole number of votes wasted by the Republicans and Democrats to find the *net wasted votes*. The value of one party's wasted votes is subtracted with the other party's wasted votes. The efficiency gap is calculated by dividing the entire number of votes cast in the election with the net amount of wasted votes (Petry, n. d.). Concerning uncontested elections, the results and voter turnout numbers are added to a model that has the latest results from congressional and presidential election results (Cohn and Bui, 2017).

$$Efficiency\ gap = \frac{Total\ number\ of\ Democratic\ wasted\ votes - Total\ number\ of\ Republican\ wasted\ votes}{Total\ number\ of\ votes\ cast\ in\ the\ election}$$

Further, if the efficiency gap value is negative, a party is at a disadvantage, and if the value is positive, the party has an advantage in elections (Stephanopoulos and McGhee, 2015, p. 853).

According to Stephanopoulos and McGhee, an efficiency gap of two or more seats lost for one party because of a districting plan in congressional elections or a gap above eight percent in state legislative elections suggests that there has occurred a partisan gerrymander in the district(s) (Stephanopoulos and McGhee, 2015, p. 831).

6.1.2 Critique and limitations of the measurement

Nevertheless, the efficiency gap is not a perfect metric. Smaller states will probably fail the percentage threshold, and two-seat thresholds will likely disadvantage larger states like California or Texas (Cohn and Bui, 2017). To limit this weakness of the efficiency gap, it can be helpful to use the seat gap instead of the percentage gap and to exclude small states with few congressional districts from the analysis.

Ideally, both parties would lose the same number of votes, creating an efficiency gap of zero (Cohn and Bui, 2017). Consequently, this would indicate that when a party receives an increase in its vote share, this results in a twofold growth in its number of seats (Stephanopoulos and McGhee, 2015, p. 850).

Several critics have voiced their opinion on the efficiency gap (Chambers et al., 2017; United States Supreme Court, 2017b). McGann et al. (2016) argue that the efficiency gap is flawed because in a two party system it necessitates a seat/votes function that has a slope of two. Further, an unbiased plan with an efficiency gap of zero means that when a party gets 50 percent of the popular vote, it gets 50 percent of the seats. Winning 55 percent of the vote, it gets 60 percent of the seats (McGann et al., 2016, p. 69). As a result, if there are instances that deviate from this seat/vote function, it is taken as bias.

Also, McGann et al. (2016) argue that a party receiving 60 percent of the votes and 60 percent of the seats would get an efficiency gap of ten percent. The metric is flawed because it combines variance in responsiveness and bias. It also establishes a level of responsiveness as a norm (McGann et al., 2016, p. 69). *Symmetry* at a certain level is defined by McGann et al as "*the difference between the seat share Party A gets for the level of the vote (say 55 %) and*

the seats share Party B would get if it were to win that level of the vote" (McGann et al., 2016, p. 66). *Responsiveness* is calculated from the seat/votes function. A highly responsive plan gives the party with the most votes an advantage, no matter which party it is, unlike partisan bias where one specific party is advantaged (McGann et al., 2016, p. 66). Additionally, high responsiveness means that the districting plan is winner-takes-all, involving that if the vote share shifts just a few percentage points, then several districts will be won by the other party. However, it does not exist a standard on what constitutes an appropriate level of responsiveness.

Further, there can be valid reasons for why states vary in their responsiveness, and different independent political variables can explain it. A politically homogenous state like Massachusetts would get a highly responsive plan, and a heterogeneous political state like Pennsylvania would get lower responsiveness. Both parties would in a state like Pennsylvania have safe districts where they have stable partisan support.

Seats and votes are calculated in this way in the efficiency gap because it is assumed that the number of votes each party waste are the same (above 50 percent + 1). However, it is not a given that the parties waste the same number of votes. McGann et al. (2016) claim that Stephanopoulos and McGhee (2015) are insisting on an arbitrary seat and votes function as a norm. Instead, it is necessary to estimate the seat/vote function for each state, the authors argue (McGann et al., 2016, p. 70).

Additionally, Nate Cohn and Quoctrung Bui at The New York Times has asserted that the efficiency gap is not a test of partisan gerrymandering, but instead a way to see if a map is disadvantageous to a party's voters in a way that influences election results until the next decennial redistricting (Cohn and Bui, 2017).

6.2　Gelman and King's partisan symmetry standard

The partisan symmetry standard was developed by Gelman and King in 1994. Further, in *LULAC v. Perry* (2006), partisan symmetry was understood as the deviation in the seat share each party would receive if they were given the same percentage of the vote in the entire state (Stephanopoulos and McGhee, 2015, p. 843). Therefore, it is defined as *"the degree to which an electoral system unfairly favors one party in the translation of statewide (or nationwide) votes into the partisan division of the legislature"* (Gelman and King, 1994, p. 543). Moreover, it involves whether a districting plan is treating the major parties, the Republican and Democratic Party, symmetrically when converting their votes into seats (Stephanopoulos and McGhee, 2015, p. 833).

6.2.1 The logic of partisan symmetry

King et al. argue (United States Supreme Court, 2006) that partisan symmetry measure fairness in election systems, not gerrymandering. A symmetrical two-party electoral system will treat the parties equally. Furthermore, partisan symmetry measures how the parties would perform hypothetically if they had received a certain percentage of the vote. The different performance of each party is the partisan bias value (United States Supreme Court 2006, p. 4, 5). However, the asymmetry is in many instances caused by gerrymandering when a party is receiving a minority of the vote, and a majority of the seats. Nevertheless, it is up to the Courts to decide if the symmetry score is an outcome of political geography, redistricting principles or gerrymandering (United States Supreme Court 2017b, p. 18).

The idea is simple; if Republicans receive 52 percent of the popular vote, they should win 60 percent of the seats. In the next election, if Democrats win 52 percent of the vote, they too should get 60 percent of the seats (McGann et al., 2016, p. 57). The authors thus measure how many seats Democrats or Republicans should receive according to different levels of the popular vote they win. By doing this, they can measure to what extent a districting plan is violating symmetry (McGann et al., 2016, p. 57). Consequently, symmetry is calculated by shifting votes to simulate a tied election (Stephanopoulos and McGhee, 2015, p. 831).

Professors H. K. Gerken, J.N. Katz, G. King and S. S.-H Wang, advocated in an amicus brief to the U.S. Supreme Court at the proceedings of *Gill v. Whitford* (2017) for the use of the

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partisan symmetry principle as a judicial standard of partisan gerrymandering (see also Brief of Amici Curiae Political Science Professors in *Gill v. Whitford,* 2017). They argue that the different tests that exist for partisan symmetry are reliable, simple, transparent and is widely accepted by social scientists (United States Supreme Court 2017c, p. 4). The phenomenon of gerrymandering is growing, they contend, and is intensifying the effects that natural clustering of voters is producing (United States Supreme Court 2017c, p. 12).

Therefore, the metric makes it possible to measure a districting plans symmetry and responsiveness (McGann et al., 2016, p. 65). A fair map has a partisan symmetry of zero, meaning that no party is benefiting more than the other from the plan (McGann et al., 2016, p. 67). Opposite, 100 percent asymmetry score indicates that one party will receive all the seats if it gets 45 percent or more in the popular vote (McGann et al., 2016, p. 74)[16].

Symmetrical and unbiased plans

Moreover, SMDP elections are very responsive to changes in electoral support. If a state is equally divided in partisan support, then a swing in one percent in the popular vote can result in a swing in three to four percent in seats (districts) (McGann et al., 2016, p. 60). This is evident in many U.S. House elections and can be referred to as a *winner- take-all-plan*. However, it is also possible to draw districts without the same responsiveness. On the outset, it can be expected that a party in a state to win five out of ten districts if it receives 45 percent of the popular vote. Under an unresponsive plan, if this party increases its popular vote to 55 percent, it still would get five seats out of ten (McGann et al. 2016, p. 61). A plan of this kind is especially favorable to incumbents that want to secure their seats. Following a proportional districting plan, a party getting 60 percent of the vote would win six out of ten seats.

Asymmetric and biased plans

When drawing a district to create a partisan advantage, the district has to be skewed. Therefore, an effective gerrymander is according to McGann et al. (2016) a district where you pack more than 60 percent of the other party's voters into a district. To maximize the average seat-win a party gets, one can draw two districts where one party gets 20 percent and the other

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[16] The their data was calculated using the seat/vote functions with official election results from 2012, 2014 and 2016 and later by using the seat/vote function to calculate the partisan symmetry (McGann et al., 2016, p. 65).

80 percent of the vote. This results in eight relatively safe districts for the gerrymandering party. Therefore, if a party gets only 50 percent of the vote, it can presumably win six or seven seats out of ten.

6.2.2 Critique and limitations of the measurement

Stephanopoulos and McGhee (2015) argue that a fundamental problem with the partisan symmetry standard is that it is based on hypothetical election results instead of actual results (Stephanopoulos and McGhee, 2015, p. 835). Also, they are critical of the use of *approximate uniform partisan swing* which assumes that districts tend to swing (vote) along with the statewide mean (Stephanopoulos and McGhee, 2015, p. 859). Additionally, partisan symmetry cannot be calculated in systems that are noncompetitive, because the vote share flip in a tied election seems unlikely. Proponents of the metrics have accepted this critique (Stephanopoulos and McGhee, 2015, p. 860). Further, other opponents of the tests argue the partisan symmetry standard is based on proportional representation (United States Supreme Court, 2017d, 25), but according to Gerken et al. (2017), this is not the case. Tests based on partisan symmetry does not require an equivalence between how many numbers of votes that were won in an election and seats received (United States Supreme Court 2017c, p. 21). Moreover, it is highly important is to gauge if each party has the same possibility to translate votes into seats, or if one party has a better chance at this than the other (U.S. Supreme Court 2017c, p. 21). King, Grofman, Gelman, and Katz (United States Supreme Court, 2006, p. 7, 8) have confirmed this in an amicus brief to the U.S. Supreme Court in *LULAC v. Perry* (2006).

Furthermore, Stephanopoulos and McGhee argue that the measure of partisan symmetry and the efficiency gap are closely connected. In fact, in a tied election, the tests are mathematically identical (Stephanopoulos and McGhee, 2015, p. 856). Given that a tie is an unusual occurrence, it is safe to say that the measures can be interpreted differently. In addition, in an ordinary election where one party receives a majority of the votes, it is necessary to shift each party's vote share in each district to compute the symmetry value (Stephanopoulos and McGhee, 2015, p. 856). This shift leads to partisan symmetry differing from the efficiency gap, which uses real election results (Stephanopoulos and McGhee, 2015, p. 857).

Having this said, Justice Kennedy noted in the majority opinion in *LULAC* (2006) that asymmetry can also be caused by other variables than gerrymandering, such as residential

patterns of voters and the need to comply with redistricting criteria. Therefore the partisan asymmetry measure could not alone represent the legal test for gerrymandering (Stephanopoulos and McGhee, 2015, p. 846).

6.3   Other measures of partisan bias

6.3.1 The Polsby-Popper Test

The Polsby-Popper Test is one of many metrics that measure how compact congressional districts are. Further, it is one of the most used metrics in the political science literature because of its simplicity. The Polsby-Popper Test is based on the relationship between a shapes area and perimeter (isoperimetric quotient, IPQ). The results from the IPQ are put in an index to assess possible gerrymandering (Fan et al., 2015, p. 741). The test called Cpp is done by calculating "*the ratio of the area of a shape to the area of the circle – the reference shape – that has the same perimeter as the shape*" (Fan et al., 2015, p. 741). The range of the measurement is normalized from 0 to 1. Higher scores signify a more compact shape of the district. Cpp is a sensitive metric and is often used to identify districts with unusual shapes, often interpreted as an indication of gerrymandering. One weakness of the Polsby-Popper test is how to differentiate between oddly-looking districts that are majority-minority and those that are pure partisan gerrymanders.

6.4   Validity

Bryman (2012, p. 169) defines validity as *"the issue of whether an indicator (or set of indicators) that are devised to gauge a concept really measures that concept."* Further, validity concerns if the data applied is relevant to answer the research question (Hellevik, 2011, p. 183).

Internal validity

Internal validity refers to whether the results of the study can be explained by a hypothesis or a set of expectations (Grønmo, 2011, p. 417). Further, to have a high degree of internal validity demands an awareness of potential bias. Since parts of this analysis are explorative, the latter can be challenging. Bias can be connected to errors in selection methods, or in the

evaluation of the results. The question of the internal validity in this thesis regards whether the study is measuring the relevant aspects of redistricting procedures, partisan bias and reasons for high Republican bias. This thesis uses several statistical instruments to measure the symmetry of congressional districts to assess how well parties translate votes to representation (seats). The question of interest, therefore, is whether the measurements chosen reflect the phenomenon of interest. Additionally, it needs to be established what the purpose of the use of these tools is. The aim is to measure *partisan bias*, and not necessarily gerrymandering. High partisan bias scores can be an indication of gerrymandering, but it can also be a result of other factors. When the U.S. Supreme Court is calling for a metric to measure partisan gerrymandering, and eventually rejects the proposed standards, the metrics can still be useful statistical tools to measure partisan bias. There are also several other metrics used in research on gerrymandering and the translation of votes-to-seats. For example, seat-to-vote curve analysis and mean-median difference analysis. By using one of these measures, it may have resulted in different results in this thesis. The internal validity is satisfying when considering that some of the most applied metrics of partisan bias in the literature are used. It is also common to use several metrics when analyzing partisan bias. Further, key variables of the *redistricting procedures* in each state are considered to be the number of congressional districts, legislative-based or commission-based, interference from other institutions, preclearance, and the Governor's veto power, as shown in chapter 5.5. These aspects are considered in the literature as essential variables of a state's redistricting procedure. On the contrary, a drawback is that the descriptions are based on a variety of sources and not only one official document. This can contribute to reducing the internal validity. However, by giving a broad account of the different variables as they are described by the sources, the thesis is measuring the concept redistricting procedure as it is supposed to. Furthermore, due to time and space constraints, only a few variables were included. There can, therefore, be other aspects of the redistricting process that has not been addressed. However, the most important aspects have been covered, contributing to making the internal validity satisfying.

External validity

If the results of the study can be generalized to different contexts, it refers to the external validity. This concerns if the study's result is representative to larger contexts (Grønmo, 2011, p. 233). Since the whole universe of cases is included in the first part of the study, the external

validity is considered to be quite good. However, several cases are excluded because of their size in chapter 7, which can reduce the external validity. Additionally, comparative methods can only lead to what Lijphart describes as partial generalizations (Lijphart, 1975, p. 172).

Summarized, although there are some drawbacks, the overall validity is considered to be satisfying. Likewise, the research design and data are relevant to the research question and the intentions of the study. The key concepts have been defined theoretically and operationalized systematically.

6.5   Reliability

Bryman (2012, p. 169) defines reliability as "*the consistency of a measure of a concept.*" Additionally, Hellevik notes that reliability refers to the accuracy of the measurements in the study, and the occurrence of random measurement errors. This is an important question regarding quantitative research methods (Hellevik, 2011, p. 184). A reliable study is repeatable for others, and the results can be verified (Bryman, 2012, p. 46). Furthermore, problems with reliability are related to random errors in the measurements itself. A study has a high degree of reliability if several independent measurements of the same phenomenon give the same results and if the variations in the material is a result of factors other than the research design itself (Grønmo, 2011, p. 220). Both the efficiency gap and partisan symmetry are acknowledged measures of partisan bias. The methods of calculating them are relatively easy even for someone without a mathematical degree. This increases the reliability of the statistical instruments. In close elections, the efficiency gap can be entirely accurate, while in races where one party dominates it is less precise (Royden and Li, 2017, p. 18). Consequently, these weaknesses may also suggest that it may be difficult to use the efficiency gap in longitudinal studies (Royden and Li, 2017, p. 18).

