Explaining the Sizes of National Legislatures

by

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I: Introduction and Overview

Legislatures and Legislature Size

All modern states—monarchies and republics, fully and partially recognized, large and small, rich and poor, powerful and weak, democratic and autocratic—have some kind of legislature, a formal deliberative body entrusted to some degree with creating, modifying, and approving the state’s laws. Despite their ubiquity, legislatures differ from each other in many ways and political scientists have created numerous systems for classifying them, often based on their level of influence over policy, which can be defined based on the legislature’s ability to modify, delay, or reject executive policy as well as introduce its own.\(^1\) Additionally, legislatures differ along simple institutional lines that are easy to identify even without an in-depth understanding of their legislative dynamics and organizational structure, such as how a legislature’s members are selected (its electoral system), whether or not that selection process is democratic, whether it is unicameral or bicameral, and what kind of political system the country has. These four institutional features are rightly considered fundamental influences on how any legislature is organized and operates.\(^2\)


\(^2\) Ibid., 3-4.
and have thus been the focus of considerable research. However, many institutional features have received comparatively little attention, including legislature size.

**What is Legislature Size?**

By *legislature size*, I mean a specific numerical figure that can be defined in two possible ways. The first, which I term *actual size*, is the current number of individuals holding full membership status in any of the legislature’s chambers. The second, which I term *statutory size*, is the total number of full membership positions in the legislature specified by law. These figures tend to be very close to each other, with 143 out of 193 UN member states having a legislature where the actual size and statutory size are equal. In 169 out of 193, the variation between the two is no more than five seats. Such differences are usually due to the resignation or death of individual members and generally have little or no political significance. However, in some countries, the difference between the two sizes can be quite large, resulting from specific electoral or political circumstances, such as Germany’s compensating for overhang seats in its lower house, making the actual size exceed the statutory size, or Cyprus’s reservation of seats for Turkish Cypriots currently under the administration of Northern Cyprus, making the statutory size exceed the actual size.

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3 Unless otherwise noted, all figures on current (as of 9 September 2016) legislature size are from "PARLINE," Inter-Parliamentary Union, http://www.ipu.org/parline-e/parlinesearch.asp. The Inter-Parliamentary Union compiles data directly reported from the legislatures of every UN member state, including information on member demographics, legislature size, electoral systems, procedures, and organization. The one notable omission I am aware of is that PARLINE only has data from 270 out of 271 chambers, with the 271st being the Regional Representative Council (Dewan Perwakilan Daerah [DPD]), the upper house of Indonesia’s legislature. Four members are elected from each of Indonesia’s 34 provinces, for a statutory size of 136, but the recently created province of Kalimantan Utara is not yet represented and there is currently (as of 9 September 2016) a vacancy in the province of Papua Barat, for an actual size of 131. See "Anggota DPD 2014-2019," Dewan Perwakilan Daerah Republik Indonesia, http://www.dpd.go.id/anggota-dpd/2014-2019."
Therefore, a clear distinction should be drawn between the two measures and they should not be treated as equivalent to each other.

While both definitions of legislature size are important and I use and discuss both in later chapters, from this point forward, the term legislature size refers to statutory size unless otherwise noted. This is a purely stylistic choice for the sake of brevity and does not imply that statutory size is more valid or legitimate as a definition than actual size. A closely related reason to take legislature size to mean statutory size by default is that most of the literature on legislature size has carelessly failed to draw a distinction between the two definitions, but seems to implicitly use statutory size.

Now that we have a firm grasp on what legislature size is, the next obvious question is why legislature size is a meaningful institutional difference between legislatures and not some cosmetic, irrelevant distinction without any real implications for how they reach decisions, organize themselves, and affect the lives of their states’ inhabitants. Existing research on legislature size has been limited and imperfect, but nonetheless clearly demonstrates its importance and worthiness of further and deeper analysis.

**The Consequences of Legislature Size**

The vast majority of literature on legislature sizes has been in the discipline of public choice, which endeavors to identify and address political problems using
economic analysis. Following a pivotal 1981 article by Weingast et al., most studies invoking legislature size have used it as an independent variable for a very important but very narrow range of political outcomes, namely the size and economic efficiency of public expenditures authorized by legislatures. There is comparatively a dearth of research on other possible consequences of variations in legislature size, such as the form and quality of representation and the fiscal cost of the legislature itself.

Furthermore, the vast majority of existing research has focused on variation within the United States or a single country, with only a handful of studies examining data from multiple countries.

Outside of public choice theory, there has been no continuous engagement with legislature size as an influence on other political outcomes. Individual studies have discussed its relationship to legislature professionalization, increasing the representation of African Americans on local legislative bodies in the United States like school boards and town councils, and making party representation more equitable in proportional electoral systems, but none have been followed by further empirical research or the formulation of a broader theoretical foundation.

Public Choice: Legislative Productivity

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The public choice literature on legislature size can be divided into two strands of thought, one focused on legislative efficiency and the other on the relationship between legislature size and the economic efficiency of government fiscal policy. The prior, which was discussed theoretically in several books and articles primarily in the 1970s, has not been empirically tested or seriously engaged with since the 1980s, but the latter has been the subject of numerous empirical studies and sustained theoretical critique and revision since the connection was drawn by Weingast et al. in 1981.

Theoretical research into the relationship between legislature size and legislative efficiency began with one of public choice theory’s most foundational works: Buchanan and Tullock’s 1962 book *The Calculus of Consent*, which examined many aspects of political organization, including voting systems, bicameralism, and other constitutional arrangements through a lens of methodological individualism, applying a traditionally economic theoretical framework to political problems.\(^8\) One of their most insightful and seminal ideas concerned methods of collective decision making: as the share of people in an organization making decisions increases, the costs of ensuring compliance (or “external costs”) decrease while the costs of reaching a decision (or “decision-making costs”) increase.\(^9\) Hence, if fewer people are needed to reach a decision in a state (e.g. a dictatorship or oligarchy), it will be harder to get the rest to go along with it, but if more are needed (e.g. a direct democracy), it will be harder to reach a decision to begin with. In one brief chapter, Buchanan and Tullock extend this line of reasoning to the “four essential constitutional variables” of a


\(^9\) Ibid., 215-6.
legislature: the rules for choosing representatives, the rules for deciding issues in the legislature, the proportion of the population in the legislature, and the basis of representation (i.e. what the constituencies are).

The third variable, which they call the “degree of representation,” is equivalent to the size of the legislature. Buchanan and Tullock postulated, albeit in a way that they admitted would be difficult to operationalize, that the “optimal” size of a legislature would be the size that minimized the sum of the external costs and decision-making costs. The relationship between these costs and legislature size has been the subject of a minimal amount of empirical research, consisting entirely of an interesting but isolated study by Crain and Tollison (1977) which found that American state legislatures with more restrictive voting rules tended to be smaller.

Subsequent public choice theorists refined and expanded Buchanan and Tullock’s economic model of the legislative efficiency and the effects of legislature size, but there has been little or no theoretical development since 1981. Crain (1979) applied microeconomic theory to a hypothetical legislature, treating it as a firm whose product is legislation and concluding that although the costs of reaching a legislative majority would be higher in a larger legislature, a larger legislature could also take advantage of a more efficient committee structure and legislative division of labor. A priori, it would be impossible to tell whether the decision-making costs, and thus legislative efficiency of the chamber, would be higher or lower in a larger

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10 Ibid., 213-4.
11 Ibid., 216.
Empirical research would have to be conducted to determine the answer. However, overshadowed by subsequent developments in public choice theory, these models have not been subjected to empirical scrutiny or expanded on since. This framework nonetheless has great potential and the importance of decision-making costs could be extended to other legislative dynamics, such as coalition formation.

**Public Choice: Distributive Politics**

Almost all political science research mentioning or analyzing legislature size since 1981 has been part of the study of distributive politics, which analyzes how public resources are allocated to specific, usually geographic constituencies. Weingast et al. (1981) provided the theoretical foundation of this field by introducing a sophisticated economic model to provide a rational explanation for the social inefficiency of distributive policies, often pejoratively referred to as “pork-barrel spending” in the United States. One crucial conclusion to emerge from their work was a corollary to their model which they termed the “Law of 1/n.” According to the Law of 1/n, as the size of a legislature increased, each member’s constituency would pay a smaller portion of the total cost of whatever pork-barrel project they wanted, making their optimal spending level on the project diverge further and further from the lower social optimum. Thanks to logrolling, representatives would generally defer to each other on the costs of these projects and government spending would become increasingly less socially efficient.

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14 Barry R. Weingast, Kenneth A. Shepsle, and Christopher Johnsen, 654.
Figure 1.1 is the graph used by Weingast et al. to illustrate the Law of 1/n mathematically. \( B(x) \) is the total social benefit of the pork-barrel project, defined such that the marginal benefit diminishes as the size of the project \( x \) increases. \( C(x) \) is the total cost of the project, consisting of resources spent inside the constituency \( c_1(x) \), which directly benefits the constituency’s economy; resources spent outside the constituency \( c_2(x) \); and other costs imposed the district, such as environmental damage \( c_3(x) \). As the size of a legislature increases, the share of national taxes paid by the constituency \( t_jT(x) \) decreases, so the optimal size of the project for the constituency’s legislator \( x^N \), defined as the size where total economic benefit to the constituency \( b(x) + c_1(x) \) minus the total economic cost to the constituency \( t_jT(x) + c_3(x) \) is maximized, increases while the socially optimal size \( x^E \) remains the same. Hence, the Law of 1/n posits that we would expect government spending to be less efficient in places with larger legislatures than in those with smaller ones as the gap between \( x^N \) and \( x^E \) increases with legislature size.
Crucially though, the Law of $1/n$ implicitly assumes political and legislative features that resemble those of state and federal legislatures in the United States, namely a simple geographic basis for representation and limited party discipline, both of which are necessary for legislators to consider pork-barrel spending politically beneficial. These assumptions have shaped the trajectory of the literature that has built on the Law of $1/n$ as well as its applicability to comparative politics. Studies of legislatures that match these assumptions, most commonly state and local legislatures in the United States, have generally found a statistically significant relationship between legislature size and government spending, supporting of the Law of $1/n$.

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15 Ibid., 647.
16 Reza Baqir, "Districting and Government Overspending," ibid.110, no. 6 (2002); John Charles Bradbury and E. Frank Stephenson, "Local Government Structure and Public Expenditures," Public Choice 115, no. 1/2 (2003). Some studies have nonetheless found no relationship between the two variables when controlling for other variables or looking at shifts in spending over time. See Lynn
but studies looking at other national contexts, such as local governments in Europe, have not reached consistent conclusions.\textsuperscript{17}

The study of distributive politics has looked at the influence of numerous institutional factors on government spending and efficiency, including diversity across districts,\textsuperscript{18} the number of elected officials per capita,\textsuperscript{19} legislative term limits,\textsuperscript{20} budget rules,\textsuperscript{21} constituency size,\textsuperscript{22} and party ideology.\textsuperscript{23} Legislature size has been one of the most popular of these factors to study empirically, and although the Weingast et al. model is far from perfect and limited by its distinctly Americanist assumptions, the literature surrounding it provides solid evidence that legislature size can be a meaningful influence on policy outcomes. However, very little research has actually


\textsuperscript{19} Christopher Berry and Jacob Gersen, "Fiscal Consequences of Electoral Institutions," ibid.52, no. 3 (2009).


tried to explain why some of these legislatures are larger than others and thus what these different outcomes ultimately derive from.

**Explaining the Sizes of National Legislatures**

If nothing else, the public choice literature connecting legislature size to levels of government spending established that legislature size had at least some influence on political outcomes, albeit with the exact relationships still being subject to revision and debate. The earlier theories of legislative efficiency may not have been empirically tested, but they did make a strong case that the way a legislature was organized and the way it reached decisions could not be understood without looking at the number of legislators it had. Although woefully incomplete in many places, enough research has been done on the effects of legislature size to show that it is not some meaningless *a priori* institutional variable to be dismissed or taken for granted. Therefore, an analysis of the influences on the sizes of different national legislatures can serve as a foundation for understanding other forms of variation in legislative institutions and processes in different countries. However, no such comparative analysis currently exists and very little research has tried to find common influences on legislature size between any legislatures, with population being the only influence studied in any depth.

Stigler (1976) was the first and one of the only scholars to empirically study why some legislatures were larger than others.24 Stigler’s main goal was to introduce

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a theoretical scheme for how legislatures of differing sizes responded to interest
groups and incorporated them into the legislative process, drawing on the earlier work
of Buchanan and Tullock (1962) and the classical political theory of James Madison,
who argued that in any republican system of government, “the representatives must
be raised to a certain number, in order to guard against the cabals of a few; and that,
however large it may be, they must be limited to a certain number, in order to guard
against the confusion of a multitude.”

Stigler admitted that his brief discussion of the topic was “long on problems
and short on solutions,” but he did make three very important observations about
variations in legislature size. First, he noted that both American state legislatures and
national legislatures were relatively similar in size, varying far less than their
populations. As an economist, Stigler was “accustomed to ranges of observed sizes of
firms of 1,000 to 1” and it was surprising to see a range of only about 5.2 to 1 across
the United States despite extreme population differences.

Second, the size of a legislature tended to be highly, though not absolutely
resistant to change over time (see Figure 1.2), even as political and social conditions
dramatically changed. Stigler noted that despite the population of the United States
more than tripling from 63 million in 1889 to 203 million in 1969, only a few states
increased the size of their lower house by more than 100%.

26 George J. Stigler, 31.
27 Ibid.
Third, Stigler identified population as one clear predictor of legislature size both within the United States and between a series of thirty-eight countries he compiled. In both contexts, the base-10 logarithm of population had a statistically significant relationship with the base-10 logarithm of the size of the state or country’s lower house (see Figures 1.3 and 1.4), meaning that it followed the form \( S = aP^b \), where \( S \) is size; \( P \) is population; and \( a \) and \( b \) are constants. Stigler’s analysis of the influences of legislature size may not have analyzed many variables or provided any historical evidence of those variables exerting an influence, but he did find empirical support for the seemingly commonsense assertion that larger countries have larger legislatures and that this relationship is exponential.

\[ \text{Figure 1.2: Lower House Size of U.S. State Legislatures in 1889 and 1969}^{28} \]

\[ \text{Ibid., 20.} \]
A second study by Taagepera and Shugart (1989) attempted to explain the clear empirical trend that “larger nations tend to have larger assemblies,” by modeling the size of lower houses with a “cube root law,” holding that they would tend to have statutory sizes equivalent to the cube root of their population (e.g. a country with a population of 125,000,000 would be expected to have a lower house with exactly 500 members, making $S = P^{1/3}$). The trend, they argued, was predictable based on a

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Ibid., 21.
Ibid., 22.
Studies that have actually calculated the exponential relationship between population and statutory lower house size, including Stigler’s, have found that the exponent is slightly greater than one third. The only other such study I know of is Kristof Jacobs and Simon Otjes, "Explaining Reforms of Assembly Sizes: Reassessing the Cube Root Law Relationship between Population and Assembly Size," (Glasgow: European Consortium for Political Research, 2014).
rational model, which postulated that legislators spend more time on communication than any other activity and that they will seek to minimize the total number of “communication channels” they have to monitor. Because every legislator has to monitor channels between themselves and their “politically active” constituents (that is, literate constituents who can vote), which decrease in number as the chamber’s size increases, and all the communication channels between legislators, which increase in number as the chamber’s size increases, they will push for adopting a size equal to the cube root of the country’s population.\(^{32}\) While their model is mathematically coherent, its assumptions regarding the monitoring of thousands or even hundreds of thousands of “communication channels” seem blatantly absurd and are not supported by any historical evidence from actual legislatures.

In this thesis, I take one of the principal questions raised but not answered by Stigler’s analysis, why some legislatures are larger than others, and provide a rigorous empirical answer with respect to national legislatures. I believe that the few studies that have taken this question seriously have suffered from two major deficiencies. First, they have either failed to address any possible influences other than population or not addressed enough. Second, they have been largely theoretical and refrained from using any direct historical evidence that could support or cast doubt on their models and hypotheses. By examining more variables and conducting case-studies on individual countries, I hope that this analysis is more comprehensive and persuasive than its predecessors. By understanding where variations in legislature size come from, fields like distributive politics that have already studied the effects of

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legislature size can gain a deeper understanding of the causes of the phenomena they study. Furthermore, I hope this thesis can call further attention to legislature size as an institutional characteristic worthy of study from multiple disciplines and perspectives and transition away from the near-monopolization of the subject by researchers studying distributive politics.

However, analyzing legislature size is not a simple task, particularly because national legislatures emerge and develop in a very broad range of institutional and historical contexts. While determining which factors are generally associated with larger or smaller legislature sizes is relatively simple, understanding why they influence legislature size and how specific legislatures expand or contract over time is significantly more complicated. Accordingly, I cannot provide a definitive explanation for every trend I uncover here and every possible reason a legislature would expand or contract, but I can provide stronger evidence for several than any previous study has.

**Research Design**

In Chapters II and III, I statistically analyze the relationships between various measures of legislature size and sociopolitical factors such as population and the legislature’s electoral system. Recognizing Stigler’s observation of how inelastic legislature size can be to change over time, I test almost all of these variables *statically* and *dynamically*. That is, I test not only if the variable in question is associated with larger or smaller legislatures but also if the variable is associated with increases or decreases in legislature size over time. Incorporating both tests whenever possible is essential to confirm the validity of the relationships between the variables
and legislature size as well as develop a more nuanced understanding of them: if countries with larger populations have larger legislatures but changes in legislature size happen independently of changes in population, then clearly the dynamics are more complicated than they might otherwise appear. However, the conclusions reached from the dynamic analysis are significantly more limited than those from the static analysis due to data limitations. Overall, the statistical analysis confirms that population is the single largest influence on the sizes of legislatures and their chambers, but also calls attention to new relationships such as the comparatively large size of legislatures in one-party states and countries that formed before 1701.

However, statistically analyzing these relationships can only reveal the correlation between different factors and legislature size. Correlation cannot demonstrate causation or indicate how the factors’ influence actually plays a role in determining the size of a legislature over time. To demonstrate the causal role of several variables, I use historical evidence from two lower houses, the United States’ House of Representatives and the United Kingdom’s House of Commons, and construct general models based on them that plausibly explain the correlations observed in the statistical analysis in Chapters IV and V.

In countries following the American Model, derived from the history of the House of Representatives, the use of population-based calculations to periodically reapportion the lower house tends to result in size increases, particularly as underpopulated divisions push for successive size increases to prevent them from losing their existing seats. Eventually though, this “growth phase” can come to an end as opposition to further growth increases with the size of the lower house, ushering in
a “stagnation phase.” Countries that follow the British Model conversely tend to have large lower houses in the present because their legislatures developed under premodern political conditions. Because premodern legislatures tended to meet extremely infrequently and were poorly attended they experienced less pressure to prevent size increases. Even as these legislatures became more permanent, professional institutions and modernized their procedures and elections, it has proven far less difficult to maintain their existing sizes than reduce them, resulting in modern legislatures that are unusually massive.

Critically, these models differ from earlier studies and theories in describing the process of selecting a legislature’s size as a totally elite-centered process, with the larger public playing little or no role in deciding the issue. Rather than resulting from public demands for more representation, the population relationship is a consequence of legislators using population, almost wholly without respect to its political power or relevance, as the basis of apportionment. In both cases, large extensions of the franchise had little to no effect on the magnitude of different size increases.
II: Factors Potentially Associated with Legislature Size

Introduction

This chapter introduces and discusses the six independent variables I test as potential predictors of legislature size in Chapter III: population, electoral system, continent, date of formation, GDP per capita, and form of government. Of these six variables, population is unquestionably the most established and the only one that has been studied in any depth. However, plausible hypotheses can be made about the influence of the other variables as well. In addition to providing these hypotheses, this chapter also explains how I defined and operationalize each variable. While some variables are drawn without revision from established sources (e.g. population), others have required the creation of original definitions and categories, most notably electoral system, date of formation, and form of government. While the text included in this chapter is sufficient to understand all of my definitions, readers looking for more detail, particularly with respect to how I handle problematic cases, can refer to Appendix A.