The use of secondary analysis data

The quantitative data used in this thesis is secondary which can contribute to reducing the reliability. Since there is a third-party that has done the calculations, there is the possibility of miscalculations, inaccuracies and random errors which is difficult to identify without doing the calculations myself. However, the datasets have been published by acclaimed authors and institutions, and the figures have been cross-checked in other issued reports. This increases

the reliability. Furthermore, there are several advantages in using secondary analysis data. First, it is undoubtedly cost and time effective. Second, many datasets available are of high quality regarding sampling procedures, and how far-reaching the data sets are geographically (Bryman, 2012, p. 313). This opens up the ability to perform a longitudinal analysis. If I had to calculate the partisan symmetry and efficiency gap myself, I would have had limited opportunity to extend the analysis through a longer period. Besides, when reanalyzing existing data, it can provide some new interpretations of the material (Bryman, 2012, p. 315).

However, there are also some limitations to the use of secondary data. There is a risk of losing familiarity with the material. Therefore, it is necessary to have enough time to get to know the different variables and values (Bryman, 2012, p. 315). Also, there is no control over the quality of the data. Last, key variables in the analysis may be missing from the material (Bryman, 2012, p. 317). Unfortunately, this was a bit of a challenge in this thesis. It was challenging to find efficiency gap percentage calculations in the years of 2012 and 2014. Therefore, the analysis was concentrated on the efficiency seat gap, since that data was available. Additionally, the use of this type of data has also been recommended by Stephanopoulos and McGhee (2015) and Royden and Li (2017).

To measure the reliability, one can test the *stability* by having the same person conduct a new measurement of the phenomenon or examining the *inter-observer consistency* when different scientists are doing the same analysis of the same event (Bryman, 2012, p. 169, 279; Hellevik, 2011, p. 184). Further, when translating data into different categories which has been done in this thesis, there is a risk of inconsistency in the categorization because of the degree of subjectivity that is involved. By having someone else doing the same categorization, the reliability could have been tested (Bryman, 2012, p. 169). However, this is not possible to do in this thesis because the data is secondary.

Overall, the reliability of the data material is viewed as satisfying. There is little reason to doubt the data used because the datasets have been applied extensively in research on gerrymandering.

6.6   Closing remarks

This chapter has focused on three different ways to measure partisan bias that are renowned metrics in the political science literature. The efficiency gap measure how many seats each

party waste in an election and aim to capture the nature of partisan gerrymandering; the packing and cracking of districts, in one numeric value. Further, the partisan symmetry standard measures how fair the election system is and how symmetrically the parties' votes are translated into seats. The Polsby-Popper test is a measurement to evaluate a district's shape, on a compactness scale. Low compactness can be an indication of gerrymandering. In regards to validity, the overall validity is considered to be satisfying. All three metrics are acknowledged in academia, even though some critique has been voiced against them. Furthermore, using and comparing all three metrics will give a good indication of the extent of partisan bias in the states. Additionally, the reliability is considered to be good. The datasets are secondary material, but they have been calculated and published by renowned scholars and institutions. As a result, they are considered to be credible.

7 Partisan bias during the last decade

This chapter will apply the metrics of the efficiency gap and partisan symmetry to show the partisan bias in the elections of 2012, 2014 and 2016 to the U.S. House of Representatives. The Polsby-Popper Test is a commonly used metric to measure unusual district shapes, often seen as an indication of partisan gerrymandering. Further, by using Polsby-Popper, it is interesting to see if it confirms any tendencies shown by the votes-to-seats related metrics.

Having this said, the purpose of this chapter is to illustrate the tendencies of bias between 2012 and 2016 which has been referenced in the literature and by that answering research question number two: "*to what extent does the electoral map create partisan bias in congressional election results in the states with a decennial redistricting procedure?*". Furthermore, the results from this chapter will show which states to include in the comparative discussion in chapter 8.

In the efficiency gap analysis, all states with fewer than six congressional districts are excluded. The 26 states included representing 85 percent of all the congressional districts in the United States. Regarding partisan symmetry, states with fewer than three congressional districts are omitted from the analysis. Also, the Polsby-Popper Index compares states with two or more congressional districts. Because some of the metrics are sensitive to small states, not all the states are included in analysis. In reality, only states with six or more districts are comparable. However, the other, smaller states can act as a support for showing overall tendencies.

7.1   The efficiency gap
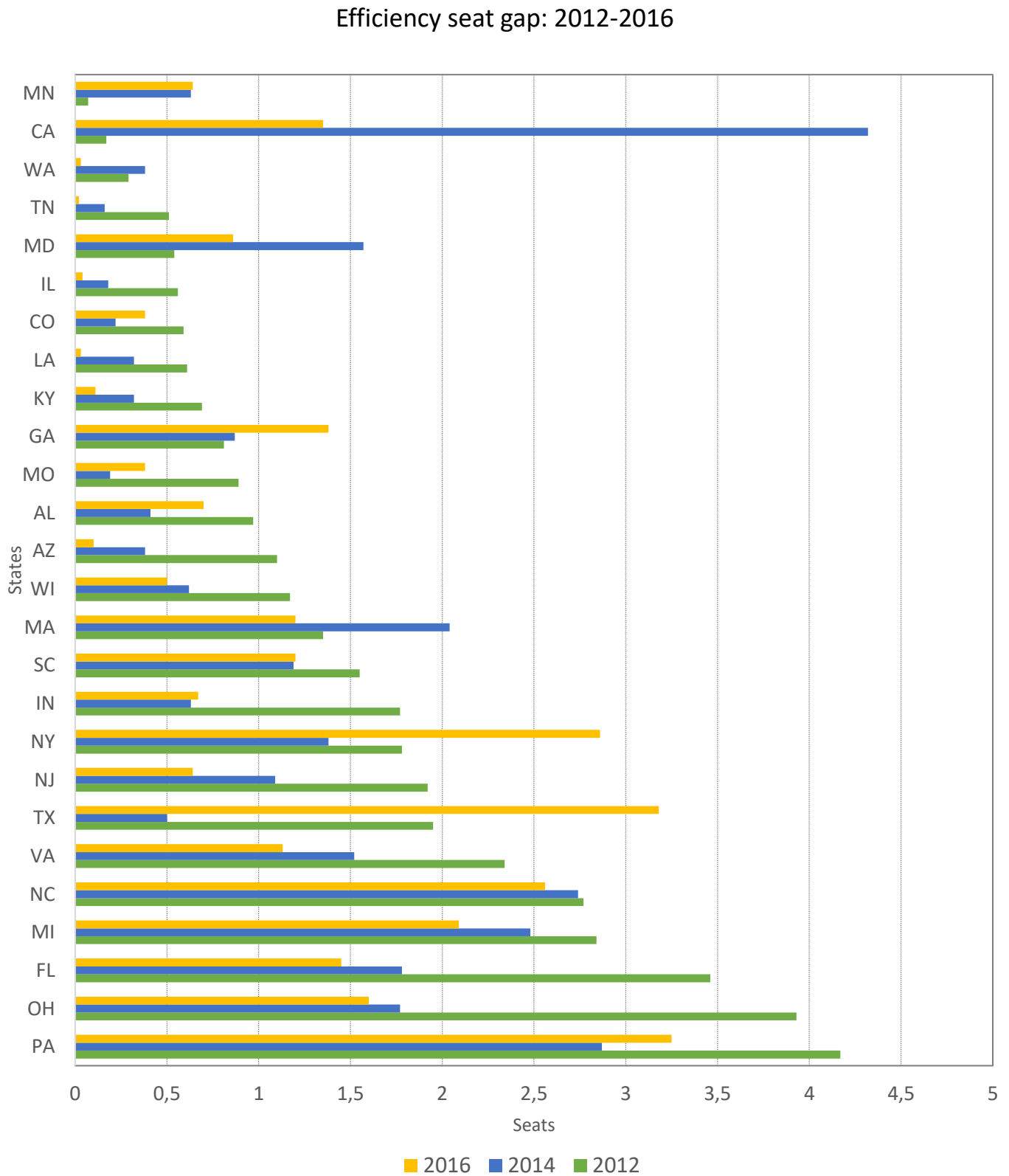
Efficiency seat gap: 2012-2016

Figure 7.1: The efficiency seat gap in the U.S. House elections of 2012, 2014 and 2016.

In figure 7.1., the states are ranked by their bias in 2012 from lowest to highest. The y-axis shows each state, and the x-axis shows the efficiency seat gap values. Omitted from the figures are Alaska, Vermont, South Dakota, North Dakota, Hawaii, Idaho, Montana, Wyoming, Delaware, Rhode Island, New Hampshire, Maine, West Virginia, New Mexico, Nebraska, Utah, Nevada, Mississippi, Kansas, Iowa, Arkansas, Oregon, Oklahoma, and Connecticut.

One observation is that there is a clear difference among the states between the congressional elections in 2012 and 2016. Only a few states have a consistent seat gap of two in all three election cycles. Additionally, with a few exceptions, the bias is decreasing from 2012 to the next elections. Exemplified, swing states in U.S. Presidential elections such as Pennsylvania, Ohio, and Florida have the largest bias in 2012, well beyond three seats. This bias decreased in 2014. Overall, there is quite a large variation in each state when it comes to bias measured by the efficiency gap. Stephanopoulos and McGhee argue that a seat gap of two or more seats is an indication of partisan gerrymandering (Stephanopoulos and McGhee, 2015, 887). However, this seat gap will act differently depending on if the state is large or small. A two-seat gap in Texas with its 36 congressional districts looks more natural than a seat gap of two in Alabama with its seven districts. Consequently, a bias of two seats or more in a small state will have a greater impact on the translation of votes into seats than in a large state.

Next, there will be a more in-depth look at each election in 2012, 2014 and 2016 using the efficiency seat gap. In the three following figures; 7.2, 7.3 and 7.4 the states are sorted alphabetically, by redistricting procedure and by political dominance. The y-axis shows the efficiency seat gap values; the x-axis shows each state. Negative seat gaps indicate Republican bias; positive seat gaps indicate Democratic bias.
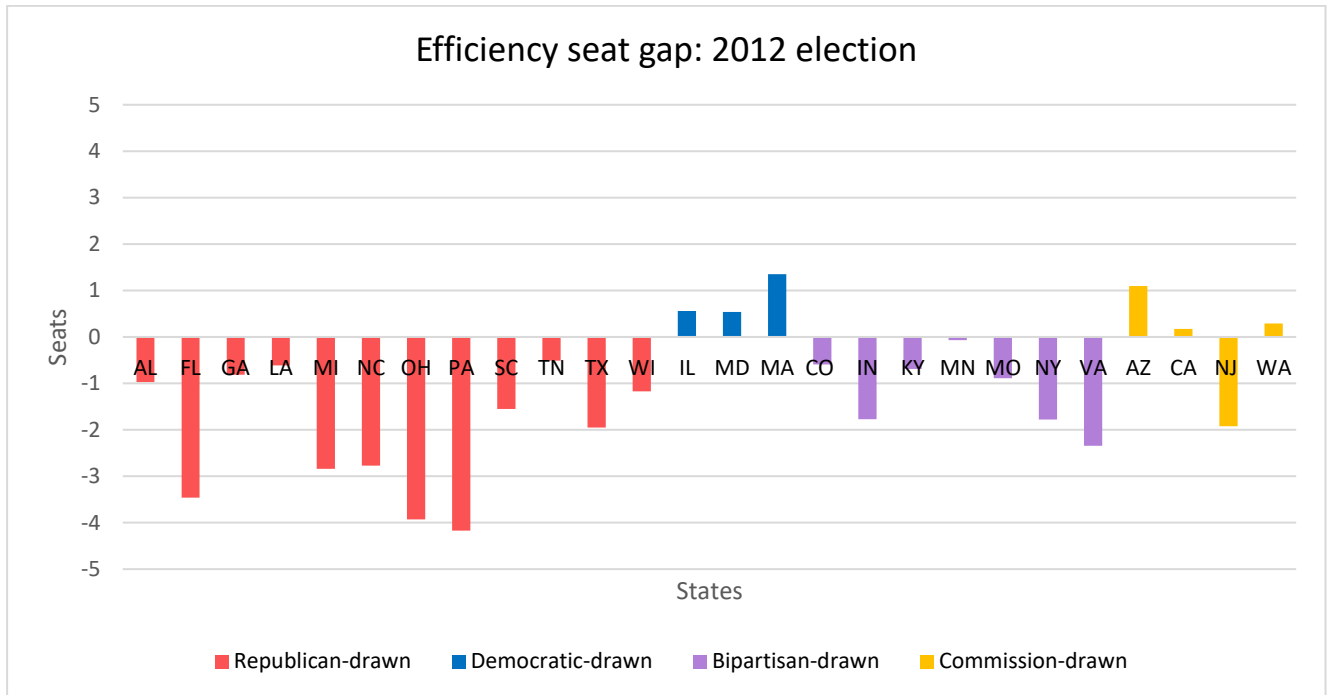
Figure 7.2: The efficiency seat gap in the 2012 U.S. House election.

Pennsylvania (PA), Ohio (OH), Florida (FL), Michigan (MI) and North Carolina (NC) were the states with the highest efficiency seat gap scores in 2012. These states had a legislative redistricting process in 2011, and the Republican Party controlled the trifecta, except for North Carolina, which had a Democratic Governor in 2011. However, the Governor has no veto power over the district maps in North Carolina; therefore, the state is categorized as Republican-drawn. The states with the lowest seat gaps were Minnesota (MN), California (CA), Washington (WA), Tennessee (TN), and Maryland (MD). California and Washington use an independent redistricting commission. Minnesota had split control between the parties, Tennessee had Republican control, and Maryland had Democratic. Another observation is among the 26 states, 20 of them had Republican bias in 2012. This includes seven bipartisan drawn states and commission-drawn New Jersey, indicating that the Democratic Party had challenges in drawing maps that favored them.
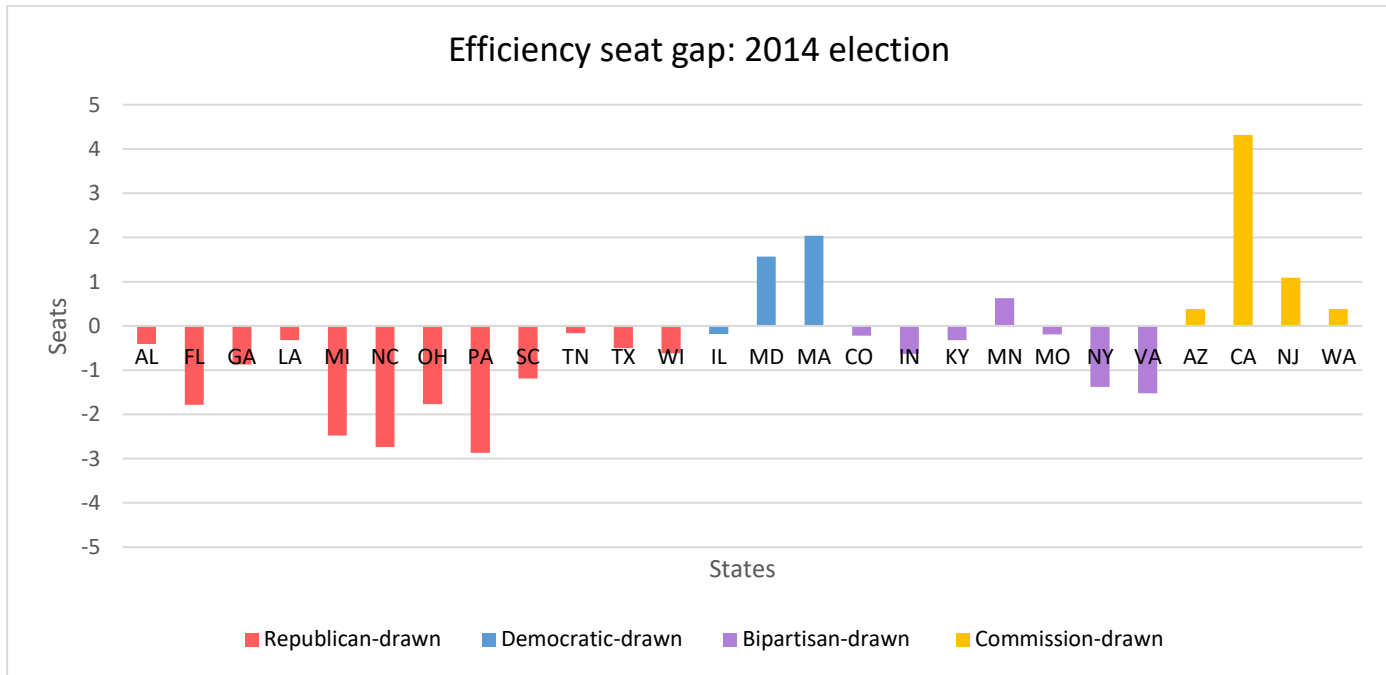
Figure 7.3: The efficiency seat gap in the 2014 U.S. House election.

As this figure shows, Pennsylvania, (PA), North Carolina (NC) and Michigan (MI) continued to have high scores, in addition to California (CA) and Massachusetts (MA) in 2014. All had state legislatures drawn their maps except California. Massachusetts had Democrats controlling the trifecta, and Pennsylvania, North Carolina, Michigan had Republican control. The lowest scores had Tennessee (TN), Illinois (IL), Missouri (MO), Colorado (CO) and Kentucky (KY). These states had a legislative process of redistricting, but only Tennessee and Illinois had full partisan control of the redistricting process in 2011. It is uncertain what is causing California to be an outlier in 2014. This can be a result of a random measurement error, or because of a phenomenon in 2014. As indicated in figure 7.1, the overall-bias was reduced in 2014.
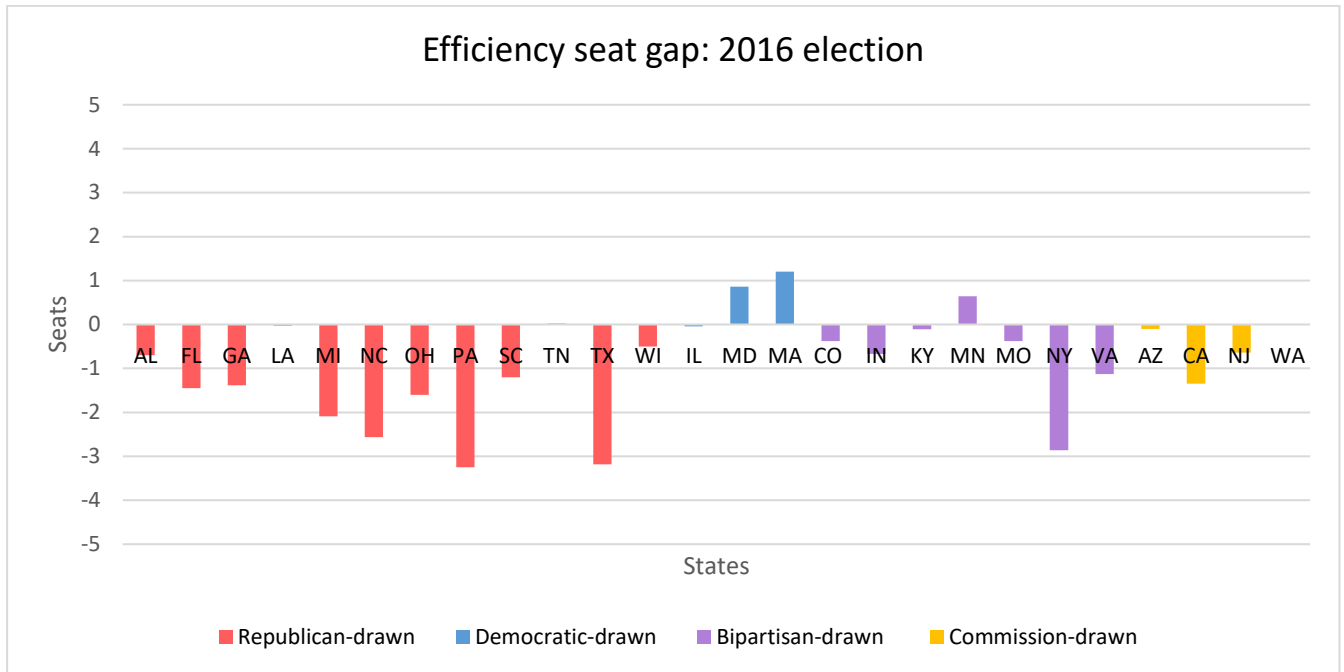
Figure 7.4: The efficiency seat gap in the 2016 U.S. House election.

Two years later, the states with the highest scores were again Pennsylvania (PA), North Carolina (NC) and Michigan (MI). Also, Texas (TX) and New York (NY) had a high bias favoring the Republican Party. The GOP dominated the redistricting process in all these states, except New York, which had a split control between the state legislature and Governor. The lowest efficiency gap scores were found in Tennessee (TN), Washington (WA), Louisiana (LA), Illinois (IL) and Arizona (AZ). Arizona and Washington use an independent redistricting commission. Tennessee and Louisiana had full Republican control of the redistricting process in 2011, and Illinois had Democratic control. The Democratic Party had only a bias in two states, Maryland (D) and Massachusetts (MA) and bipartisan-drawn Minnesota.

Preliminary conclusions

The efficiency seat gap analysis has revealed a striking result for Democratic candidates. The party seems to consistently be at a disadvantage in the three elections. In 2012, Illinois and Maryland did not even have one extra efficiency gap seat in favor of the Democrats. Massachusetts had what roughly is 1, 35 additional seats. In 2014, Illinois had a Republican bias measured in the seat gap, but not amounting to an extra seat for the Republicans. Maryland and Massachusetts both had one extra seat, nearly two in favor of Democrats. In

2016, Illinois had yet again a Republican bias, and of the three states, only Massachusetts Democrats got one extra seat in the U.S. Congressional delegation.

Pennsylvania, North Carolina, and Michigan are all considered key swing states in presidential elections, so-called battleground states with an equal distribution of Republicans and Democrats. They have among the highest scores in all three election cycles, and all had efficiency seat gap above Stephanopoulos and McGhee's two-seat threshold in 2012-2016. Further, Ohio, Florida, and Virginia in 2012, Massachusetts and California in 2014 and Texas and New York in 2016. According to Stephanopoulos and McGhee, this can be viewed as an indication of partisan gerrymandering. There was a substantial bias in favor of the Republican Party in 2012, but in many states, this gradually decreased.
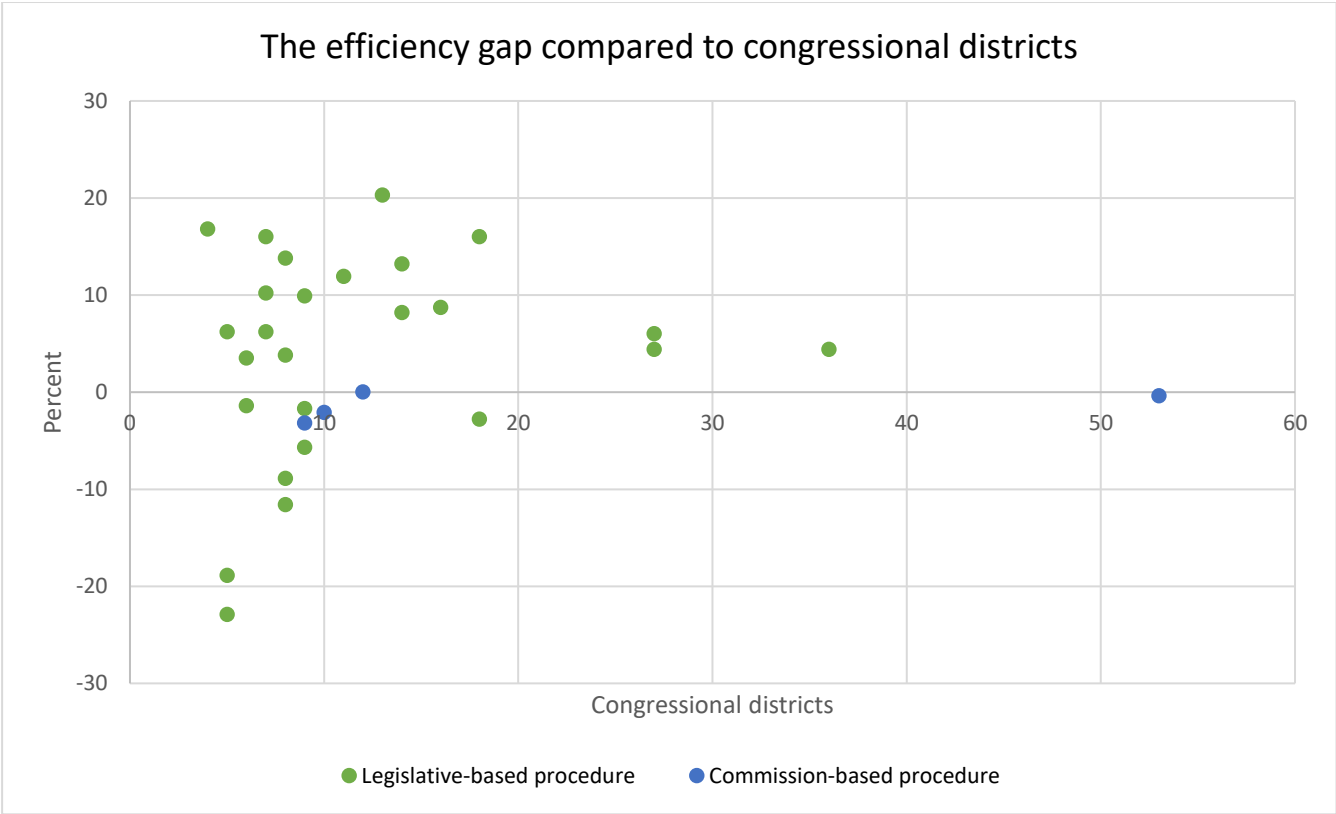
Figure 7.5: The efficiency gap in percent for the election in 2016 compared to the number of congressional districts. The y-axis is the efficiency gap values in percent; the x-axis is the number of districts.

Moreover, figure 7.5 shows that the states with ten or fewer congressional districts have a majority of the highest efficiency gaps in the United States when measured in percent. The *positive* efficiency gap percentage values indicate Republican advantage; *negative* values are pro-Democratic. States with fewer than five congressional districts have been excluded from the analysis (Lavery, 2017; McGlone and Needham, 2017).

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As indicated by the seat gap measurements, states with commission-based redistricting have close to zero bias. A few states have a Democratic-bias. However, they are mostly medium to small states, between five to ten congressional districts. Furthermore, the Republican Party has an advantage in medium to larger states, resulting in a more substantial Republican representation in the U.S. House. However, the figure cannot show a correlation between the number of congressional districts and efficiency gap in percent. In 2016, one of the largest states Pennsylvania (18 districts) failed both the percentage and seat gap threshold proposed by Stephanopoulos and McGhee. Smaller states like North Carolina (13 districts) and Michigan (14 districts) also failed both tests. States that only failed the percentage test, but not the seat threshold, were medium-sized states like Ohio (16 districts), Georgia (14 districts), Maryland (8 districts), South Carolina (7 districts), Virginia (11 districts) and Alabama (7 districts). Additionally, it is important to note that the percentage gap proposed by Stephanopoulos and McGhee was a threshold for state legislative lines, so there is some uncertainty when making inferences from congressional districts using this threshold.

7.2　Partisan symmetry

This section will show the partisan symmetry scores in all the states with more than three congressional districts. Figures 7.6, 7.7 and 7.8 have been sorted alphabetically, by redistricting procedure and political dominance. The y-axis shows the symmetry values; the x-axis shows each state. *Positive* values indicate bias in favor of Democrats; *negative* values are bias in favor of Republicans. Omitted from the analysis are Alaska, Vermont, South Dakota, North Dakota, Hawaii, Idaho, Montana, Wyoming, Delaware, Rhode Island, New Hampshire and Maine.
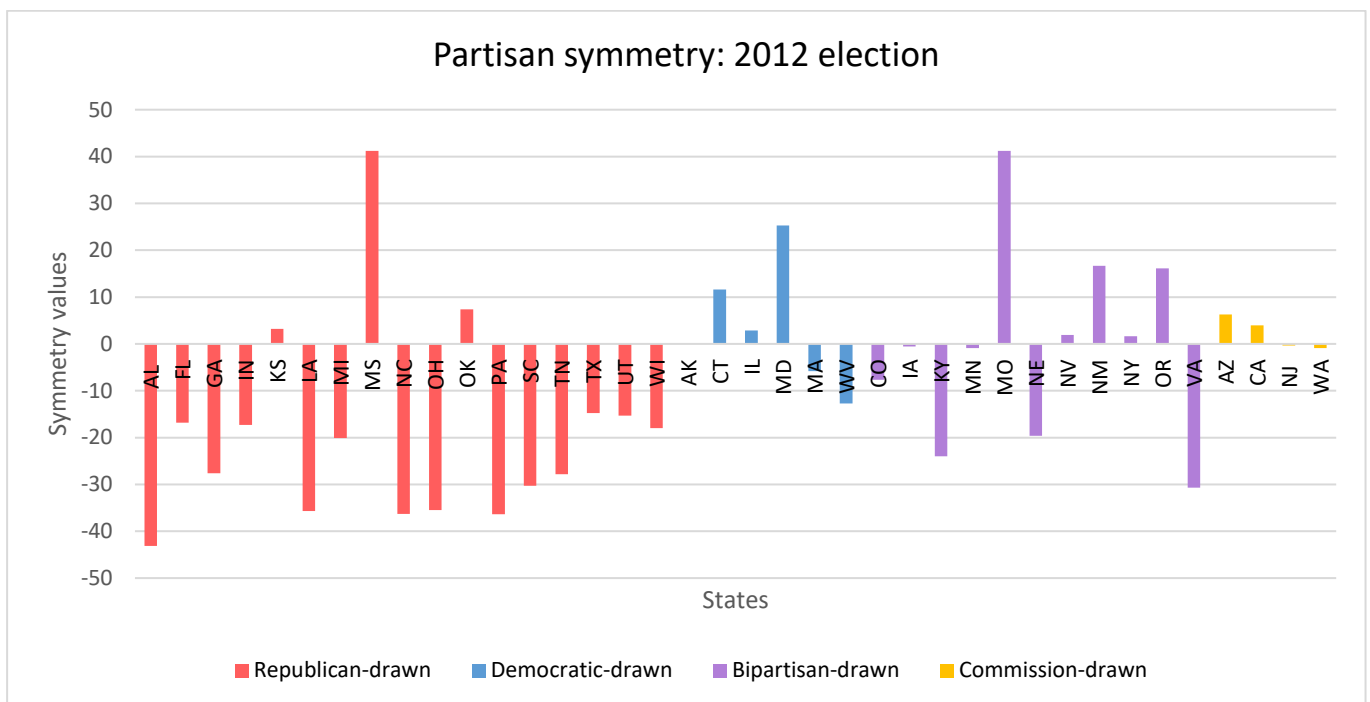
Figure 7.6: The partisan symmetry scores in the 2012 U.S. House election