Scope of Analysis: States, Legislatures, and Chambers

Before delving into the statistical analysis, we have to deal clearly and precisely with the definitional questions surrounding its focus. In essence, I must explicate the concept of a “national legislature” as I did “legislature size” in Chapter
I. While the definition of a national legislature may seem intuitively obvious, something along the lines of “the highest-level legislative body in a sovereign state,” it raises at least three questions that cannot be trivially dismissed. The first is what political communities qualify as sovereign states, a central concern because it determines how many countries are included in the analysis. The second is which bodies in those states qualify as national legislatures, as opposed to other consultative or regulatory groups. Finally, we need to explicitly define the concept of bicameralism and clear, concise criteria for identifying upper and lower houses in bicameral legislatures.

For the purposes of this analysis, a sovereign state\textsuperscript{33} is a full member state of the United Nations and its territory and population are those as defined by the UN, regardless of what state or other body actually exercises control over them. For the sake of data consistency, this definition explicitly excludes the two UN observer states (Palestine and the Holy See) and a variety of other countries that have been functionally independent for an extended period of time, but for one reason or another are not recognized as such by the UN, with the most notable two probably being Taiwan and Kosovo.

While some controversy undoubtedly exists over whether certain formal deliberative bodies qualify as legislatures because of their weak ability to actually modify or reject legislation, particularly in cases like Saudi Arabia where the head of state is empowered to rule by decree, authoritative databases on the governments of every country are in general agreement about which bodies constitute the national

\textsuperscript{33} The terms “state” and “country” are used interchangeably throughout unless otherwise noted.
legislatures of each country, including in cases where the actual enacting of laws is
done by decree.\textsuperscript{34} Unless otherwise noted, my standard for a legislature’s inclusion in
this analysis is its inclusion in the Inter-Parliamentary Union’s (IPU) PARLINE
database, which is the most complete and most current resource on the institutional
features of each UN member state’s national legislature.

Although it is possible for a legislature to deliberate in as many separate
assemblies, or chambers, as it so desires, no national legislature among the 193 UN
member states has more than two chambers. Out of those 193, 78 have two chambers
(bicameral legislatures) and 115 have one chamber (unicameral legislatures). The
bicameral legislatures generally have one chamber that is directly elected (a trait they
share with almost all unicameral legislatures) and where most laws are initially
introduced as well as a second chamber, almost always smaller,\textsuperscript{35} which modifies or
rubber-stamps legislation from the first chamber. By convention, the first chamber is
referred to as the “lower house” and the second as the “upper house,” although they
may or may not be explicitly designated as such. To my knowledge, there has never
been a serious disagreement about whether one chamber is more properly termed the
lower house than the other, so my classification of chambers should not be
controversial.

\textbf{Overview and Explanation of Variables}

\textbf{Static versus Dynamic Relationships}

\textsuperscript{34} For example, both the World Factbook and PARLINE refer to the Consultative Council of Saudi
Arabia as that country’s legislature. See “The World Factbook,” Central Intelligence Agency,
https://www.cia.gov/library/publications/resources/the-world-factbook/; "PARLINE”.
\textsuperscript{35} The only exception is the United Kingdom.
To ask what the relationship between some factor and legislature size is effectively to consider two different questions. First, do countries with this factor have larger legislatures than those without this factor? I term this connection a static relationship in that it does not consider internal variations in legislature size and the factor over time. The second question however factors in changes over time: if this factor were to change in a country, would that country’s legislature size be affected, or at least become more likely to be affected? Opposite to a static relationship, I term this a dynamic relationship.

Whenever possible, I try to test a static hypothesis and a dynamic hypothesis for each variable, because the results of tests for each relationship reveal important information. To illustrate this, I will explain the possible results of an analysis of the relationship between average temperature and legislature size. A static analysis of the data may demonstrate that countries with higher average temperatures tend to have larger legislatures while a dynamic analysis may find no relationship between rises in average temperature and increases in legislature size. I.e., it may turn out that legislatures do not grow in the summer and shrink in the winter. The revelation that there is no dynamic relationship does not disprove or delegitimize the static relationship in any way, but makes it clearer what the relationship between temperature and legislature size actually is. The size of a legislature is clearly not sensitive to changes in temperature to the degree that there will be more or fewer members based on seasonal temperature shifts, but we cannot dismiss the fact that hotter countries tend to have larger legislatures. Perhaps when the legislatures were designed, social elites demanded more seats in the chamber so they could take
advantage of free air conditioning. Hence, the absence of a dynamic relationship and presence of a static relationship can point to potential historical influences on legislature size. Conversely, the absence of a static relationship and presence of a dynamic relationship may indicate that temperature has only recently become an influence on legislature size.

I should note that the data I use to test static hypotheses will always be more complete than the data I use to test dynamic hypotheses because I do not have consistent information on historical legislature sizes for every UN member state. My source for this data, Bormann and Golder’s “Democratic Electoral Systems around the World, 1946–2011,” is a dataset of democratic legislative and presidential elections. Hence, if a country has not had a regime where “(i) the chief executive is elected, (ii) the legislature is elected, (iii) there is more than one party competing in elections, and (iv) an alternation under identical electoral rules has taken place,” I cannot use it in any dynamic analysis. How significant this reduction in the sample size from 193 to 117 depends on the variable being analyzed. The impact should be relatively minimal with a variable like population, as democratic regimes are found about as often in small countries as in large ones, but it should be more severe with a variable like GDP per capita, as wealthier countries tend to be democratic significantly more often than poorer ones. Additionally, I have had to further abridge

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37 This definition of a democratic regime (and obviously this is not the only possible one that could be used) is taken from Adam Przeworski, *Democracy and Development: Political Institutions and Well-Being in the World, 1950-1990* (New York: Cambridge University Press, 2000). Its theoretical merits aside, it is relatively conservative compared to other definitions of democracy. For example, it excludes South Africa because it has yet to have a democratic alternation of power between two different parties.
the dataset based on data availability and the chronological isolation of different entries, which I explain in depth in the “Dynamic Analysis” section of Chapter III.

Three of the countries listed in Bormann and Golder’s dataset (Czechoslovakia, Serbia and Montenegro, and West Germany) no longer exist. For the latter two countries, there is a single legal successor state to them among the member states of the UN, and I have accordingly chosen to include data from them as part of those countries’ data. In the case of Czechoslovakia on the other hand, there was no single successor state and hence I have chosen to simply disregard that data in the dynamic analyses.

Table 2.1: States That No Longer Exist in Bormann and Golder

<table>
<thead>
<tr>
<th>State</th>
<th>Elections in Bormann and Golder</th>
<th>Dissolution</th>
<th>Successor State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czechoslovakia</td>
<td>1990, 1992</td>
<td>31 December 1992</td>
<td>Disregarded</td>
</tr>
<tr>
<td>Serbia and Montenegro</td>
<td>2000, 2003</td>
<td>3 June 2006</td>
<td>Serbia</td>
</tr>
<tr>
<td>West Germany</td>
<td>11 elections</td>
<td>3 October 1990</td>
<td>Germany</td>
</tr>
</tbody>
</table>

One final distinction between the static and dynamic analyses is that while I give data for the static relationships with respect to six variables of legislature size (actual/statutory lower house size, actual/statutory upper house size, and actual/statutory legislature size), I can only use actual lower house size in the dynamic analysis. Unfortunately, Bormann and Golder neither include data on upper houses nor consistently report differences between statutory and actual size. While this is not surprising, as Bormann and Golder’s data is geared towards the statistical analysis of electoral systems and not legislature sizes, its various forms of
incompleteness relative to the static data mean that my dynamic analysis should not be interpreted as the definitive or conclusive study of the subject.

**Population**

Of all the variables in this analysis, population is the only one that has been discussed in any serious depth as an influence on legislature size, indeed the only one discussed by multiple authors, namely Stigler (1976), Taagepera and Shughart (1989), and Jacobs and Otjes (2014). As examined in the introduction, all three of these studies agreed that the relationship between lower house size and population follows the form $S = aP^b$, where $S$ is size; $P$ is population; and $a$ and $b$ are constants. Taagepera and Shughart postulated that the relationship would be $S = P^{1/3}$ based on rational legislators minimizing the number of “communication channels” they had to monitor, but the apparent absurdity of their assumptions and absence of any empirical evidence to support them make their model unlikely to explain the actual relationship between population and legislature size.

My static hypothesis for population is that countries with larger populations will have larger legislatures than those with smaller populations, that population will be the single most significant influence on every measure of legislature size, and that the relationship will follow the form $S = aP^b$. In addition to the cost-based models of Buchanan and Tullock (1962) and Taagepera and Shugart (1989), there are other theoretical reasons to believe this would and should be the case, such as the fact that it is easier for a larger country to appropriate the resources necessary to institute and maintain a larger legislature. Assuming the function is of the form $S = aP^b$, we will be able to find $a$ and $b$ by taking the linear regression of the relationship between the
logarithm of population and the logarithm of legislature size, solving for the y-intercept and coefficient of the equation \( \log(S) = b \log(P) + \log(a) \).

Jacobs and Otjes (2014) hypothesized that countries with a larger gap between their predicted and actual lower house size would be more likely to see the actual size increase, but noted that there was no statistically significant relationship. However, another possible dynamic hypothesis drawing on Taagepera and Shugart’s model concerns the rate of population growth: perhaps countries with faster population growth (in terms of annual growth rate) are more likely to see an increase in legislature size between two consecutive elections than those with slower population growth, regardless of the size of the gap between predicted and actual size. It is possible that in any one country, a slowly increasing gap would not be perceived as an urgent issue in need of a legislative solution. The growth in population would not be perceived as significant enough to disrupt the existing relationship between the legislators and their constituents. However, if the population was increasing at a dramatic rate, say 4% a year (equivalent to a doubling time of about 17.7 years), the legislature would see expanding the legislature, and thus reducing the pressures and demands of their constituencies, as an issue that needs to be addressed within a very short period of time, highly increasing its likelihood of actually being enacted.

For current and historical population figures, I rely on estimates from the United Nations Population Division,\(^{38}\) which provide detailed and comprehensive estimates on every UN member state. For the static analysis, I use the latest current population estimate, which at the time of the 2015 revision was as of July 2015. For

the dynamic analysis, I define the population growth as at the estimated change in population in the year the election was held from the previous year.

**Electoral System**

Categorizing the ways legislators are selected in a useful, meaningful way is difficult because of the many different rules, quotas, and methodologies used by different countries. Bormann and Golder (2013) for example classified electoral systems into three categories, six subcategories, and twenty-three subcategories with the intent of providing as much detail as possible about how they functioned. For my own classification system, which applies to all legislative chambers, whether national, subnational, or supranational, I have created a series of categories and associated criteria with three related goals in mind: keeping the number of categories and subcategories relatively small, defining them with clear and coherent criteria, and including all possible methods of selection to ensure that the taxonomy is fully robust and applicable to other analytical contexts in political science. One very important distinction between this system and common alternatives is that it is indifferent to how free or fair the legislature’s selection process is as well as the state of the franchise. Stated another way, it is equally applicable to democratic and nondemocratic regimes. Additionally, unlike the other variables discussed and analyzed in this chapter, electoral system is only meaningful in the context of each specific chamber, not the overall legislature. Hence, I do not test any relationships between total legislature size and electoral system.

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39 Nils-Christian Bormann and Matt Golder, 362.
The two main categories are directly elected chambers and those that are not directly elected. I define a directly elected chamber as one where a majority of its members are selected by some process that aggregates the preferences of the most extensively franchised group in the legislature’s jurisdiction, which I term the general electorate. All other chambers are not directly elected. Not directly elected chambers can be subdivided into those that are indirectly elected and those that are unelected. The distinction between the two is derived from the composition of the members not directly elected. If a majority of those members are selected by a body (which may or may not be legislative in function) that is directly elected, the chamber is indirectly elected. I also apply this category to chambers that are in turn selected by indirectly elected bodies or a chain of them. During the Cold War, there was a significant number of such chambers influenced by the Marxist-Leninist idea of democratic centralism, but the only remaining chamber in this tradition is China’s National People’s Congress. Additionally, it is the only lower house out of one hundred ninety-three that is currently indirectly elected. Indirect elections are far more common in upper houses, with twenty-nine out of seventy-eight fitting in this category. In all thirty indirectly elected chambers, no members are directly elected.

In an unelected chamber, at least half of the not directly elected members are selected by some process other than indirect election. This criterion is deliberately vague and serves as a catch-all for many different selection processes, such as appointment by a single directly or indirectly elected official, grandfathering in from another legislature, hereditary status, random chance, and election, direct or indirect, by a narrow functional constituency that does not reflect the general electorate, such
as the alumni of a specific university or a trade union. The most common selection process used at the national level that qualifies as “unelected” is appointment, but there are notable cases where at least some members of a chamber sit in it by virtue of hereditary status, such as the United Kingdom’s House of Lords and Lesotho’s Senate. Overall seven lower houses and seventeen upper houses are unelected. As with the indirectly elected chambers, no members are directly elected in any of the unelected chambers.

Among directly elected chambers, we can distinguish between majoritarian, proportional, and mixed electoral systems. In majoritarian chambers, more than 85% of directly elected members are selected, either individually or in a group, because they received the most votes in their constituencies. Majoritarian elections may be as simple as a plurality vote in single-member districts, which is by far the most common model, or incorporate complex elements like multiple rounds and ranked or multiple votes. Of the five subcategories in my classification system, majoritarian is the largest, including seventy-eight lower houses and twenty-one upper houses, ranging from some of the world’s smallest countries like Palau and Grenada to some of the largest like the United States and India.

In proportional chambers, more than 85% of directly elected members are selected through an electoral process that allocates seats in multi-member constituencies via calculations involving either quotas (allocating seats by dividing the number of votes by some specified quota) or divisors (allocating seats based on the magnitude of quotients calculated from the number of votes and a specified series
of divisors), typically based on party-list voting. Although these chambers are often classified based on their efforts to achieve mathematical “proportionality,” the abundance of existing methods commonly in use, from the d’Hondt method to the Hare quota to the single transferrable vote, demonstrates that proportionality has numerous different meanings and thus cannot be used as a criterion. Furthermore, some forms of proportional representation are deliberately non-proportional, overtly favoring certain parties over others. The d’Hondt method for example is often seen as favoring larger parties or coalition governments. Thus defined by their calculative approach to seat allocation, seventy-six lower houses and nine upper houses qualify as proportional chambers. As with majoritarian chambers, they are found in all parts of the world and in countries of all sizes.

In mixed chambers, a significant number of members are elected both directly and indirectly. Specifically, if at least 15% of a chamber’s directly elected members are elected by majority voting and at least 15% are elected by proportional voting, it qualifies as mixed. The shares of seats won by one party or another by the two methods may be directly related, as in an additional member system, or totally disconnected, as in a parallel voting system. The choice of a threshold between mixed and the other directly elected categories is inherently arbitrary, but 15% does have clear advantages: it is not so strict that it excludes Greece’s Hellenic Parliament and South Korea’s National Assembly, which both elect roughly one sixth of their

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40 This definition of proportional elections is closely adapted from Bormann and Golder’s, which manages to succinctly capture the diverse calculation methods the term is applied to.

legislatures’ members through the lesser method, but strict enough to exclude countries where the number of legislators elected by the lesser method is not a meaningful influence on the electoral or legislative process. As an illustration, consider a hypothetical chamber electing five percent of its legislators through majoritarian elections and ninety-five percent through proportional elections. With the control of the legislature firmly in the hands of who won the proportional elections, it seems appropriate to treat such a legislature as proportional. Under these criteria, thirty-one lower houses and two upper houses (those of Japan and Mexico) are mixed chambers.

Of the five subcategories, mixed seems to be most likely to produce a larger chamber, particularly with respect with majoritarian chambers. Typically, mixed systems, like most majoritarian systems, divide their countries into single-member districts, but unlike majoritarian systems, they then add additional members through some proportional calculation. Furthermore, some mixed systems, such as that of Germany’s Federal Diet, can expand the actual size of the chamber beyond its statutory size in the interest of equitable representation. Hence, a plausible static hypothesis is that mixed chambers will be larger than those with other electoral systems. A corollary of this is that the reforming of an existing majoritarian or proportional chamber into a mixed one would require expanding its size to accommodate its new electoral rules, forming the basis of our dynamic hypothesis: chambers that change their selection mechanism to a mixed system are more likely to be increased in size during or soon after the change than those that do not experience such a change.
For the static analysis, I categorize the current electoral systems used in all 271 national legislative chambers based on the IPU’s descriptions of each. As with all PARLINE data, these descriptions are self-reported and explain all selection mechanisms used in each chamber. For the dynamic analysis, I only examine directly elected legislatures, as limited by the scope of Bormann and Golder’s data, deferring to their categorization of electoral systems into three main categories (majoritarian, proportional, and mixed) that closely mirror my own definitions.\textsuperscript{42}

**Continent**

What distinguishes a continent from another geographical region or division is inherently arbitrary, determined more by convention than any inherent geographical, historical, or cultural characteristics.\textsuperscript{43} Disputes over the merits of the conventional categorization of countries into six inhabited continents (Africa, Asia, Europe, North America, Oceania, and South America) aside, there are plausible reasons to believe that a country’s continent could be a significant predictor of legislature size. Although generalizing about countries at the level of a continent can be difficult by virtue of the diversity and complexity inherent in any geographical region, countries on the same continent typically have more in common with each other than with countries on other continents. There are many forms these similarities can take. The countries may share a common political history, such as an ancient political union (e.g. the Roman

\textsuperscript{42} There are two main points of divergence. First, their taxonomy does not adequately account for chambers with both a directly elected and not directly elected members. Second, their definition of mixed systems uses 5% as the threshold whereas I use a stricter 15%. See Nils-Christian Bormann and Matt Golder, 163.

Empire) or a recent partition (e.g. the Indian subcontinent). Countries in South America and Africa can be distinguished from countries in other continents by the fact that they typically achieved independence within twenty or thirty years of their neighbors under relatively similar conditions. These cultural, historical, and institutional ties are undoubtedly important to understanding the formation of these countries’ legislative institutions and, perhaps, to understanding the sizes of their legislatures.

For the continent of each country, I use the twenty-two geographical subregions defined by the United Nations Statistics Division (UNSD) to categorize all 193 UN member states, as well as several other observer states (e.g. the Holy See), associated states (e.g. Tokelau), and dependencies (e.g. Hong Kong). While many of these subregions are meaningful for the same reasons continents are, the sheer number of subregions necessitates reduction to less homogenous continents. I express each continent as one or more subregions below in Table 2.2.

*Table 2.2: The Six Continents*

<table>
<thead>
<tr>
<th>Continent</th>
<th>UNSD Subregions</th>
<th>Number of Countries</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>Eastern Africa</td>
<td>54</td>
<td>28.0%</td>
</tr>
<tr>
<td></td>
<td>Middle Africa</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Northern Africa</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Southern Africa</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Western Africa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia</td>
<td>Central Asia</td>
<td>47</td>
<td>24.4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Continent</th>
<th>UNSD Subregions</th>
<th>Number of Countries</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Asia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southern Asia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South-eastern Asia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western Asia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>Eastern Europe</td>
<td></td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Northern Europe</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Southern Europe</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Western Europe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North America</td>
<td>Caribbean</td>
<td></td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Central America</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Northern America</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oceania</td>
<td>Australia and New Zealand</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Melanesia</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Micronesia</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Polynesia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South America</td>
<td>South America</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>World</td>
<td></td>
<td>193</td>
</tr>
</tbody>
</table>

I hypothesize that of these six continents, Europe will tend to have the largest legislatures when controlling for the other variables. My reasoning here is largely based on informal observation. Of the four largest legislatures in the world, three are European, but none of those three countries (the United Kingdom, Italy, and France) are among the world’s twenty largest countries by population. Romania has a population under twenty million, yet has a Parliament larger than the United States Congress. Sweden has a population under ten million, but its Parliament is, at 349 members, only one seat smaller than that of Bangladesh, a country of one hundred
sixty million. Seeing as European countries have legislatures that are already unusually large, I expect that countries outside Europe will be more likely to see periodic increases in the size of their legislatures.