Taking a closer look at the partisan symmetry in 2012, one observation is that just three states that were drawn by Democratic politicians had a partisan symmetry score in favor of Democrats. Additionally, bipartisan-drawn New Mexico (NM) and Oregon together with commission-drawn Arizona (AZ), California (CA), (OR) also had a Democratic bias. Surprisingly, Democratic-drawn Massachusetts (MA) and West Virginia (WV) had a Republican bias as well. Commission-based states had marginal asymmetry scores, where New Jersey (NJ) and Washington (WA) are close to zero bias. Alabama (AL), North Carolina (NC), Ohio (OH), and Pennsylvania (PA) has the highest Republican bias.
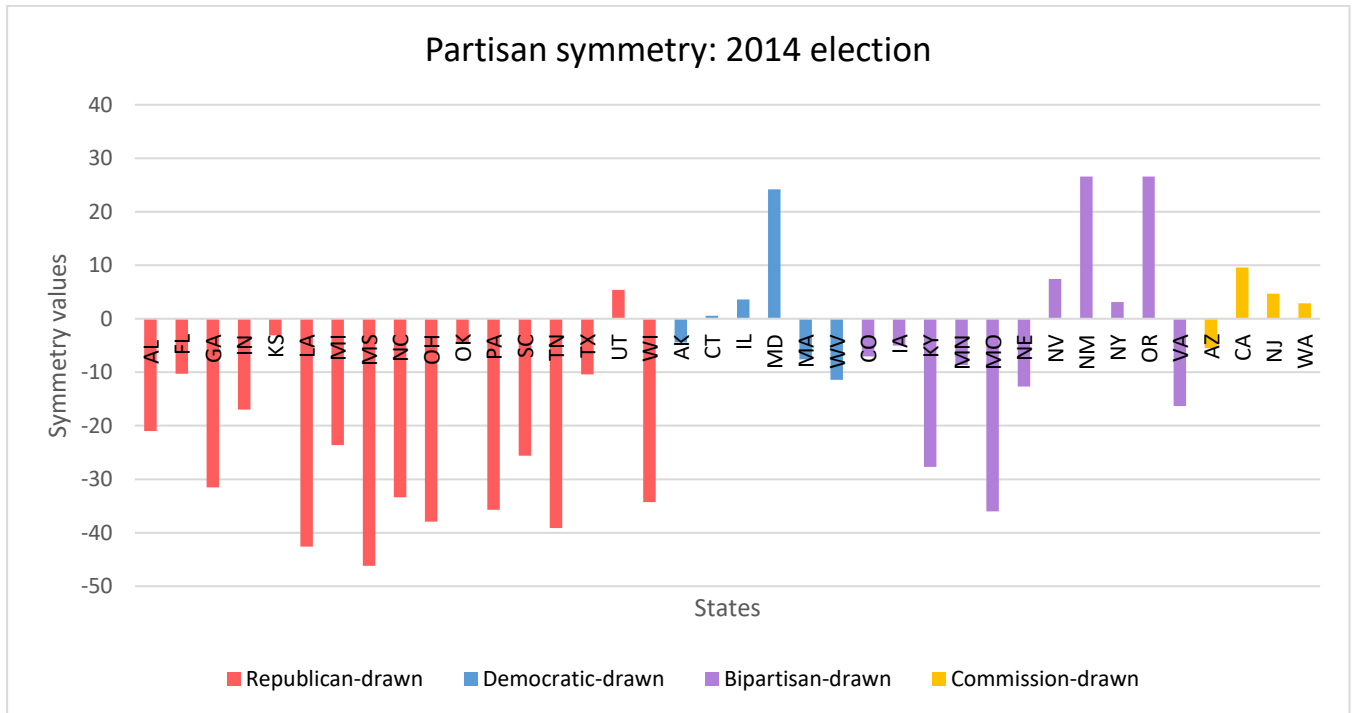
Figure 7.7: The partisan symmetry scores in the 2014 U.S. House election.

Two years later, only two Democratic-drawn states produced a Democratic bias; Maryland (MD) and Illinois (IL). Bipartisan-drawn New Hampshire (NH), Nevada (NV), Oregon (OR), and New York (NY) also had a bias in favor of Democrats. However, the large majority of states having a pro-Republican bias is continuing from 2012. Democratic-drawn Massachusetts (MA) and West Virginia (WV) does also have maps that favor Republicans. Also, the Democratic bias observed in Mississippi and Missouri shifted to favor Republicans Nearly every state that was drawn by Republican legislatures, except Utah (UT), had moderate to high asymmetry scores. In many states, the asymmetry is increasing. This is contradictory to what could be observed in the efficiency gap analysis from 2012 to 2014 in figures 7.2-7.4. Moreover, the extreme values California (CA) showed in figure 7.3., is not confirmed when measured in partisan symmetry.
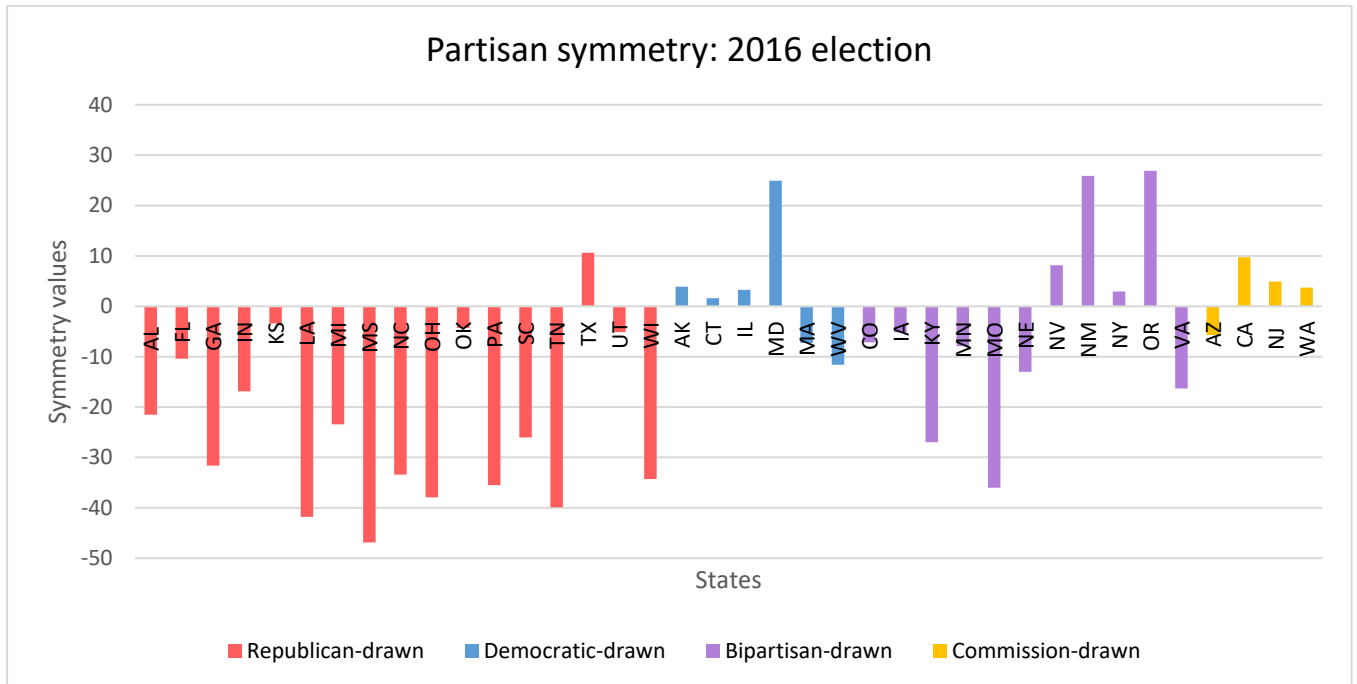
Figure 7.8: The partisan symmetry scores in the 2016 U.S. House election.

One observation in 2016 is that the tendency of a limited number of states producing a Democratic bias is relatively consistent. Democratic bias can be found in Maryland (MD), Oregon (OR) and New Mexico (NM). The bias ranges from 26, 9 to 16 and is also found to a lesser degree in the states of California (CA), New York (NY), Illinois (IL), Connecticut (CT) and Nevada (NV). The bias ranges from 11, 6 to 1, 6. However, Republican-drawn Texas also has a pro-democratic bias. It can be argued that Texas has a relatively unbiased map, with only a few swings in the election cycles. Additionally, the level of Republican bias is varying in the states of Alabama and Louisiana. From 2012-2016 the bias is increasing in Pennsylvania. Moreover, when comparing the results from 2014 and 2016, the charts look quite similar.

Preliminary conclusions

Summarized, the partisan symmetry in the period from 2012-2016 confirms the trend that could be observed in figure 7.1 that in a majority of the states, there is a bias favoring the Republican Party. Moreover, the states with legislative districting produce the most biased maps. However, since there are only four states with commissions included in the analysis, it is difficult to compare them. As suggested by the efficiency gap analysis, the commission-based states seem to have relatively unbiased maps. There are also some states with a varying

partisan bias in the elections. States with both Democratic and Republican bias between 2012 and 2016 are; Texas (TX), Arizona (AZ), Oklahoma (OK), Mississippi (MS), Kansas (KS), Arkansas (AK), Utah (UT), Missouri (MO), Washington (WA) and New Jersey (NJ).

7.3   Comparing the partisan symmetry standard to the efficiency gap
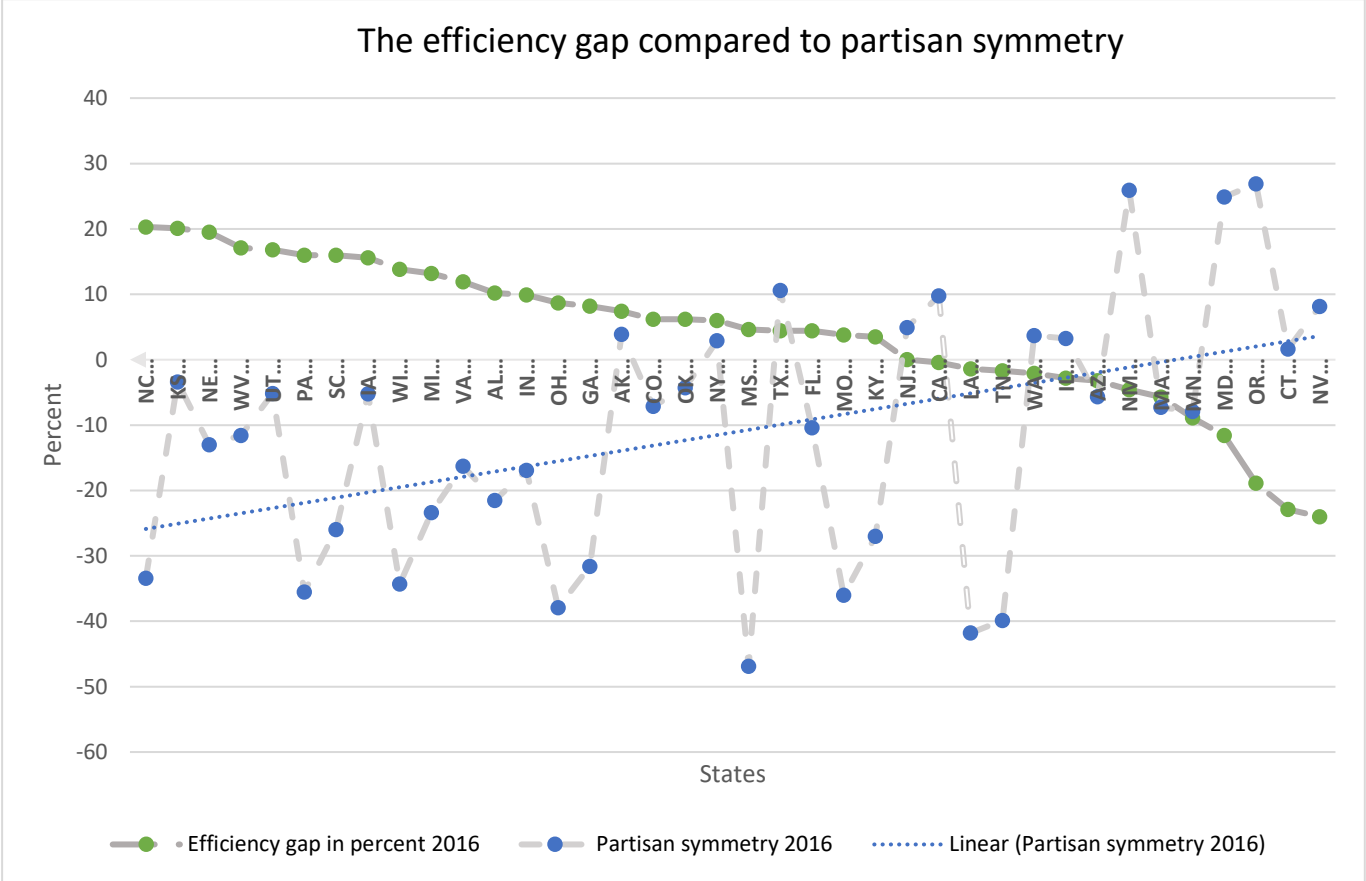
Figure 7.9: The efficiency gap in percent in 2016 compared to the partisan symmetry in 2016.

This figure aims to compare the efficiency gap in percent and the partisan symmetry to illustrate how the metrics relate to each other. The states are ranked by states with the *highest positive* efficiency gap in percent, which indicates Republican bias, to states with the *lowest negative* efficiency gap values, indicating Democratic bias. *Positive* partisan symmetry values indicate Democratic bias; *negative* values indicate Republican bias.

Two tendencies can be seen in this figure; first, there is quite a large difference between the metrics in some states. Both Kansas (KS) and Nevada (NV) have a bias when measured in efficiency gap in percent, but almost no bias when measured in partisan symmetry. On the

contrary, Louisiana (LA) and Tennessee (TN) does not have an efficiency gap bias, but they have a substantial partisan symmetry bias. Some states, therefore, have a bias when measured with the efficiency gap while not showing bias when measured with partisan symmetry and vice versa. Conversely, there are also states such as Pennsylvania (PA), North Carolina (NC), Wisconsin (WI), South Carolina (SC) and Michigan (MI) that have a Republican-bias on both metrics. Second, the figure and the overall empirical evidence presented in this chapter show a substantial pro-Republican bias, but there are also a few cases of Democratic bias.

7.4   Polsby-Popper Index
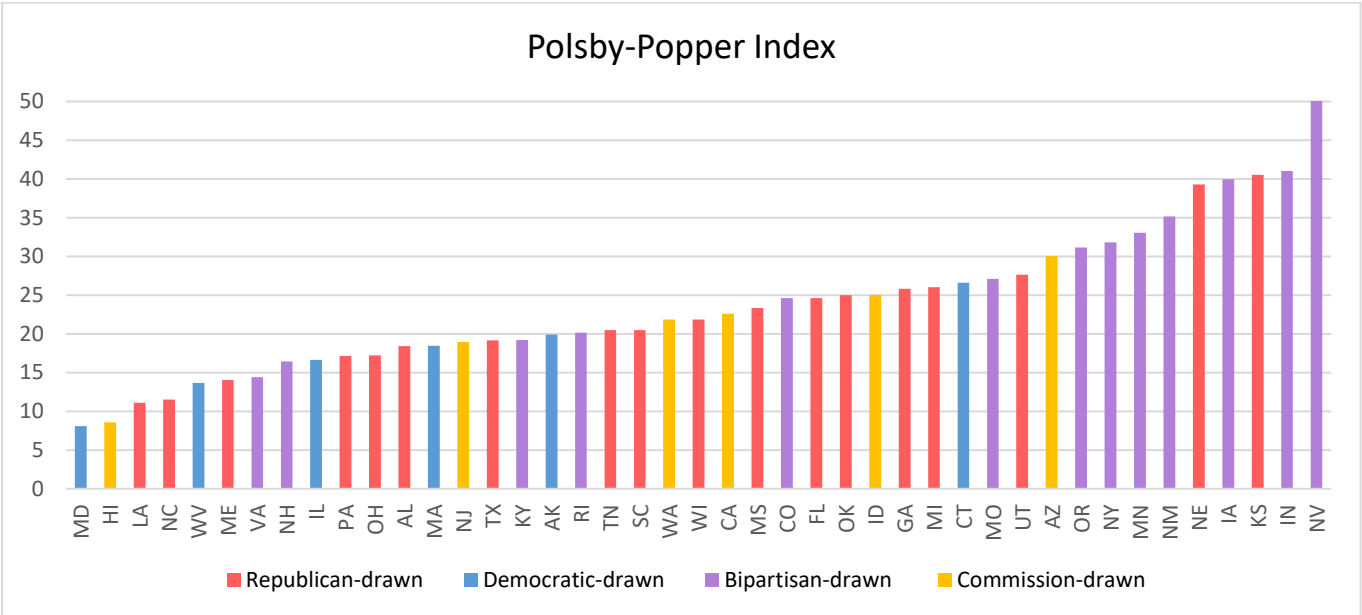
Figure 7.11: The compactness of each state, ranked by least to the most compact district. The y-axis shows the Polsby-Popper value; the x-axis shows each state.

This Polsby-Popper Index is applied to show the average district compactness of each state with more than one congressional district after redistricting in 2011. The values have been multiplied by 100 (Governing, n. d.). As described in chapter 3.2.2., compactness is one of the most commonly applied state-based redistricting criteria. The values have been calculated by the geospatial software firm Azavea. Low scores indicate low district compactness (Governing, n. d.).

Further, the figure shows that bipartisan-drawn states have the most compact districts. Some of the least compact states were drawn by Republican-dominated legislatures. Louisiana, North Carolina, Pennsylvania and Ohio have some of the least favorable scores. According to

Azavea, the least compact congressional districts in the U.S. are found in the Republican-dominated states of North Carolina, Florida, Ohio, Texas, and Louisiana. Also, oddly-shaped districts can be found in Democratic-dominated Maryland and bipartisan-drawn New York. Hawaii has a low compactness score because of its natural geography.

The results from the statistical analysis combined with the prescribed thresholds described in chapter 5.2.1., on the selection of cases, can be summarized in this table. States with fewer than six congressional districts have been excluded. The aim of this division of states is to broaden the understanding of why certain congressional maps creates more bias than others by comparing a few states with the same redistricting procedure and same political dominance.

Table 7.12: Categorization of the state's bias measured in efficiency seat gap and partisan symmetry.

	Democratic-drawn	**Republican-drawn**	**Bipartisan-drawn**	**Commission-drawn**
High bias		PA, NC, OH		
Low bias	MD, IL, MA	MI, TX, LA, SC, GA, TN, WI, AL, FL	VA, NY, KY, MO, CO, IN, MN	CA, AZ, NJ, WA

7.5   Closing remarks

Several variables can explain one election outcome. Among them are incumbency advantage, political issues, third-party candidates, public opinion, and open seat election, attitudes towards Congress and the President. It can, therefore, be challenging to give one explanation of why one party has an advantage in an election. However, when looking at the three elections together with a substantial amount of data points, there is sufficiently enough information to try to say something more general about the tendencies that are common for all three elections.

The analysis had uncovered that a majority of the states with high bias in the 2012, 2014 and 2016 elections had a legislative redistricting procedure and Republican political dominance when the congressional district lines were drawn in 2011. This finding confirms the research

done by McGann et al. (2016), Chen and Cottrell (2013), Coma and Lago (2018), Beveridge et al. (United States Supreme Court, 2017a) and Goedert (2015). The metrics do differ somewhat on the degree of bias and which states produce Republican and Democratic bias. However, the tendency is evident that only a few states had congressional maps that favored Democratic candidates between 2012 and 2016. In addition, states with redistricting commissions had a consistently low bias when measured with all three metrics. The analysis did not provide any indication if the bias was caused by geography or not.

Two Republican states had an efficiency gap of two or more seats and a partisan symmetry score of 30 or more in all three elections. Ohio had a partisan symmetry score of 30 of more and an efficiency seat gap of two or more seats in 2012. The next chapter will contain a discussion on which variables referenced in the political science literature can contribute to explain why these three states have more bias in the elections than other states drawn by Republican lawmakers.

8 Republican bias in Republican-drawn states

The previous chapter showed that the electoral maps drawn after the decennial redistricting process in 2011 create a bias in favor of the Republican Party in the elections in 2012-2016. However, the literature, as shown in chapter 2.2 and 2.3, does differ to some degree on the reason for this bias. Moreover, there is a consensus that there are distinct population patterns among voters which can contribute to a geographical bias in elections. In addition, the extensive gerrymandering in some Republican-dominated states can also account for part of the bias. Geographical self-sorting among voters makes it easy to manipulate and draw district lines around groups of partisan voters. However, while there has been proven that nearly all the Republican-drawn congressional maps in 2011 produce a pro-Republican bias in the following elections, not all the states have the same degree of bias. Some states have more biased maps than others.

By applying the terminology of Mahoney and Goertz (2004), the population of states in this chapter can be divided into positive and negative cases following the Possibility Principle. *Positive* cases are states with high bias, and *negative* cases are Republican-drawn states with low to medium bias. The states which will be compared in this section are the positive cases, such as Ohio, North Carolina, and Pennsylvania, against the negative cases of Alabama, Louisiana, Georgia, Tennessee, Michigan, Florida, Texas, Wisconsin and South Carolina. The negative cases have relatively low scores on partisan bias metrics. Additionally, both the positive and negative cases of states have the same political independent variables. More specifically, they share the same redistricting procedure, Republican-dominance, and are states with more than six congressional districts. There is a reason to believe that there are other variables than institutional factors which can contribute to explaining the difference.

The aim of this chapter, is, therefore, to discuss the last part of the research question;

> *if we concentrate on redistricting processes in states dominated by Republicans in 2011, why do only some of them have consistently biased election results in the period of 2012-2016 in favor of Republicans?*

To clarify, biased election results refer to bias measured by the metrics of the efficiency gap and partisan symmetry, (referred to as 'bias') as shown in chapter 7.

This chapter will have a broad comparative discussion on a few variables that are referenced in the literature with a focus on gerrymandering and geographical factors. Further, there are three metrics on the bias that is being compared. Two of them are metrics referring to the symmetry of votes translating into seats in elections; the efficiency gap and partisan symmetry. Third, the gerrymandering metric based on how compact congressional districts are, the Polsby-Popper test.

8.1   Motives and opportunities to gerrymander

As mentioned previously, McGann et al. (2016) and Coma and Lago (2018) suggests two reasons for when states decide to gerrymander. First, if states have an *opportunity*, meaning political control of the legislative and the executive branch in each state and second, a *motive* to gerrymander. With this in mind, it is peculiar why only a few Republican-dominated states had a consistently high bias in two or more congressional elections in the period from 2012 to 2016, while others did not. When looking at the varying degree of bias, at first glance, it may seem as not all the Republican-drawn states chose to gerrymander their districts in 2011.

8.1.1 Why increasing polarization can contribute to gerrymandering and high bias

In a two-party system, the parties are large coalitions which have to unite different factions within the party with different political leanings. Simultaneously, the literature has shown that two-party systems are more prone to gerrymandering in general. Therefore, one assumption is that dependent on which faction is dominating the party in the state, can have an impact on the inclination to gerrymander. To gauge how partisan the Republican Party is in each state, ideally, it should be applied data on the partisanship of state politicians. However, this has been difficult to attain.

Nevertheless, FiveThirtyEight (2018) has created a Trump Score Index "*to track Congress in the Age of Trump".* This index shows to what extent each member of the U.S. House of Representatives votes in line with the President. Consequently, this can serve as an indicator of how conservative or liberal a representative of a state is. The index shows that deeply red

Alabama's six Republican representatives vote with the President between 85 and 98 percent of the time. This indicates that the representatives are traditional conservatives and can be viewed as quite partisan. Comparatively, the more partisan divided Pennsylvania's Republican representatives also vote with the President between 84 and 98 percent of the time (FiveThirtyEight, 2018). Therefore, there is limited substance that can be derived by using these data and there is a need for large-N datasets over a two-year period to track voting records in the U.S. House. Several reports have documented the increasing polarization in Congress (see Carson et al., 2007, p. 878; Mann, 2016). Additionally, the American electorate is becoming increasingly more partisan too. Consequently, as shown by Beveridge et al. (United States Supreme Court, 2017a) the increasing polarization among the electorate has created groups of reliable votes that are easy to draw lines around based on how it is expected that they vote. Pew Research Center reports from 2014, 2016 and 2017 showed that the political attitudes towards the opposing party in Congress were highly unfavorable among Democrats and Republicans. Additionally, partisan divide on political values such as the role of government, immigration and environmental protection among Republicans and Democrats are at an all-time high. Considering this, it is not unreasonable to suggest that the extreme gerrymanders that were documented in 2011 and which some scholars fear will be repeated in 2021 are also a result of polarization among politicians. Summarized, there might be states with a higher level of partisanship among its Republican politicians at the state level that can contribute to influence the inclination of gerrymandering, and thereby influence the partisan bias in the state. However, this is difficult to estimate without the appropriate data sets.

8.2   The disappearing bias

In 2015, Goedert found that the U.S. House election in 2012 had a clear bias in favor of the Republican Party. In this election, Republicans lost the popular vote nationwide by one percent but got a 33-seat majority in the U.S. House of Representatives. Moreover, in 2014, the Republicans won the popular vote by five percent, but this only gave them 13 extra seats in the U.S. House of Representatives (Goedert, 2015, p. 1; The Brooking Institution, 2017). What was surprising, was the vanishing of the Republican bias. Goedert described this as a *disappearing bias.* Goedert's explanation for the disappearing bias was that the congressional maps were gerrymandered to maximize the seat share in favor of Republicans when the nation was evenly partisan divided, as observed in 2012 (Goedert, 2015, p. 1). It could be an

indication that the Republican Party had maxed out the reward from gerrymandering already in the first election after the census and by that, there were no new seats to win (Goedert, 2015, p. 1). All the other elections were won by Republican incumbents. This incumbency factor could reduce the overall bias, even though the districts themselves still had a bias favoring the Republicans (Goedert, 2015, p. 3). Additionally, some literature has suggested that incumbency reduce the effect of gerrymandering and that this influenced the bias in 2012 (Sides and McGhee, 2013).

8.2.1 The efficiency gap and partisan symmetry data compared to Goedert's theory

By comparing the efficiency seat gaps data in the period from 2012-2016 to Goedert's theory, the same overall tendencies can be witnessed. The election in 2012 had the most apparent Republican bias, except Texas and Georgia. Nearly all the twelve states had the highest efficiency seat gaps in the first election after redistricting. While there are some varieties, the main tendency is that 2012 was the most biased election and that this skew was reduced in the elections of 2014 and 2016.

However, when looking at the symmetry data, Goederts' findings are to a lesser extent confirmed than with the efficiency gap. Many states have the highest partisan symmetry values in 2012, before dropping in the elections of 2014 and 2016. Specifically, these states were Alabama, Florida, North Carolina, Pennsylvania, South Carolina and Texas. Moreover, there are also significant state-by-state varieties when measured in partisan symmetry. Some states have reduced bias, thus confirming the disappearing bias theory of Goedert. However, there are also states where bias is increasing in 2014 and 2016, like in Ohio, Tennessee, Wisconsin, Michigan, Louisiana, and Georgia.

The efficiency gap and partisan symmetry is challenging to apply in non-competitive elections

Furthermore, Alabama has the highest partisan symmetry score of all the states in 2012, with -41 symmetry, indicating highly asymmetrical districting plans in favor of Republicans. However, this score was cut in half in the next elections. The efficiency seat gap constitutes one extra seat for Alabama in 2012, but not in the other elections. One explanation for the difference in the bias can be that Alabama is a small state and that the metrics are better suited

to measure bias in larger states. However, the literature does not address this issue besides separating small and large states regarding the efficiency seat gap thresholds[17]. Conversely, Georgia, Louisiana, and Tennessee are states with the consistently lowest efficiency seat gap scores. These are also regarded as solid Republican states. Furthermore, in the U.S. House election in 2012-2016, Republicans won five out of six congressional districts in Louisiana, six out of seven districts in Alabama and seven out of nine elections in Tennessee. The only difference was in Georgia, where the GOP won nine out of 14 districts in 2012, and ten districts in 2014 and 2016 elections, thus flipping a seat in 2014. Moreover, when looking at these states partisan symmetry values, they have consistently some of the most extreme values ranging from -27 to -43 in three election cycles. The literature has indicated that both metrics have difficulties measuring bias in noncompetitive states, which these deep red states can be described as. Partisan symmetry is difficult to calculate in elections that are strongly partisan states (Stephanopoulos and McGhee, 2015, p. 860) and Royden and Li (2017, p. 18) has also voiced the same critique against the efficiency gap. They argued that in close elections, like in Pennsylvania, the efficiency gap can be quite accurate. However, in elections with one dominating party, like in Alabama, it is less precise.

Overall, it can be claimed that Goedert is partially right regarding the disappearing Republican bias in the period from 2012 to 2014. A majority of states showed the highest scores in 2012, meaning that the skew was largest after the first election after redistricting. However, the inconsistency between the metrics when comparing them state-by-state can contribute to giving this conclusion less credibility, contrary to if both metrics showed the same trends at each data point, as shown in Alabama. On the other hand, we do see in some states a spike in bias from 2012 to 2014 and 2016, proving that Goedert's disappearing bias is not a trend that can be witnessed in all the states.

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[17]. Smaller states should be measured by seat gap, whereas larger states should be measured in percent, according to Stephanopoulos and McGhee.

Other political factors to explain the disappearing bias

Besides the factors suggested by Goedert, there are also other variables which can contribute to explain the reduction in bias. More specifically, this could be the natural dynamics of elections, and that the effect of gerrymandering is the strongest in the first election after redistricting because of the information the districts are based on.

Elections have a dynamic character, and there are always several factors contributing to an outcome. In a congressional election, the candidate, public opinion, the approval of the President, political issues, and campaigns, to name a few can influence the result. Furthermore, it is natural to assume that states with districts that have been packed and cracked for political gain are more vulnerable to this dynamism than other states because their district lines are more artificial. Consequently, after losing an election, a party may run with a different candidate and try out other methods to be more competitive in the next election. This, in turn, can contribute to reducing the bias.

Additionally, the process of gerrymandering is based on sophisticated voter information and computer technology. However, it can be assumed that the data the gerrymandering is based on is the most accurate in the first election after redistricting. Therefore, this can also be an explanation for why most states showed the highest bias in 2012. In the elections four, six and eight years after redistricting there are districts based on outdated information about voters and their preferences. Consequently, it can be assumed that this also contributed to the decline in bias. Therefore, because of the dynamic character of elections, it is natural that there are some swings in bias over time.

By accounting for the disappearing bias, it is natural to move on to the geographical factors which has been documented in the literature to see if the bias can explain why some Republican-drawn states produce more bias than others.

8.3 Geographical bias

The two phenomena of *gerrymandering* and *self-sorting of voters* are closely related and work in tandem. As described in chapter 2.2, for the last decades, Americans have to a certain extent segregated themselves based on social and political beliefs.