**Date of Formation**

The historical period when a country (or its predecessor state) was first constituted is a relatively clear and easily observable indicator of the political circumstances under which it and by extension its legislature came into being. Most of the world’s current countries (particularly in Africa, Asia, and Oceania) became independent after World War II and saw their political institutions emerge in a post-imperial context. Conversely, a significant number of countries (mostly in Europe) have historical antecedents stretching back hundreds of years, meaning that many of their political institutions have emerged over a considerable period of time. Legislatures in particular may have emerged from feudal assemblies with very different criteria for representation and election than their present counterparts. The legislatures of newer countries by contrast are typically either the successors of colonial institutions or even newly designed at the time of independence.

These differences may result in significant differences in legislature size as the considerations influencing the design of a legislature are certainly different from those in the medieval or early modern periods. For analytical purposes, I define a country’s “date of formation” as the year in which its earliest direct predecessor was politically organized as a functionally independent state for the first time. This is a difficult concept to operationalize and to explain my classification decisions, I
address four of the most important operationalization issues in Appendix A and provide a short explanation for each country’s date in Appendix B.

I have created five historical categories that I believe encapsulate significantly different historical periods of state formation. Countries fall in the category whose historical range includes their date of formation.45 The first, “before 1701,” includes twenty-two countries with feudal or archaic origins, mainly current or former monarchies in Europe and Asia. The second, “1701-1900,” consists of twenty-nine countries, mostly countries in the Americas that achieved independence from Spain and several European countries that achieved independence from the Ottoman Empire in the 19th century. The third, “1901-1944,” is a more mixed group of twenty-one countries, with the largest group consisting of states that became independent as a direct or indirect result of World War I, including many former Ottoman territories. The fourth, “1945-1989,” includes ninety-six countries, almost all of which are former colonies in Africa, Asia, the Caribbean, and the Pacific. The final category, “after 1989,” twenty-five countries, is mostly composed of former constituent republics of the Soviet Union and Yugoslavia. Note that in each category, the majority or plurality of the countries were formed by a relatively similar process (e.g. the emergence of feudal monarchies or decolonization) distinct from that in the other categories.

I hypothesize that the countries in the “before 1701” category will have the largest legislatures when controlling for other variables. This is based on the fact that a significant number of legislatures in this category may have likely followed the

45 I based these dates largely on the “independence” fields in the countries’ entries in "The World Factbook". Explanations for each date can be found in Appendix B.
British Model, with their lower houses reaching unusually large sizes under conditions common to premodern legislatures such as low attendance and short nondeliberative sessions. Because modern legislatures generally lack these features, legislatures created in more recent times will be less likely to have developed under such conditions and thus be smaller on average.

Date of formation is highly correlated with and indeed a potential confounder of the continent variable discussed in the previous section. Of the six continents, all but Europe have seen more than two-thirds of their current countries achieve independence in one or two of the periods I defined. Consequently, any difference between Europe and other continents may disappear after controlling for date of formation, as roughly half of the countries formed before 1701 are found in Europe.

Figure 2.1: The Relationship between Continent and Date of Formation

GDP per Capita
Although its usefulness as a measurement of economic well-being and
development has been challenged by some economists, gross domestic product
(GDP) per capita, adjusted for purchasing power parity (PPP) has long been a
common independent variable in cross-country analyses, used to help explain
political characteristics such as democratization and political stability. There is
considerable reason to think that it would be an important indicator of legislature size
as well. Legislatures are not free and in a poorer country, the costs of paying a large
number of legislators, their staff, and other expenses such as travel costs may simply
be prohibitive. Hence, countries with higher GDPs per capita would tend to have
larger legislatures. Alternatively, it is possible that poorer countries would deal with
their more limited fiscal resources not by keeping the number of legislative seats
smaller, but by reducing the public resources available to legislators, especially for
maintaining a professional and permanent staff. The presence or absence of a
statistically significant relationship between GDP per capita and legislature size will
provide strong empirical evidence in favor of one of these explanations and against
the other. Dynamically, I hypothesize that countries with faster GDP per capita
growth will be more likely to see their legislature increase in size.

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46 David Harvie et al., "Economic Well-being and British Regions: The Problem with GDP per
47 Seymour Martin Lipset, "Some Social Requisites of Democracy: Economic Development and
Political Legitimacy," *The American Political Science Review* 53, no. 1 (1959); Adam Przeworski and
Organization* 13, no. 2 (1997); Robert MacCulloch, "The Impact of Income on the Taste for Revolt,"
The data used in the static analysis comes from the World Factbook, with figures in 2015 dollars,\textsuperscript{49} and the data for the dynamic analysis from the UNSD, with figures in 2005 dollars.\textsuperscript{50} Both data choices are based primarily on data completeness rather than any qualitative or methodological distinction. Of the four main providers of GDP per capita data (the World Factbook, the World Bank, the International Monetary Fund, and the UNSD), only the World Factbook provides current data on all 193 countries used in the static analysis. The UNSD on the other hand provides considerably more historical data on the countries in the dynamic analysis, going back as far as 1970. For the purposes of the static analysis, I use the logarithm of GDP per capita to match the transformation applied to both legislature size and population.

**Form of Government**

The relationship between the executive and legislative branches has been heavily studied in comparative politics and there is reason to believe it could be a significant influence on the size of a legislature. In countries where the executive is directly accountable to the legislature, as in a parliamentary system, the legislature may have significantly more influence over its organization than in a presidential system. Accordingly, legislators in such a system would be able to keep the legislature smaller in order to increase their individual roles in legislation and political debate. A plausible static hypothesis may be therefore that presidential

\textsuperscript{49} The only exceptions are North Korea and Somalia, whose figures are in 2014 dollars, the latest year available.

regimes have larger legislatures than other regime types, with the dynamic corollary being that countries that change from a parliamentary to a presidential system are more likely to see their legislature increase in size than those that do not change or change away from a presidential system.

As with electoral systems, classifying forms of government is difficult because of the diversity of constitutional and unwritten rules concerning the relationship between the executive and legislative branches, as well as considerable academic debate surrounding the role and influence of different offices in different governments. Additionally, unlike the criteria I used to define different electoral systems, the criteria used to distinguish between different forms of government have traditionally been based on highly subjective criteria about power relationships. There have been efforts to refine definitions of forms of government to make them more objective, but I have concluded that at least for this analysis, the use of certain subjective criteria based on power relationships is preferable to more objective alternatives. Readers interested in my exact reasoning for this decision should refer to Appendix A.

My categorization is briefly summarized in Table 2.3. In line with two of the most comprehensive regime categorizations available, Cheibub et al.’s (2010) and Elgie’s (2014), my three largest categories are presidential, semi-presidential, and parliamentary. Like Elgie but unlike Cheibub et al., I do not differentiate between democratic and nondemocratic countries. While I respect Cheibub et al.’s approach to

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classifying regimes based on how incumbents are removed from office, such a distinction simply is not relevant to this particular analysis.

I define a presidential system as a form of government in which the head of state and head of government are the same person and the government is not responsible to the legislature. Unconventionally, this category is structured such that absolute monarchies, countries where the authority of the hereditary monarch is unconstrained, such as Saudi Arabia or Brunei, are included in it. In these countries, the monarchs function as both heads of state and heads of government and their relationship to the legislature is similarly independent.

Semi-presidential systems are those in which the heads of state and government are separate, both hold substantial executive authority, and the government is responsible to the legislature. Executive monarchies, a neologism which I define as monarchies where the monarch retains significant executive (and possibly also legislative) authority, but nonetheless shares power with a government the legislature can remove, are part of this category. Whether typically classified as democratic (e.g. Monaco and Liechtenstein) or undemocratic (e.g. Morocco and Jordan), these countries, like other conventionally semi-presidential countries, have active heads of state clearly separate from their heads of government.

Parliamentary systems, like semi-presidential ones, have a separate head of state and head of government, but the head of state has little or no power to direct government functions. Heads of state in parliamentary countries may nonetheless have significant nominal powers or sovereignty, as in a ceremonial monarch, or be

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52 José Cheibub et al., 69.
able to, in some circumstances, dismiss the government and appoint a new one without requiring any motion from the legislature, as happened during the Australian constitutional crisis in 1975, but do not have the same active role in governance that heads of state possess in semi-presidential countries.

As I have categorized them, there are sixty-eight presidential countries, thirty-nine semi-presidential countries, and sixty-eight parliamentary countries, consisting of 175 out of 193 countries. Of the remaining eighteen, ten are countries in which the head of state and head of government are the same office, the presidency, as in a presidential system, but either the government responsible to the legislature, as in a parliamentary system,\textsuperscript{53} or the president is elected for a fixed term by the legislature, but subsequently acts independently of the legislature, as in a presidential system.\textsuperscript{54}

Despite their significant differences, I classify these hybrid cases as a single category, “parliamentary-presidential.”

The final eight countries could conceivably be classified in the four primary categories, but I believe that their unique political organization and present status may make them significantly different from the other 185. Accordingly, I have devised two “exceptional” categories: one-party and transitional systems. One-party states are countries in which only one party or political movement has the formal legal right to form a government. Because of this distinct, explicit status afforded to the party in power, these countries often see a high level of entanglement between the structures of the party and the state. Currently, there are only six of these countries that match

\textsuperscript{53} These countries are Botswana, Kiribati, Marshall Islands, Nauru, and South Africa. See Robert Elgie.
\textsuperscript{54} These countries are Micronesia, Myanmar, San Marino, and Suriname. See ibid.
this description,\textsuperscript{55} but there were considerably more of these countries before the collapse of the Eastern Bloc. This definition differs slightly from Sartori’s, which is arguably the most common currently used, in that I do not hold that a country must outlaw all parties other than the ruling party to qualify as one-party states.\textsuperscript{56} One-party states, with China being a prominent example, have frequently permitted a number of nominally independent political parties to operate on the understanding that they will never be governing parties.\textsuperscript{57}

There may not be many one-party states remaining, but there is significant reason to believe that their distinctive political structure may be conducive to disproportionately massive legislatures.\textsuperscript{58} With the exception of Eritrea’s, the legislatures of the current one-party states draw heavily on the Leninist political model of the Soviet Union and have traditionally been characterized by infrequent sessions,\textsuperscript{59} limited political expertise among their members, and little political significance.\textsuperscript{60} These limits on members’ political experience and influence may significantly limit their ability to oppose increases to their legislature’s size.

\textit{\footnotesize\textsuperscript{55} These countries are China, Cuba, Eritrea, Laos, North Korea, and Vietnam.}\n\textit{\footnotesize\textsuperscript{56} Giovanni Sartori, \textit{Parties and Party Systems: A Framework for Analysis} (New York: Cambridge University Press, 1976), 112.}\n\textit{\footnotesize\textsuperscript{57} See Wen Shih, "Political Parties in Communist China," \textit{Asian Survey} 3, no. 3 (1963). China’s constitution also emphasizes that the government is based on a “system of multi-party cooperation and political consultation led by the Communist Party of China.” Hence China (at least formally) allows independent parties while mandating that only the Communist Party can form a government. See “Constitution of the People’s Republic of China,” State Council of the People’s Republic of China, \textit{http://english.gov.cn/archive/laws_regulations/2014/08/23/content_281474982987458.htm}, preamble.}\n\textit{\footnotesize\textsuperscript{58} Stigler observed that the “legislatures of communist countries … are often huge.” See George J. Stigler, 21.}\n\textit{\footnotesize\textsuperscript{59} For example, Cuba’s National Assembly of People’s Power meets for only three or three-and-a-half days at a time twice a year. See Archibald R. M. Ritter, "The Organs of People's Power and the Communist Party: The Nature of Cuban Democracy," in \textit{Cuba: Twenty-Five Years of Revolution, 1959-1984}, ed. Sandor Halebsky and John M. Kirk (New York: Praeger, 1985).}\n\textit{\footnotesize\textsuperscript{60} Daniel N. Nelson, "Editor's Introduction: Communist Legislatures and Communist Politics," \textit{Legislative Studies Quarterly} 5, no. 2 (1980): 161.}
these legislatures are by no means totally powerless, their central political function has traditionally been to symbolize (or at least create the impression of) close, democratic relationships between governments and their peoples. This legitimizing function may encourage one-party governments to keep their legislatures large in order to ensure that the ratio of legislators to constituents is as large as possible. Additionally, keeping the legislature large may also be a political strategy by party leaders to prevent legislators from cooperating and achieving individual prominence.

The final category, transitional systems, includes two countries that are presently administered by provisional governments pending the ratification and/or coming into effect of permanent constitutions: Libya and Thailand. While the small size of the category likely means that no meaningful conclusions will be drawn about them, they allow Libya and Thailand, which do not currently fit in any of the other five categories, to be included in the static analysis.

Table 2.3: Forms of Government

<table>
<thead>
<tr>
<th>Criterion</th>
<th>PP</th>
<th>Pres.</th>
<th>SP</th>
<th>Parl.</th>
<th>1P</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>United head of state and head of government</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Responsible government</strong></td>
<td>Yes, or head of state is elected by the legislature</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

---


62 A dash means that countries with that form of government may or may not have that characteristic. PP refers to parliamentary-presidential, Pres. presidential, SP semi-presidential, Parl. parliamentary, 1P one-party and T transitional.
For the static analysis, I rely primarily on the categorization first published online by Elgie in 2014. Apart from presidential, semi-presidential, and parliamentary systems, Elgie identifies several distinctive subtypes of presidential and parliamentary systems. I code the presidential subtypes as presidential and the parliamentary subtypes as parliamentary-presidential because they are roughly equivalent to those categories in my system. Three exceptional categories (monarchy, other, and transitional) have been largely sorted into the other categories based on political changes since the list’s publication in 2014 and definitional differences (e.g. the coding of absolute monarchies as presidential). Out of 193 countries, 141 are coded identically in Elgie’s and my systems. Explanations of each difference can be found in Appendix B.

I have chosen to not include form of government in the dynamic analysis because of there are few cases of regime change to test and inconsistencies exist between Bormann and Golder’s coding of regime types and mine. Bormann and Golder take their categorization of regime types from Cheibub et al., coding countries based on what their form of government was at the end of each year. As explained above, the distinction between semi-presidential and other regimes in my system is significantly different from theirs, making it impossible to draw any direct
connections between the static and dynamic analyses. Even if that was not an issue, there are very few cases of regime changes in Bormann and Golder’s data. In my abridged version of their dataset, there are only six cases of regime change versus 757 cases of regime continuation. Subsequent analyses incorporating more observations may be able to draw meaningful conclusions about a dynamic relationship between legislature size and form of government, but it unfortunately appears to be outside the scope of this thesis.

**Conclusion**

By analyzing all 193 UN member states and using six independent variables, this thesis’s statistical analysis, which is discussed at length in Chapter III, should be significantly more complete and thorough than previous studies of influences on legislature size, which have generally restricted themselves to studying democratic legislatures and the role of population. While each variable is a plausible influence on legislature size, existing studies on population’s role suggest that it will be the single most significant variable in the static analysis, with other variables acting as secondary but otherwise important predictors.

---

63 There are seven other cases where Bormann and Golder code a regime change to “military dictatorship,” indicating that the country was under a military government at the end of the election’s year. These countries are included in the count of “continuous” cases because in each, the regime type at the time of the election was the same as it was during the previous election.
III: Static and Dynamic Analyses

Introduction

As explained in Chapter II, the statistical analysis in this chapter has two components: a static analysis that uses relatively current data on each UN member state and a dynamic analysis that uses data from multiple points in time for 117 of these countries. The static analysis includes a total of seven independent variables (bicameralism, $\log_{10}$ (population), electoral system, continent, date of formation, $\log_{10}$ (GDP per capita), and form of government) and six dependent variables: $\log_{10}$ (Actual Lower House Size), $\log_{10}$ (Statutory Lower House Size), $\log_{10}$ (Actual Upper House Size), $\log_{10}$ (Statutory Upper House Size), $\log_{10}$ (Actual Legislature Size), and $\log_{10}$ (Statutory Legislature Size). As explained in Chapter I, statutory size is the number of full voting positions in the legislature as specified by law while actual size is the number those positions that are actually occupied. Both are equally valid definitions of a legislature’s size, but statutory size is more commonly used in practice. For each chamber, both figures are analyzed to see if there are any meaningful differences between them. Due to data limitations, the dynamic analysis only includes five independent variables (population growth, electoral system change, continent, date of formation, and GDP per capita growth) and one dependent variable, $\log_{10}$ (Actual Lower House Size).

64 Bicameralism is only used for the $\log_{10}$ (Actual Lower House Size) and $\log_{10}$ (Statutory Lower House Size) to see if the presence of a second legislative chamber has any influence on the size of the first.
Static Analysis

Summary Statistics

Table 3.1: Summary Statistics (Quantitative Variables, All Countries\textsuperscript{65})

<table>
<thead>
<tr>
<th>Variable</th>
<th>Minimum</th>
<th>Median</th>
<th>Mean</th>
<th>Maximum</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log10 (Actual Lower House Size)</td>
<td>1.146</td>
<td>2.137</td>
<td>2.117</td>
<td>3.470</td>
<td>0.414</td>
</tr>
<tr>
<td>Log10 (Statutory Lower House Size)</td>
<td>1.146</td>
<td>2.143</td>
<td>2.122</td>
<td>3.477</td>
<td>0.413</td>
</tr>
<tr>
<td>Log10 (Actual Legislature Size)</td>
<td>1.146</td>
<td>2.179</td>
<td>2.179</td>
<td>3.470</td>
<td>0.424</td>
</tr>
<tr>
<td>Log10 (Statutory Legislature Size)</td>
<td>1.146</td>
<td>2.179</td>
<td>2.184</td>
<td>3.477</td>
<td>0.423</td>
</tr>
<tr>
<td>Log10 (Population)</td>
<td>3.996</td>
<td>6.907</td>
<td>6.762</td>
<td>9.139</td>
<td>0.965</td>
</tr>
<tr>
<td>Log10 (GDP per Capita)</td>
<td>2.602</td>
<td>4.068</td>
<td>4.010</td>
<td>5.124</td>
<td>0.533</td>
</tr>
</tbody>
</table>

Table 3.2: Summary Statistics (Quantitative Variables, Bicameral Countries Only\textsuperscript{66})

<table>
<thead>
<tr>
<th>Variable</th>
<th>Minimum</th>
<th>Median</th>
<th>Mean</th>
<th>Maximum</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log10 (Actual Upper House Size)</td>
<td>1.041</td>
<td>1.819</td>
<td>1.793</td>
<td>2.903</td>
<td>0.367</td>
</tr>
<tr>
<td>Log10 (Statutory Upper House Size)</td>
<td>1.041</td>
<td>1.836</td>
<td>1.801</td>
<td>2.903</td>
<td>0.366</td>
</tr>
</tbody>
</table>

\textsuperscript{65} The number of observations is 193 for variables that refer to all countries.