8.3.1 Compactness

The Polsby-Popper Index displays the compactness of each state. Some states have low compactness, an indication of gerrymandering, and also high bias. In these states, there is a reason to believe that gerrymandering has occurred and that is the reason for the bias. North Carolina, Pennsylvania, and Ohio have some of the least compact districts and high votes-to-seats related bias. However, North Carolina is an exception. The Tar Heel State has a long history of racial gerrymandering and majority-minority districts. Therefore, this can contribute to explaining why the state needs to gerrymander while the state's population is relatively rural. On the contrary, As Druke (2017a; Soffen, 2016) has argued, majority-minority districts may look like gerrymanders but can be districts made to comply with the Voting Rights Act. These districts are some of the least compact in the country, as discussed in chapter 2.2.1, and cannot solely be attributed as a partisan gerrymander.
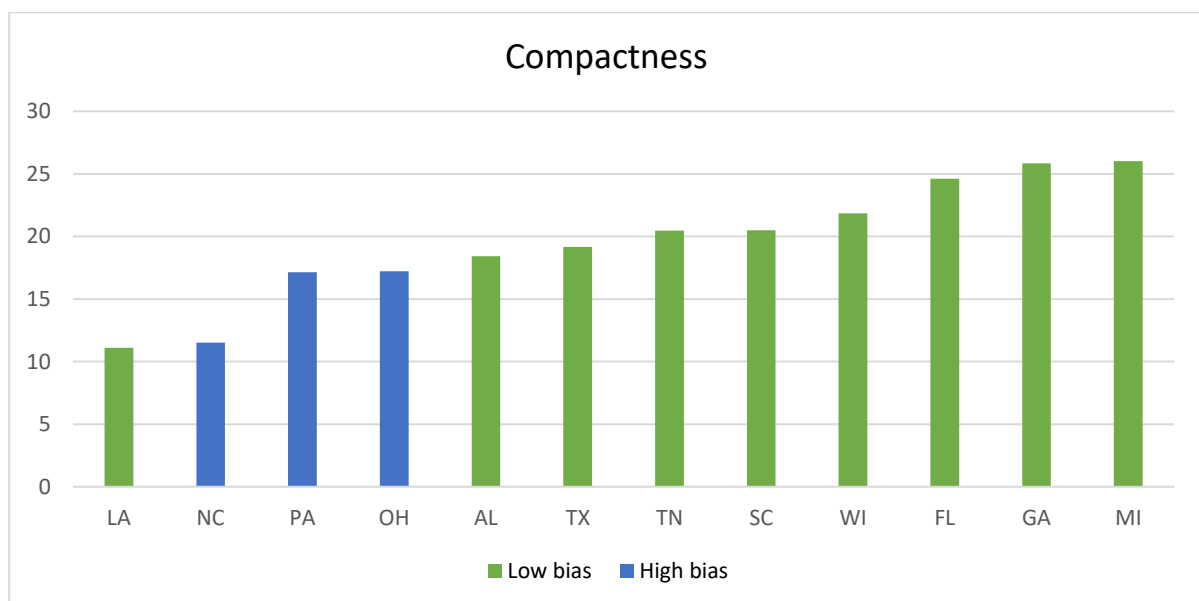

Figure 8.1: The states ranked by least to most compact districts. The y-axis shows the compactness value; the x-axis shows the states.

However, there are also states where the metrics differ. Louisiana and Alabama both have low compactness and low bias. This could be explained by the few congressional districts and majority-minority districts in the states. Additionally, states with low compactness where there is no other indication of gerrymandering can have less compact maps because of natural geography.

Furthermore, there are some inconsistencies between the metrics. Michigan has high compactness but also quite high bias. On the other hand, Florida has compact districts and low bias measured with the votes-to-seats metrics. Additionally, most of the states with low scores on the efficiency gap and partisan symmetry measures have compact districts. Indicating that there has not been gerrymandering, or not to such an extensive degree as in the positive cases of states. Consequently, there needs to be some skepticism of inferences drawn because from Polsby-Popper Test. As has been shown, the test can create a bias that is artificial. However, in this discussion, it is considered as a metric that can be used as a supplement to the efficiency gap and partisan symmetry metrics.

8.3.2 The degree of urbanization in each state

Taking into account the urban-rural theory of Chen and Rodden (2013), it can be argued that Republican-drawn states with rural populations do not need to gerrymander. This is because of the natural gerrymandering that is occurring through self-sorting of voters and thereby creating a bias in favor of the Republicans. On the contrary, states with large urban populations can be seen as more Democratic-leaning. Therefore, the clustering of voters near larger cities can be advantageous to Republicans, but it can also necessitate gerrymandering to crack Democratic areas to disperse their support over several districts and making them the minority population in other districts. Moreover, to apply the theory of Chen and Rodden, the urbanization of each state can be analyzed to understand unintentional gerrymandering.

The U.S. Census Bureau has provided the data showing the degree of urbanization in each state. The Bureau defines an urban area as:

> *"To qualify as an urban area, the territory identified according to criteria must encompass at least 2,500 people, at least 1,500 of which reside outside institutional group quarters. The Census Bureau identifies two types of urban areas: Urbanized Areas (UAs) of 50,000 or more people; Urban Clusters (UCs) of at least 2,500 and*

(United States Census Bureau, n. d, a).
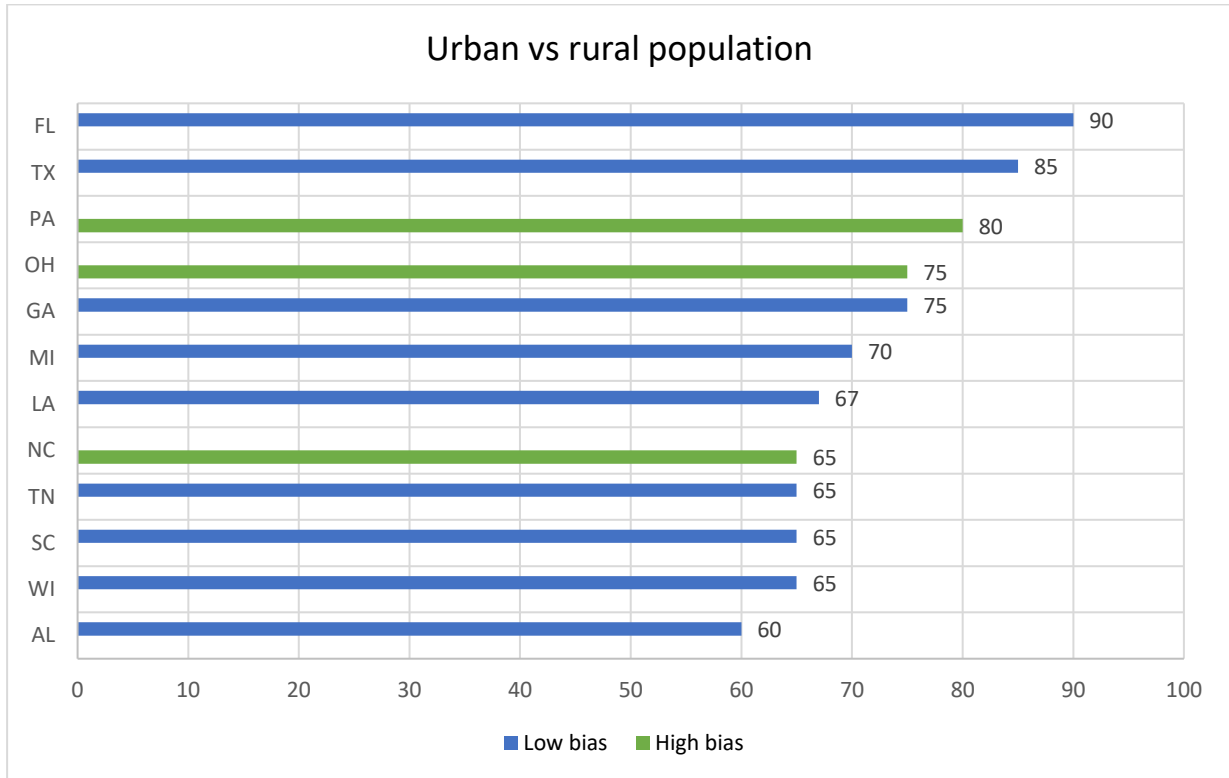
Figure 8.2: The states ranked by most urban to the least urban population. The y-axis shows the states; the x-axis shows the degree of urbanization in percent.

Figure 8.2. Shows that all the states have at least 60 percent of their population living in urban areas. The most rural states are Alabama, Wisconsin, South Carolina, Tennessee, North Carolina and Louisiana. According to the U.S. Census Bureau, all of these states have less than 70 percent of their population living in urban areas (U.S. Census Bureau, n. d.). Alabama, South Carolina, Louisiana, and Tennessee are regarded as safe Republican states. Wisconsin and North Carolina are regarded as swing states in national elections. Florida has low bias and high compactness, and so does Texas. Ohio has a high bias, medium compactness and high urbanization of their electorate. Potentially this could provide an additional explanation for the disappearing bias observed by Goedert (2015).

8.4 Pennsylvania and Alabama: Comparing two elections in 2016

Unfortunately, there is also only so much that can be explained regarding bias when looking at the total degree of urbanization statewide. Therefore, it is more clarifying to look at within-state variations of the electorate by comparing how the state voted in the U.S. House election and U.S. Presidential elections in 2016. The presidential election can serve as an indicator for how partisan divided the state is in national elections. Both elections were held on November 8, 2016, but in different voting districts. The presidential elections are shown by county-level whereas the congressional districts are usually larger than counties.

To discuss why certain states create more bias than others, it can be fruitful to illustrate it with two cases. The purpose of this chapter is to see if voting and population patterns are coinciding with the theory of Chen and Rodden in a way that geographical patterns can serve as an explanation for the differing bias. The comparative discussion will involve Pennsylvania and Alabama. Pennsylvania has shown high bias on all metrics, and the congressional map was ordered by the Pennsylvania Supreme Court in February 2018 to be redrawn before the 2018 midterm elections because of illegal partisan gerrymandering (Wines and Gabriel, 2018; Ballotpedia, n. d, i). Furthermore, a sizeable state as Pennsylvania is interesting to compare to the smaller state of Alabama which is labeled as a state with low bias. Moreover, Pennsylvania is a swing state whereas Alabama is regarded as a safe Republican state. Additionally, Pennsylvania has a highly urban population, and Alabama is a rural state. Both states have a disappearing bias from 2012 to 2014.

8.4.1 Pennsylvania

U.S. House of Representatives election in 2016
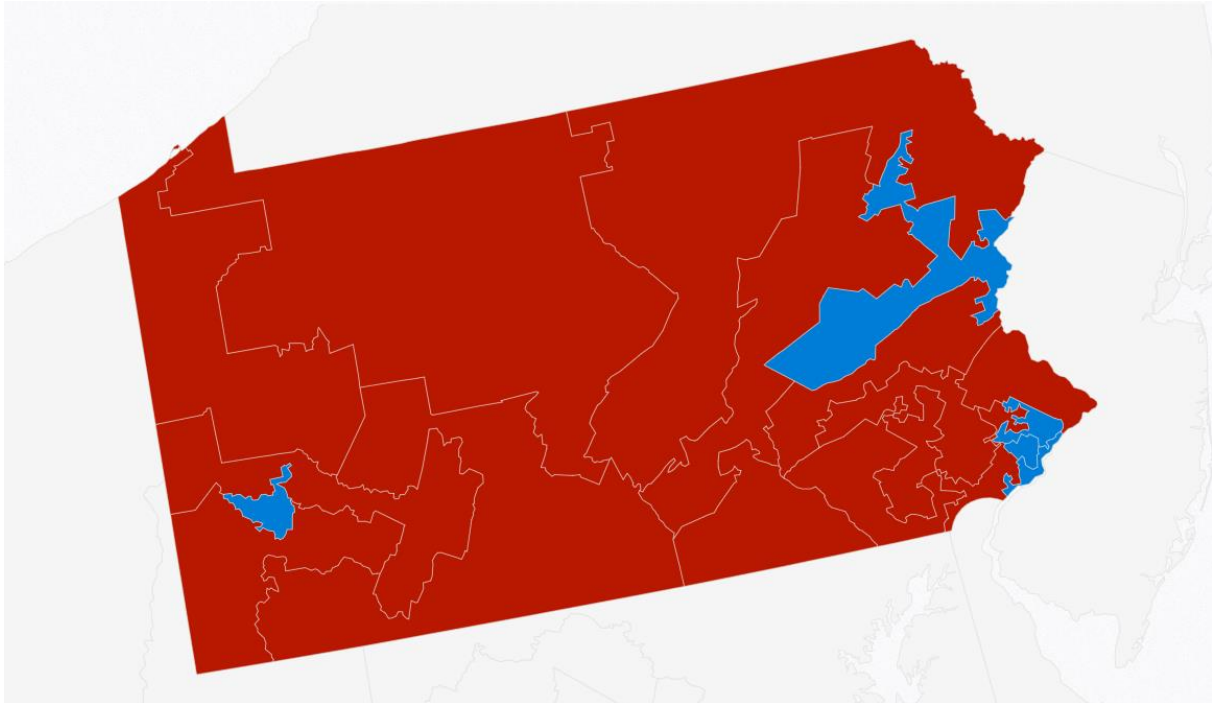
Figure 8.3: The 2016 U.S. House election results in Pennsylvania. Blue districts are Democratic victories; red districts were won by Republican candidates (Politico, 2016a).

The electoral map of the U.S. House election in Pennsylvania shows the urban-rural within-state variations. The Democratic-won districts are close to two of the largest cities in Pennsylvania; Pittsburgh in the west and Philadelphia in the southeast. The 17th district encompasses among other Schuylkill County in the northeast. Overall, Republicans won 13 out of 18 districts in the U.S. House election.

Moreover, while studying the adjacent districts to those won by a Democratic candidate, it is evident the districts are safe Republican districts. In the east, the 15th, 7th and 8th were won by Republican candidates by a large margin. Additionally, near Pittsburgh in the west, the 12th district was won by 62 percent against the Democratic candidates 38 percent, and the 18th district was uncontested.

U.S. Presidential election in 2016
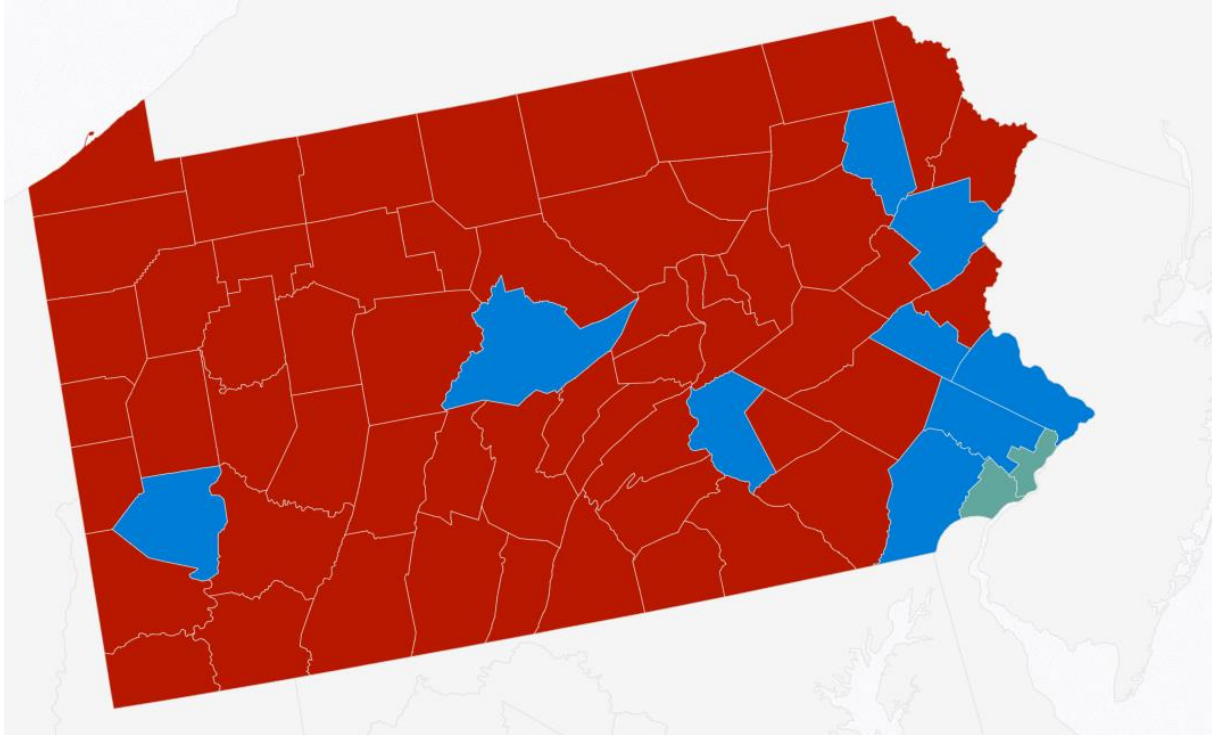
Figure 8.4: The 2016 U.S. Presidential election results in Pennsylvania. Blue areas were won by Hillary Clinton; red areas were won by Donald J. Trump (Politico, 2016b).