\textsuperscript{66} The number of observations is 78 for variables that refer to only bicameral countries.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Minimum</th>
<th>Median</th>
<th>Mean</th>
<th>Maximum</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log10 (Population)</td>
<td>4.328</td>
<td>7.193</td>
<td>7.079</td>
<td>9.118</td>
<td>0.892</td>
</tr>
<tr>
<td>Log10 (GDP per Capita)</td>
<td>2.903</td>
<td>4.135</td>
<td>4.058</td>
<td>4.818</td>
<td>0.503</td>
</tr>
</tbody>
</table>

*Table 3.3: Summary Statistics (Categorical Variables)*

<table>
<thead>
<tr>
<th>Category</th>
<th>Variable</th>
<th>Number</th>
<th>Percentage</th>
<th>Number (Bicameral Only)</th>
<th>Percentage (Bicameral Only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unicameral</td>
<td>Bicameral?</td>
<td>115</td>
<td>59.6%</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Bicameral</td>
<td>Bicameral?</td>
<td>78</td>
<td>40.4%</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Indirectly Elected</td>
<td>Electoral System (Lower House)</td>
<td>1</td>
<td>0.5%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Unelected</td>
<td>Electoral System (Lower House)</td>
<td>7</td>
<td>3.6%</td>
<td>1</td>
<td>1.3%</td>
</tr>
<tr>
<td>Majoritarian</td>
<td>Electoral System (Lower House)</td>
<td>78</td>
<td>40.4%</td>
<td>36</td>
<td>46.2%</td>
</tr>
<tr>
<td>Proportional</td>
<td>Electoral System (Lower House)</td>
<td>76</td>
<td>39.4%</td>
<td>30</td>
<td>38.5%</td>
</tr>
<tr>
<td>Mixed</td>
<td>Electoral System (Lower House)</td>
<td>31</td>
<td>16.1%</td>
<td>11</td>
<td>14.1%</td>
</tr>
<tr>
<td>Category</td>
<td>Variable</td>
<td>Number</td>
<td>Percentage</td>
<td>Number (Bicameral Only)</td>
<td>Percentage (Bicameral Only)</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------------------</td>
<td>--------</td>
<td>------------</td>
<td>-------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Indirectly Elected</td>
<td>Electoral System (Upper House)</td>
<td>—</td>
<td>—</td>
<td>29</td>
<td>37.2%</td>
</tr>
<tr>
<td>Unelected</td>
<td>Electoral System (Upper House)</td>
<td>—</td>
<td>—</td>
<td>17</td>
<td>21.8%</td>
</tr>
<tr>
<td>Majoritarian</td>
<td>Electoral System (Upper House)</td>
<td>—</td>
<td>—</td>
<td>21</td>
<td>26.9%</td>
</tr>
<tr>
<td>Proportional</td>
<td>Electoral System (Upper House)</td>
<td>—</td>
<td>—</td>
<td>9</td>
<td>11.5%</td>
</tr>
<tr>
<td>Mixed</td>
<td>Electoral System (Upper House)</td>
<td>—</td>
<td>—</td>
<td>2</td>
<td>2.6%</td>
</tr>
<tr>
<td>Africa</td>
<td>Continent</td>
<td>54</td>
<td>28.0%</td>
<td>22</td>
<td>28.2%</td>
</tr>
<tr>
<td>Asia</td>
<td>Continent</td>
<td>47</td>
<td>24.4%</td>
<td>17</td>
<td>21.8%</td>
</tr>
<tr>
<td>Europe</td>
<td>Continent</td>
<td>43</td>
<td>22.3%</td>
<td>17</td>
<td>21.8%</td>
</tr>
<tr>
<td>North America</td>
<td>Continent</td>
<td>23</td>
<td>11.9%</td>
<td>13</td>
<td>16.7%</td>
</tr>
<tr>
<td>Oceania</td>
<td>Continent</td>
<td>14</td>
<td>7.3%</td>
<td>2</td>
<td>2.6%</td>
</tr>
<tr>
<td>South America</td>
<td>Continent</td>
<td>12</td>
<td>6.2%</td>
<td>7</td>
<td>9.0%</td>
</tr>
<tr>
<td>Before 1701</td>
<td>Date of Formation</td>
<td>22</td>
<td>11.4%</td>
<td>12</td>
<td>15.4%</td>
</tr>
<tr>
<td>Category</td>
<td>Variable</td>
<td>Number</td>
<td>Percentage</td>
<td>Number (Bicameral Only)</td>
<td>Percentage (Bicameral Only)</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------</td>
<td>--------</td>
<td>------------</td>
<td>-------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>1701-1900</td>
<td>Date of Formation</td>
<td>29</td>
<td>15.0%</td>
<td>15</td>
<td>19.2%</td>
</tr>
<tr>
<td>1901-1944</td>
<td>Date of Formation</td>
<td>20</td>
<td>10.4%</td>
<td>7</td>
<td>9.0%</td>
</tr>
<tr>
<td>1945-1989</td>
<td>Date of Formation</td>
<td>96</td>
<td>49.7%</td>
<td>34</td>
<td>43.6%</td>
</tr>
<tr>
<td>After 1989</td>
<td>Date of Formation</td>
<td>26</td>
<td>13.5%</td>
<td>10</td>
<td>12.8%</td>
</tr>
<tr>
<td>Presidential</td>
<td>Form of Government</td>
<td>68</td>
<td>35.2%</td>
<td>32</td>
<td>41.0%</td>
</tr>
<tr>
<td>Semi-presidential</td>
<td>Form of Government</td>
<td>39</td>
<td>20.2%</td>
<td>14</td>
<td>17.9%</td>
</tr>
<tr>
<td>Parliamentary</td>
<td>Form of Government</td>
<td>68</td>
<td>35.2%</td>
<td>29</td>
<td>37.2%</td>
</tr>
<tr>
<td>Parliamentary-presidential</td>
<td>Form of Government</td>
<td>10</td>
<td>5.2%</td>
<td>3</td>
<td>3.8%</td>
</tr>
<tr>
<td>One-party</td>
<td>Form of Government</td>
<td>6</td>
<td>3.1%</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Transitional</td>
<td>Form of Government</td>
<td>2</td>
<td>1.0%</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**Results**

Table 3.4 contains the results of ordinary least squares (OLS) regressions for all three measures of statutory legislature size in all 193 UN member states: lower house size, upper house size, and total legislature size. Due to space constraints, I cannot present the regression results for measures of actual size, which are very similar to the statutory results, in the same table, but readers interested in
comparing the two can view them side-by-side in Appendix C. For each dependent variable, the (1) model is a simple bivariate model with only population, the (2) model includes all available variables for that size measure, and the (3) model includes only variables with at least one coefficient statistically significant at the 5% level.

The measures of legislature size, along with the quantitative variables population and GDP per capita, are logarithmic. The coefficients should therefore be interpreted as components of this equation:

\[ S = 10^{a+b+c \ldots} \times P^x \times G^y \]

The intercept and coefficients for categorical variables like whether or not the chamber has a majoritarian electoral system are the series of variables that sum to the exponent of the 10 while \( x \) and \( y \) are the coefficients of the population \( (P) \) and GDP per capita \( (G) \) variables respectively.

Table 3.4: OLS Regressions for Statutory Measures of Legislature Size

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Log10 (Statutory Lower House Size)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.4637***</td>
<td>-0.1852</td>
<td>-0.3374**</td>
<td>-0.3938+</td>
<td>-0.7304+</td>
<td>-1.0499**</td>
<td>-0.4657***</td>
<td>-0.4185*</td>
<td>-0.30811*</td>
</tr>
<tr>
<td></td>
<td>(0.0953)</td>
<td>(0.2720)</td>
<td>(0.1290)</td>
<td>(0.2201)</td>
<td>(0.4061)</td>
<td>(0.3434)</td>
<td>(0.0970)</td>
<td>(0.2008)</td>
<td>(0.1371)</td>
</tr>
<tr>
<td>Log10 (Population)</td>
<td>0.3824***</td>
<td>0.3750***</td>
<td>0.3741***</td>
<td>0.3100***</td>
<td>0.2961***</td>
<td>0.3159***</td>
<td>0.3919***</td>
<td>0.3877***</td>
<td>0.3852***</td>
</tr>
<tr>
<td></td>
<td>(0.0140)</td>
<td>(0.0164)</td>
<td>(0.0150)</td>
<td>(0.0309)</td>
<td>(0.0367)</td>
<td>(0.0332)</td>
<td>(0.0142)</td>
<td>(0.0163)</td>
<td>(0.0159)</td>
</tr>
<tr>
<td>Bicameral?</td>
<td>-0.0228 (0.0262)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electoral System: Unelected</td>
<td>-0.1749</td>
<td></td>
<td></td>
<td>0.1389</td>
<td>0.1723*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------</td>
<td>---------</td>
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<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Majoritarian</strong></td>
<td>-0.1427</td>
<td>-0.0166</td>
<td>-0.0122</td>
<td>0.0856</td>
<td>0.0677</td>
<td>0.0623</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.1871)</td>
<td>(0.0411)</td>
<td>(0.0346)</td>
<td>(0.0770)</td>
<td>(0.0718)</td>
<td>(0.0367)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proportional</strong></td>
<td>-0.1376</td>
<td>0.1889</td>
<td>0.1981</td>
<td>0.1809</td>
<td>0.0975</td>
<td>0.0926</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.1827)</td>
<td>(0.0609)</td>
<td>(0.0525)</td>
<td>(0.1219)</td>
<td>(0.0896)</td>
<td>(0.0558)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>1945-1989</td>
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<td>-0.1422</td>
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<td>(0.0521)</td>
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<td>(0.0532)</td>
<td>(0.0515)</td>
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<td><strong>Log10 (GDP per Capita)</strong></td>
<td>-0.0031</td>
<td>0.1469</td>
<td>0.1625</td>
<td>0.0243</td>
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<tr>
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<td>(0.0666)</td>
<td>(0.0647)</td>
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<td><strong>Form of Government:</strong></td>
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<td>Semi-presidential</td>
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<td>0.0754</td>
<td>0.1016</td>
<td></td>
<td>0.0729</td>
<td>0.0705</td>
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<td>Parliamentary</td>
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<td>(0.0647)</td>
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<tr>
<td></td>
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<td>(2)</td>
<td>(3)</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
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<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Parliamentary-presidential</td>
<td>0.0367</td>
<td>0.0362</td>
<td>0.0781</td>
<td>0.1306*</td>
<td>0.1302*</td>
<td>0.0429</td>
<td>0.1133+</td>
<td>0.1121+</td>
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</tr>
<tr>
<td>One-party</td>
<td>(0.0608)</td>
<td>(0.0599)</td>
<td>(0.1341)</td>
<td>0.3560***</td>
<td>0.3833***</td>
<td>(0.1341)</td>
<td>0.3075***</td>
<td>0.2988***</td>
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<td>Transitional</td>
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<td>0.0278</td>
<td>(0.0692)</td>
<td>(0.0784)</td>
<td>(0.1198)</td>
<td>(0.1144)</td>
<td>-0.0654</td>
<td>(0.0745)</td>
<td>(0.0735)</td>
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<tr>
<td>Residual Standard Error</td>
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<td>0.1582</td>
<td>0.1567</td>
<td>0.2414</td>
<td>0.2051</td>
<td>0.2045</td>
<td>0.1898</td>
<td>0.1667</td>
<td>0.1665</td>
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<tr>
<td>Adjusted R²</td>
<td>0.7963</td>
<td>0.8533</td>
<td>0.856</td>
<td>0.565</td>
<td>0.6862</td>
<td>0.6879</td>
<td>0.7996</td>
<td>0.8445</td>
<td>0.8449</td>
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<tr>
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<td>193</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>193</td>
<td>193</td>
<td>193</td>
</tr>
</tbody>
</table>

Note: The dependent variable, one of three different measures of statutory legislature size, is identified at the top of each panel following an identifying letter A-C. Robust standard errors are in parentheses below each coefficient. All R² figures are statistically significant at the 5% level.67

+ Significant at the 10% level
* Significant at the 5% level
** Significant at the 1% level
*** Significant at the 0.1% level

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67 This format is largely based on Reza Baqir, 1331-2.
Discussion

The results for actual and statutory measures of legislature size are highly similar. In each of the three pairs of analyses (lower, upper, total), the coefficients and levels of statistical significance are virtually identical for each variable. However, the coefficients for the statutory analyses consistently had smaller absolute values than their actual counterparts. These differences are relatively small, as are the differences between statutory and actual size more generally, but consistent enough to perhaps merit further study.