Moreover, when comparing the congressional vote to the presidential vote, it is evident that Democratic voters are centered in the urban areas of the state in both maps, as suggested by Chen and Rodden. Additionally, there are also rural areas won by Hillary Clinton but lost by Democratic candidates to Congress. Furthermore, in the presidential election, there were are more areas that voted for the Democrats near Pittsburgh and Philadelphia, compared to the U.S. House election. Data on the American electorate shows that the Republican Party's base consist of predominantly white, older men. In contrast, the Democratic Party voters are often women, minorities, more educated and younger (Bump, 2017). According to the U.S. Census Bureau, the white, non-Hispanic or Latino population in Pennsylvania is 77 percent. Additionally, 17 percent of the population is 65 years or older, and 29 percent has a bachelor's degree or more (United States Census Bureau, n .d, b). The demographic of voters can therefore also serve as an explanation to why it is advantageous for the Republicans to gerrymander.

The congressional lines are clearly less compact than the district lines for the presidential election, as shown by the Polsby-Popper Index. Further, Democratic support in the

presidential election suggests that the Democratic candidates for Congress have a larger potential in the Pennsylvania electorate than is being translated into seats. Additionally, by comparing the two maps, it seems that the most populous, urban areas consisting Democratic voters are the most gerrymandered districts.

Are swing states more prone to gerrymandering?

As mentioned, there has been proven to be extensive gerrymandering of the congressional map in Pennsylvania. One explanation can be that the population as a whole is divided. In the presidential election in 2016, Donald J. Trump received 48 percent of the popular vote, while Hillary Clinton got 47 percent (The New York Times, 2017a). When only one percentage point is separating the presidential candidates in the state, it is peculiar that Democrats only won five U.S. House elections in 2016. Moreover, Pennsylvania is together with North Carolina and Ohio states with high bias that also are swing states in presidential elections (Mahtesian, 2016) which could suggest that gerrymandering is more common in swing states.

A natural inference is therefore that since the states' electorate is so evenly divided it would create a *motive* for politicians to manipulate the districts to secure political dominance in future election cycle while also having the *opportunity* because they have control of the redistricting process. However, during the 2016 presidential election, in addition to Pennsylvania and Ohio, swing states with lower bias such as Michigan, Wisconsin, and Florida also flipped from being Democratic to Republican states (The New York Times, 2016b). The notion that evenly divided states necessitate more gerrymandering is, therefore, a less reasonable explanation, given that Michigan, Wisconsin, and Florida have less bias[18].

The reason for Pennsylvania's high level of bias is most likely caused by partisan gerrymandering. Based on this data it is challenging to conclude whether swing states are more prone than other states to gerrymandering, although it does seem likely. The maps show that the partisan vote is more spread than is assumed by the unintentional gerrymander theory. Therefore it is unlikely that geography can account for the bias. To support this theory, it would be interesting so supply it with data on the partisan leanings of state Republican politicians that drew the maps in 2011.

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[18] There are varieties in the degree of bias between each state and in different election years. Some years produced more bias than others (like in 2012).

8.4.2 Alabama

U.S. House of Representatives election in 2016
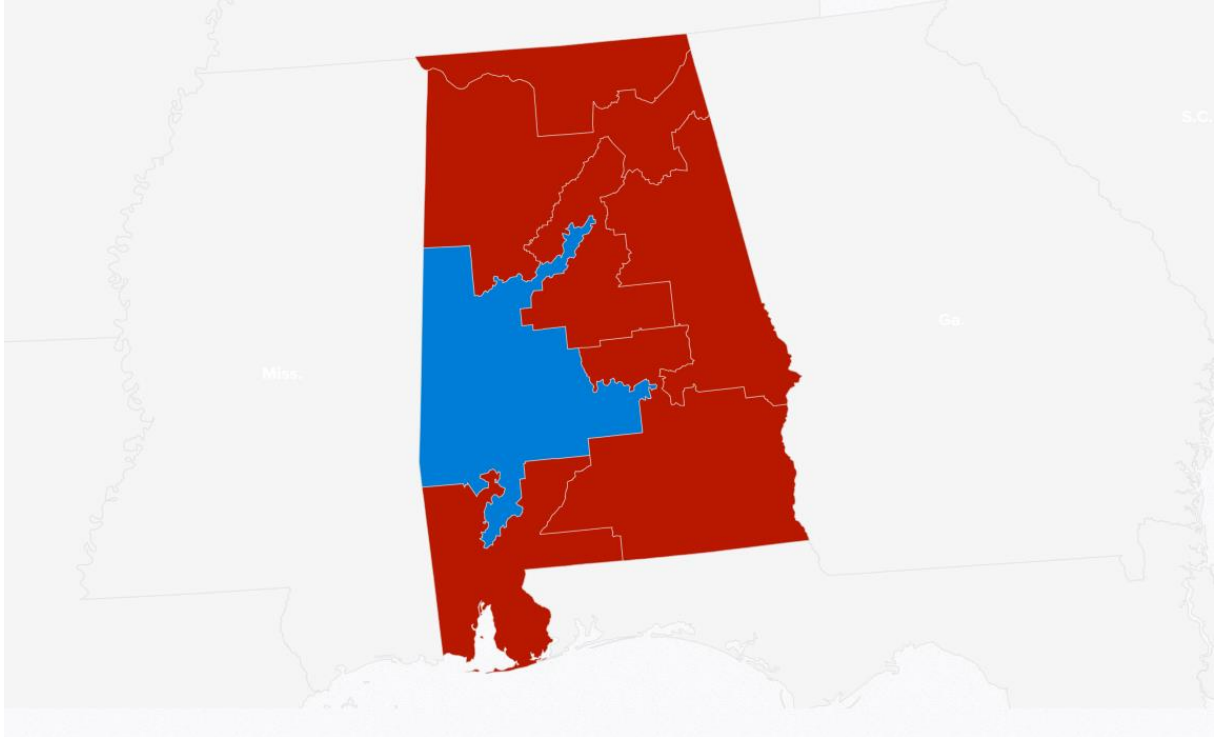
Figure 8.5: The 2016 U.S. House election results in Alabama. The blue area is the 7th district won by the Democratic Party; red districts were won by Republican candidates (Politico, 2016c).

Alabama is regarded as a deeply Republican state, as demonstrated by the congressional election results in 2016. Additionally, Donald J. Trump won the presidential vote in Alabama by 62 percent, compared to Hillary Clinton's 34 percent (The New York Times. 2017c). In fact, the only district won by a Democratic candidate in the U.S. House election was the 7th district. This district consists of approximately the entire African-American population in Alabama, which votes overwhelmingly for Democratic candidates (Ingraham, 2017). According to the U.S. Census Bureau, 26 percent of the population in Alabama is African-American and 66 percent non-Hispanic or Latino whites (United States Census Bureau, n. d. c).

U.S. Presidential election in 2016
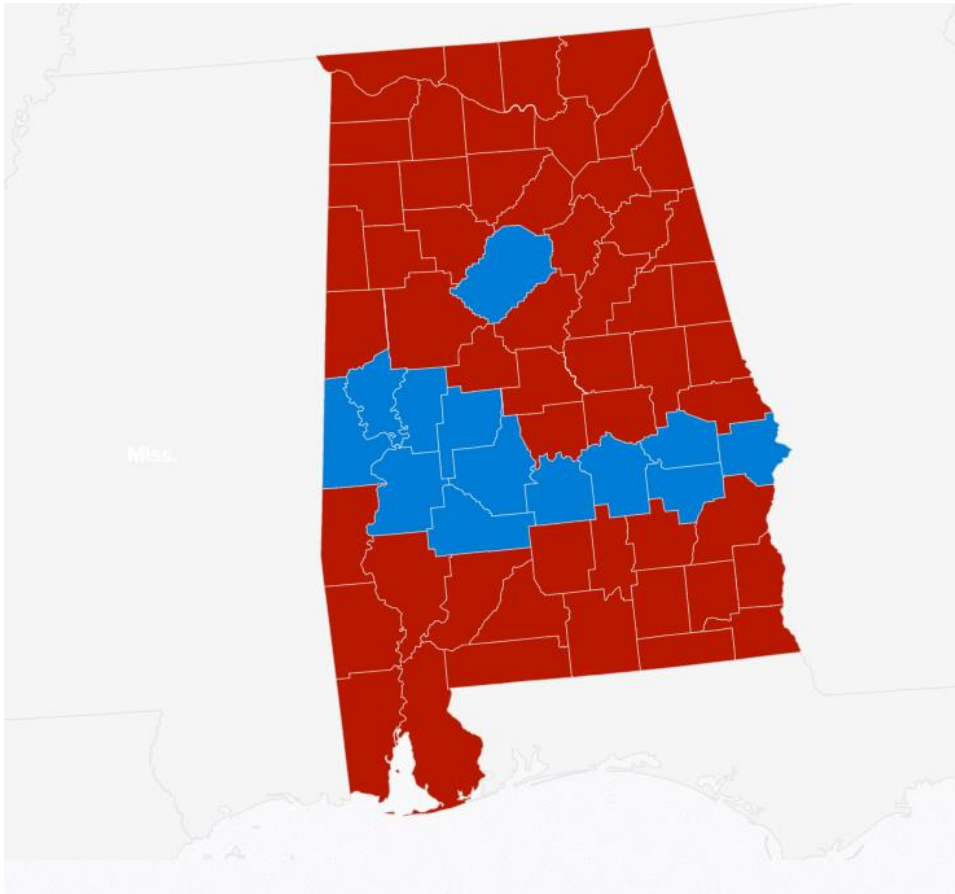
Figure 8.6: The 2016 U.S. Presidential election results in Alabama. Blue areas were won by Hillary Clinton; red areas were won by Donald J. Trump (Politico, 2016d).

In the presidential election vote, the Democratic vote was more dispersed than at the U.S. House election. Furthermore, this could indicate that the Democratic vote is, in reality, more spread and has been packed into one district in the U.S. House election. This can be either a racial gerrymander or the creation of a majority-minority district to comply with the Voting Rights Act. Stephanopoulos has argued that often the goal of creating majority-minority districts is not to diminish the representation of minorities in neighboring districts but rather by claiming to protect the minority vote, lawmakers can instead perform a gerrymander favoring Republicans. Therefore, the purpose is often to reduce the Democratic Party's support in the districts adjacent to the majority-minority districts (Soffen, 2016).

Assuming that the 7th district has been manipulated through the packing of voters, one could argue that the neighboring districts would have narrow Republican victories. It is likely that there are still some Democratic voters left in these districts, although they constitute a minority. Therefore, it is interesting to see the margins of victory in the other districts. Small

margins could indicate that the Democratic support in the neighboring districts is substantial, and due to the two-party system, this creates a narrow win for Republicans. However, the 1st and 4th districts were uncontested. Further, the 3rd, 5th, and 6th districts were won by Republican candidates by an overwhelming margin (Politico, 2016d). Only the 2nd district, bordering the 7th district in the southeast which was won by a Democratic candidate, was only somewhat competitive. The Republican candidate won the district by 54 percent, compared to the Democratic opponents 45 percent (Politico, 2016c). Instead, this shows that the Democratic support in the adjacent districts is reduced quite heavily, as indicated by Stephanopoulos.

Voting and population distribution

However, according to (Chen and Rodden, 2013, p. 242), the same relationship between population density and voting which has been outlined previously in other states cannot be transferred to Southern states like Alabama. This is because they are less industrialized and have a larger African-American population. According to Silver (2013), in the South, African-Americans are residing in urban and agricultural areas. He argues that in these areas, it is difficult to not create mostly partisan districts. In the presidential vote, one observation is a belt of Democratic voters stretches from Selma to Montgomery, the state capital. There is also Democratic support in Birmingham, which is the largest city in the state.

Moreover, the vast African-American population in Alabama can impact election results quite heavily, in elections with different district boundaries. An example of this was the U.S. Senate election in December 2017. Democratic candidate for the U.S. Senate seat, Doug Jones, lost nearly all the congressional districts in Alabama but won the Senate seat because of overwhelming support in the areas surrounding the 7th district (Ingraham, 2017). This result can contribute to explain why state politicians have chosen to pack the entire African-American population into one district since they tend to vote heavily Democratic. On the other hand, it could also be necessary to pack the district to make sure that the African-American population in the state could elect their preferred candidate and not be outnumbered in other districts because of the SMDP system. Therefore, it is challenging to conclude because of the clear Republican wins in the neighboring districting in the U.S. House election. The belt of Democratic voters in figure 8.6. Shows that the Democratic Party does have more support than what is shown in the U.S. House election. There is a reason to suggest that

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possibly the Democrats would have a chance at a second seat in Alabama with different district lines since the African-American population constitutes 26 percent of the population.

Alabama did have a bias in the election of 2012 when using data calculated by McGann, but the same level of bias did not appear when measuring the efficiency seat gap. The congressional map had one extra efficiency seat gap in 2012, which was reduced in 2014 and 2016. Further, the map had an asymmetry score of -41 in favor or Republicans in 2012 to -20 in 2014. The reduction of this bias can be because, as suggested by Goedert (2015), that Alabama Republicans had maxed out their potential in 2012. There were no new seats left to win in 2014. Moreover, it could also seem that the efficiency seat gap does not capture the gerrymandering that has occurred in Alabama because of the few congressional districts. This can also be a reason for why they have a low bias. Depending on the size of the state, a bias of two or more seats will impact the votes-to-seats distribution more in a small state than in a large state. One efficiency seat gap in 2012 is below the threshold prescribed by Stephanopoulos and McGhee. Conversely, the partisan symmetry measurement does seem to capture this bias to a greater extent, but both metrics show the same tendency.

8.5   Closing remarks

This chapter has only scraped the surface to understand why some Republican-dominated states have a bias in the three elections and why others have not. Since they all have the same redistricting processes, there have to be several variables that can explain. The discussions in this chapter have mainly been focused on the works of Chen and Rodden (2013) and Goedert (2015).

Further, there has been a discussion on the increasing polarization among politicians as a source of gerrymandering. Moreover, the disappearing bias suggested by Goedert is found in several states with the metrics of the efficiency gap and partisan symmetry, but not all states follow the trend indicated by Goedert. A majority of states have the largest bias in the 2012 election. Additionally, both the efficiency gap and partisan symmetry is proven challenging to apply in noncompetitive states. Goedert suggested that Republican seat maximizing in 2012 resulted in the reduction of bias, but there are also other factors like the natural dynamics of an election that can play a role.

There are also geographical factors that the literature has shown which can create a bias in favor of the Republicans. The urban-rural theory of Chen and Rodden is found to be correct in several states. The Polsby-Popper Test has been applied to measure the compactness of each state, and some states have a coinciding bias on all three metrics, while others do not.

In regards to swing states having more gerrymandering, it is difficult to give a decisive answer. While there are swing states in national elections that have been gerrymandered, such as Pennsylvania, there is also purple state without the same level of bias. That it not to say that gerrymandering has not occurred. There can likely have been gerrymandering of state legislative districts, which this thesis does not explore. A systematic longitudinal comparative analysis of swing states would provide more insight into this theory. Alabama has a large African-American population and only seven congressional districts. By comparing the vote in two elections, it is evident that there has been packing of voters. However, the efficiency gap and partisan symmetry do not seem to capture this bias, even though they show a tendency.

This has been an exploratory analysis where it is not possible to test a hypothesis. Therefore, the aim has been to discuss some possible explanations to see if they are reasonable to account for the differences between the states. To study this issue further, there is a need for more systematic research, preferably through statistical analysis.

Presumably, there is no single explanation for the lack of bias. Instead, there are several within-state variations in addition to limitations in the partisan bias metrics that can shed light on the differences. This comparative discussion has shown that for further analysis, it can be appropriate to look more closely at population patterns and how they develop over time. Also, how the increasing minority population influences the bias.

9 Conclusion

This chapter will have a presentation of the key empirical findings presented in the thesis. Further, these findings will be discussed compared to the previous research. Additionally, subjects for further study will be addressed. Last, there will be a discussion on how the findings can be seen in a broader societal context and the road ahead for partisan bias and redistricting. To conclude this thesis, it is, therefore, appropriate to repeat the research question:

Every decade the map of congressional districts in the United States are adjusted or re-drawn. What characterizes the different congressional redistricting processes? To what extent does the electoral map create partisan bias in congressional election results in the states with a decennial redistricting procedure? If we concentrate on redistricting processes in states dominated by Republicans in 2011, why do only some of them have consistently biased election results in the period of 2012-2016 in favor of Republicans?

9.1 Key empirical findings

This thesis has set out to understand the redistricting process in the United States and how the design of the congressional maps can create partisan bias in states for the elections to the U.S. House of Representatives. Additionally, to explain why some Republican-drawn states have more bias than other states. In broad terms, the key empirical findings has been that a majority of states has chosen a legislative-based redistricting procedure, where congressional districts are drawn by Republican politicians. In the last round of redistricting in 2011, Republicans drew the congressional lines in 17 states. In the U.S. House elections of 2012, 2014 and 2016, a majority of the partisan bias was found in these states. It is challenging to determine and explain why some Republican-drawn states have more bias than others and a few explanations have been discussed. This is an area with the possibilities for further studies. The next paragraphs will give a more nuanced and detailed description of the main findings.

In the redistricting process, the states have been given a substantial amount of autonomy with some federal and state-based requirements they need to adhere to. This thesis has shown that the 43 states with a decennial redistricting procedure have either a legislative-based or commission-based system. Further, 37 states have chosen to redistrict through the legislative

branch and six through a commission. 23 states had one-party control of redistricting in 2011, and in 17 states, there were drawn by Republicans.

To analyze to what extent the congressional maps create bias, partisan bias in 26 states with the metric of the efficiency gap, and 38 states with the metric of partisan symmetry in the U.S. House elections of 2012, 2014 and 2016 has been compared. Although the efficiency gap and partisan symmetry differ in regards to some states, they both display a clear tendency. This uncovered that legislative-based systems are more prone to having a higher bias in congressional elections than states with commissions. Additionally, states with Republican-drawn maps created the highest bias in all three elections. Bipartisan- drawn maps have a varying degree of bias. Only a few states had a Democratic bias, and states with commission-based redistricting had the lowest levels of bias. It is likely that congressional maps can create a bias either because of gerrymandering or because of natural sorting of voters. However, the partisan bias instruments do not account for the reason for the bias. Given the assumptions of motives and opportunities to gerrymander, it is surprising why some Republican-drawn states have more bias than others that also had Republican control of redistricting.

The reason for why some Republican-drawn states produce more bias than others is likely a result of a variety of factors. Some has arguably gerrymandered its congressional districts to a larger extent than others. Reasons for this may be that voters are residing in certain areas, the state is a swing state, or maybe the politicians are more inclined to gerrymander because they belong to a certain faction within the party. Other reasons can be that the natural geography creates a bias in favor of Republicans, although this has not been measured in this thesis. Moreover, both metrics are better suited to measure bias in competitive states, instead of in noncompetitive states with a dominating party, as demonstrated in Alabama. That can be an explanation for why some Republican swing states show more bias than other, deeply red states.

9.2   The findings in relation to previous studies

The literature has shown that two-party systems are more susceptible to gerrymandering than other electoral systems. The findings in chapter 7 indicate that when politicians themselves are drawing the districts there is occurrence of gerrymandering since they have a more significant degree of bias than commission-based systems.

Regarding the unintentional gerrymandering theory by Chen and Rodden (2013), it is possible to observe a distribution of voters on the rural-urban dimension. However, the presidential vote in Pennsylvania also showed that the Democratic vote was more rural and dispersed and not only concentrated in cities. In Alabama, the Democratic vote was centered on a "belt" across the state, near larger cities. Following previous literature, states with high bias on all three metrics in this thesis is more likely to have gerrymandered its congressional districts. Among these states are Pennsylvania, North Carolina, and Ohio.

The efficiency gap and partisan symmetry seem to be reliable measurements of partisan bias. The literature indicated that the metrics were better suited to measure bias in competitive, close elections and this has also been proven with the data on states that are regarded as swing states. However, these results are not conclusive given that some swing states doesn't have a consistently high bias in the period from 2012-2016. The disappearing bias discovered by Geodert (2015) was found in several states. However, there were states also without the same reduction in bias. This can be because of the metrics used in this thesis, but it can also be a variety of reasons for why the bias has been reduced which Goedert has not accounted for. However, regarding why there is a difference in bias in the Republican-drawn states has been challenging to give a decisive answer to in an exploratory analysis. This can be a subject for further analysis.

9.3   Suggestions for further studies

To draw broader conclusions in the study of partisan bias, there is a need for a more systematic, comparative analysis, preferably with a statistical approach. On the notion on why there is a difference in bias in Republican-drawn states, there are a few aspects which can be a subject for further studies because there has been limited research on this previously.

It would be interesting to get a broader understanding of how partisan both the Republicans and Democratic lawmakers are in each state and which faction is dominating within the party. Further, this can show if there is a correlation between which faction is dominating within the party, and if this increases the possibilities of gerrymandering. This would involve a longitudinal, comparative, systematic analysis of swing states and partisan bias, covering at least two redistricting cycles. There is a reason to suggest that lawmaker's motive for gerrymandering is strengthened if there is uncertainty on the partisan composition among voters in the state. Secure states for either party will likely be less exposed to gerrymandering. Additionally, the efficiency gap and partisan symmetry are useful metrics to measure swing states. Another approach to account for increasing bias in some states can also be to study longitudinal population patterns in each state. This can also be an explanation for the disappearing bias. Simultaneously, it would also be interesting to see if there is a disappearing bias in 2018 and 2020, and in the first election after the 2021 redistricting. Additionally, it can be that other states with medium - to low bias has gerrymandered maps but that the metrics are incapable of measuring the extent of it. This can be a subject for further studies by testing new metrics of partisan bias.

9.4   The way forward

A substantial bias in several states indicates that a significant amount of voters have systematically poorer chances of electing their representatives than their neighbors. While it is in the nature of two-party systems that some voters will not be represented, in many states, a minority of voters can choose on behalf of the majority because of gerrymandered maps. This can be a democratic problem. However, big-wave elections can change this. The literature suggests that the Republican gerrymanders in 2011 were designed in a way to maximize the seat reward in close national elections. This advantage could be reversed if enough Democrats turn out to vote in the midterm elections in 2018. There is, therefore, a possibility that Democrats can overcome this obstacle in the November election.

Further, the U.S. Supreme Court decision in *Gill v. Whitford* in 2018 will be decisive for the future of partisan gerrymandering and can contribute in making it much more difficult for politicians to draw partisan districts through packing and cracking. Simultaneously, declaring partisan gerrymandering unconstitutional also rest on the efficiency gap being regarded as a workable standard of gerrymandering, to use Justice Kennedy's words. Even though the

metric has its limitations, especially in non-competitive states and in smaller states, many of the positive aspects of the metrics outweigh the negatives. An easy, transparent way to measure gerrymandering is needed. The efficiency gap can contribute to that especially because just one numeric value can account for both cracking and packing of districts.

Looking two years ahead, the state legislative and gubernatorial elections in 2020 will also impact the redistricting in 2021 and which party will have the ability to draw maps. There is little reason to believe that Democrats if in power, will be less inclined to draw partisan maps if given the opportunity. However, because of the human geography of voters, Democrats are having a harder time drawing biased maps than Republicans. If the U.S. Supreme Court decides that either partisan gerrymandering is non-justiciable or is not in violation of the U.S. Constitution, there will likely be more extensive gerrymandering in 2021, as has been predicted by several scholars. More information about voters and sophisticated data technology can be used to target voters and draw districts around them. If it is the case that politicians are choosing their voters, instead of voters electing their politicians, it is without a doubt an undemocratic phenomenon. Therefore, electoral reform and transferring the power of redistricting to independent commissions will likely create less bias and a more just translation of votes to seats. However, given that there is increasing polarization among the electorate and politicians, there is a long way ahead before creating independent commissions in many states.

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Appendices

Efficiency gap in the 2012 election

States	Republican-drawn	Democratic-drawn	Bipartisan-drawn	Commission-drawn
AL	-0,97			
FL	**-3,46**			
GA	-0,81			
LA	-0,61			
MI	**-2,84**			
NC	**-2,77**			
OH	**-3,93**			
PA	**-4,17**			
SC	-1,55			
TN	-0,51			
TX	-1,95			
WI	-1,17			
IL		0,56		
MD		0,54		
MA		1,35		
CO			-0,59	
IN			-1,77	
KY			-0,69	
MN			-0,07	
MO			-0,89	
NY			-1,78	
VA			**-2,34**	
AZ				1,1
CA				0,17
NJ				-1,92
WA				0,29

Efficiency gap in the 2014 election

States	Republican-drawn	Democratic-drawn	Bipartisan-drawn	Commission-drawn
AL	-0,41			
FL	-1,78			
GA	-0,87			
LA	-0,32			
MI	**-2,48**			
NC	**-2,74**			
OH	-1,77			
PA	**-2,87**			
SC	-1,19			
TN	-0,16			
TX	-0,5			
WI	-0,62			
IL		-0,18		
MD		1,57		
MA		**2,04**		
CO			-0,22	
IN			-0,63	
KY			-0,32	
MN			0,63	
MO			-0,19	
NY			-1,38	
VA			-1,52	
AZ				0,38
CA				**4,32**
NJ				1,09
WA				0,38

Efficiency gap in the 2016 election

States	Republican-drawn	Democratic-drawn	Bipartisan-drawn	Commission-drawn
AL	-0,7			
FL	-1,45			
GA	-1,38			
LA	-0,03			
MI	**-2,09**			
NC	**-2,56**			
OH	-1,6			
PA	**-3,25**			
SC	-1,2			
TN	0,02			
TX	**-3,18**			
WI	-0,5			
IL		-0,04		
MD		0,86		
MA		1,2		
CO			-0,38	
IN			-0,67	
KY			-0,11	
MN			0,64	
MO			-0,38	
NY			**-2,86**	
VA			-1,13	
AZ				-0,1
CA				-1,35
NJ				-0,64
WA				0, 003

Partisan symmetry in the 2012 election

States	Republican-drawn	Democratic-drawn	Bipartisan-drawn	Commission-drawn
AL	**-43,1**			
FL	**-16,8**			
GA	**-27,6**			
IN	**-17,3**			
KS	3,19			
LA	**-35,7**			
MI	**-20,1**			
MS	**41,2**			
NC	**-36,3**			
OH	**-35,5**			
OK	7,35			
PA	**-36,4**			
SC	**-30,3**			
TN	**-27,8**			
TX	**-14,8**			
UT	-15,3			
WI	**-18**			
AK		0,045		
CT		11,6		
IL		2,89		
MD		**25,3**		
MA		-5,8		
WV		-12,7		
CO			-7,67	
IA			-0,527	
KY			**-24**	
MN			-0,864	
MO			**41,2**	
NE			-19,6	
NV			1,89	
NM			16,7	
NY			1,63	
OR			16,1	
VA			**-30,7**	
AZ				6,3
CA				3,98
NJ				-0,37
WA				-0,887

Partisan symmetry in the 2014 election

States	Republican-drawn	Democratic-drawn	Bipartisan-drawn	Commission-drawn
AL	-21			
FL	**-10,3**			
GA	**-31,5**			
IN	-17			
KS	-3,13			
LA	**-42,6**			
MI	**-23,6**			
MS	**-46,2**			
NC	**-33,4**			
OH	**-37,9**			
OK	-4,33			
PA	**-35,7**			
SC	**-25,6**			
TN	**-39,1**			
TX	**-10,4**			
UT	5,39			
WI	**-34,3**			
AK		-4,4		
CT		0,572		
IL		3,61		
MD		**24,2**		
MA		-7,58		
WV		-11,4		
CO			-7,02	
IA			-5,01	
KY			**-27,7**	
MN			-8,66	
MO			**-36**	
NE			-12,7	
NV			7,43	
NM			**26,6**	
NY			3,15	
OR			26,6	
VA			**-16,3**	
AZ				-5,47
CA				**9,57**
NJ				4,69
WA				2,9

Partisan symmetry in the 2016 election

States	Republican-drawn	Democratic-drawn	Bipartisan-drawn	Commission-drawn
AL	**-21,5**			
FL	**-10,4**			
GA	**-31,6**			
IN	**-16,9**			
KS	-3,4			
LA	**-41,8**			
MI	**-23,4**			
MS	**-46,9**			
NC	**-33,4**			
OH	**-37,9**			
OK	-4,31			
PA	**-35,5**			
SC	**-26**			
TN	**-39,9**			
TX	**10,6**			
UT	-5,15			
WI	**-34,3**			
AK		3,87		
CT		1,61		
IL		3,26		
MD		**24,9**		
MA		-7,26		
WV		-11,6		
CO			-7,13	
IA			-5,22	
KY			**-27**	
MN			-7,91	
MO			**-36**	
NE			-13	
NV			8,16	
NM			**25,9**	
NY			2,92	
OR			26,9	
VA			**-16,3**	
AZ				-5,68
CA				**9,74**
NJ				4,92
WA				3,68

The Polsby-Popper Test

States	Republican-drawn	Democratic-drawn	Bipartisan-drawn	Commission-drawn
MD		8,08		
HI				8,56
LA	11,1			
NC	11,51			
WV		13,65		
ME	14,04			
VA			14,42	
NH			16,45	
IL		16,64		
PA	17,14			
OH	17,22			
AL	18,43			
MA		18,45		
NJ				18,96
TX	19,17			
KY			19,21	
AK		19,89		
RI			20,14	
TN	20,48			
SC	20,5			
WA				21,85
WI	21,85			
CA				22,58
MS	23,33			
CO			24,6	
FL	24,61			
OK	24,98			
ID				25,01
GA	25,83			
MI	26,03			
CT		26,61		
MO			27,08	
UT	27,65			
AZ				30,05
OR			31,15	
NY			31,81	
MN			33,03	
NM			35,17	
NE	39,27			

IA			39,97	
KS	40,52			
IN			41,03	
NV			52,44	