In each model for each variable, population was the most significant and most consistent influence on legislature size, with statistically significant coefficients of roughly 0.375 for lower house size, 0.30 for upper houses, and 0.39 for the overall legislature, a relationship that held whether it was the only independent variable in the model or one of several. The absence of apparent confounding variables strengthens the earlier conclusions of researchers like Stigler (1976) by authoritatively establishing population’s uniquely important role in explaining and influencing the sizes of lower houses, upper houses, and legislatures. Additionally, although the empirical evidence does not conform with the specific coefficients of Taagepera and Shugart’s cube root law, these findings confirm that the relationship between population and legislature size is undoubtedly exponential rather than linear. Thus, the ratio of legislators to constituents will consistently tend to be smaller in larger countries, making legislators in large countries more likely to require large staffs to address the interests of constituents who will be significantly less likely to interact with their representatives.
With the exception of the bicameralism variable used in the lower house models, each variable had at least one statistically significant relationship with either upper house size or both lower house and total size. GDP per capita and electoral system were significant influences on upper house size, date of formation and form of government were significant influences on lower house size and total size, and continent was a significant influence on all three measures. Almost every one of the statistically significant coefficients had an absolute value greater than 0.1, signifying a difference equal to a factor of roughly 1.25, a tremendous impact on the size of a chamber or legislature.

Although GDP per capita was a statistically significant influence on the size of the upper house, this was not the case for the other measures. While it seems intuitive that the fiscal costs of maintaining a legislature would lead poorer countries to design comparatively smaller legislatures than their wealthier counterparts, this does not seem to be the case, at least with the lower house and overall composition of the legislature. There are at least three plausible explanations why lower house and overall size would be largely independent of GDP per capita. First, the political demand for a larger legislature may outweigh fiscal concerns and poorer countries may accordingly spend larger shares of their budgets on legislative costs. Second, poorer countries may be able to afford large legislatures by significantly reducing legislative costs, such as by paying legislators low wages or employing little to no support staff. Finally, legislative costs may be so low in general that even for a relatively poor country, the cost is relatively negligible. Compared with lower houses, which largely determine the total number of members in a legislature, upper houses
may be significantly more expensive and less important for representative purposes, making their size more closely related to GDP per capita.

Unfortunately, the fiscal costs of legislation have not been adequately surveyed, let alone studied and analyzed in any serious depth. Hence, assessing the validity of and relationships between these explanations will require significantly more research. Understanding which of these relationships are correct may have significant implications for understanding the fiscal politics of these countries and the political power of their legislatures. If the first explanation is true, legislative costs may be crowding out other expenditures in many countries and if the latter is true, the influence, expertise, and independence of many legislatures may be compromised by inadequate funding and resources. Either of these potentially critical issues would be closely tied to the size of the legislature and thus, the other factors influencing it.

Electoral system is another variable that one would expect to be at least somewhat related to legislature size, given that the latter is directly tied to the rules specified by the former. However, the differences between different electoral system categories with respect to lower house size were unambiguously insignificant. Some differences were observed with respect to upper house size, but these relationships appear to be largely the result of outlier countries with exceptionally large upper houses.\(^68\) This statistical independence suggests that the size and electoral system of a legislative chamber are selected independently of each other, despite the relatively

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\(^{68}\) For unelected upper houses, the outlier is the United Kingdom’s House of Lords and for proportional houses, it is Italy’s Senate. Both chambers are roughly two or more times larger than any other country in their electoral system category. The statistical significance of all differences between electoral system categories disappears when these two countries are excluded.
obvious connection between a chamber’s size and the proportionality of its composition.

Form of government was statistically significant for lower house size and total size, but contrary to my hypothesis, presidential countries had smaller legislatures than other countries and parliamentary countries were not statistically distinguishable. However, many of the categories I constructed that differed significantly from other classifications (semi-presidential, parliamentary-presidential, and one-party) had statistically significant relationships. Of these, the strongest by far was with the six one-party states. The one-party coefficient was roughly the size of the population coefficient (roughly 0.37-0.39) for lower house size, indicating that a one-party state would be expected to have, all else equal, a lower house over twice the size of a presidential country’s. This coefficient would be larger still had Eritrea, the only one of these countries to not have an explicitly Marxist-Leninist government, not been included in the category, which seems to further suggest that the political dynamics of traditional Leninist legislatures, such as short sessions, minimal resources, and minimal political influence, favor exceptionally large legislatures. Each of these features could potentially facilitate the growth of a legislature by making it cheaper to operate and reducing the influence of legislators’ objections to growing costs and their diminishing importance. Because none of these features are exclusive to one-party states, they may be associated with the historical development of large legislatures in other countries as well.

The results for date of formation seem to match my hypothesis fairly closely: countries in the before 1701 category tended to have significantly larger lower houses
and legislatures than countries that formed in subsequent periods, with the differences being even more pronounced for the latter measure. For both lower house and legislature size, the largest difference is between the before 1701 countries and those in the two last categories, which represent decolonization and subsequent independence movements, strongly suggesting, as hypothesized, that modern legislatures tend to be larger when their antecedents developed in premodern (i.e. before 1700) times.

Finally, statistically significant relationships were found between continent and each measure of legislature size, but the exact relationships varied from continent to continent. Some continents were statistically different from the intercept continent Africa for some measures and not for others, making any straightforward explanation of these results difficult to formulate. Asia had smaller lower houses and legislatures, North America’s legislatures were smaller across all three measures (especially upper house size, where the coefficients were roughly -0.3), and South America had smaller upper houses and lower houses, but there was no statistically significant relationship with overall legislature size. However, the most interesting result is perhaps the lack of any statistically significant relationships for Europe’s legislatures. Although many European legislatures are unusually large, their location ceases to become statistically significant once date of formation is controlled for. This suggests that relationships between continent and legislature size that remain significant may be better explained by lurking variables that have yet to be identified and further research will need to be done to identify them.
Dynamic Analysis

Summary Statistics

Table 3.5: Summary Statistics (Quantitative Variables)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Minimum</th>
<th>Median</th>
<th>Mean</th>
<th>Maximum</th>
<th>Standard Deviation</th>
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</thead>
<tbody>
<tr>
<td>Log10 (Actual Lower House Size)</td>
<td>1.041</td>
<td>2.176</td>
<td>2.093</td>
<td>2.827</td>
<td>0.451</td>
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<td>Population Growth (Percent)</td>
<td>-2.479</td>
<td>0.949</td>
<td>1.027</td>
<td>4.785</td>
<td>1.005</td>
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<td>GDP per Capita Growth (Percent)</td>
<td>-17.930</td>
<td>2.224</td>
<td>2.244</td>
<td>96.130</td>
<td>5.296</td>
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Table 3.6: Summary Statistics (Categorical Variables)

<table>
<thead>
<tr>
<th>Category</th>
<th>Variable</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Change in Size</td>
<td>Actual Lower House Size Change</td>
<td>644</td>
<td>84.4%</td>
</tr>
<tr>
<td>Decrease in Size</td>
<td>Actual Lower House Size Change</td>
<td>32</td>
<td>4.2%</td>
</tr>
<tr>
<td>Increase in Size</td>
<td>Actual Lower House Size Change</td>
<td>87</td>
<td>11.4%</td>
</tr>
<tr>
<td>No Electoral System Change</td>
<td>Electoral System Change</td>
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<td>96.6%</td>
</tr>
<tr>
<td>Majoritarian</td>
<td>Electoral System Change</td>
<td>3</td>
<td>0.4%</td>
</tr>
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</table>

Population growth is equal to the country’s population in the year of the election minus the population in the year before, divided by the population in that earlier year, and multiplied by 100. GDP per capita growth is calculated the same way using the GDP and population figures provided by the UNSD.

69 Population growth is equal to the country’s population in the year of the election minus the population in the year before, divided by the population in that earlier year, and multiplied by 100. GDP per capita growth is calculated the same way using the GDP and population figures provided by the UNSD.
<table>
<thead>
<tr>
<th>Category</th>
<th>Variable</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
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<td>Proportional</td>
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<td>1.2%</td>
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<tr>
<td>Mixed</td>
<td>Electoral System Change</td>
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<td>1.8%</td>
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<td>Africa</td>
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<tr>
<td>Asia</td>
<td>Continent</td>
<td>92</td>
<td>11.4%</td>
</tr>
<tr>
<td>Europe</td>
<td>Continent</td>
<td>287</td>
<td>38.3%</td>
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<tr>
<td>North America</td>
<td>Continent</td>
<td>157</td>
<td>20.6%</td>
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<td>Oceania</td>
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</tr>
<tr>
<td>South America</td>
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</tr>
<tr>
<td>Before 1701</td>
<td>Date of Formation</td>
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</tr>
<tr>
<td>1701-1900</td>
<td>Date of Formation</td>
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</tr>
<tr>
<td>1901-1944</td>
<td>Date of Formation</td>
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<td>1945-1989</td>
<td>Date of Formation</td>
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<td>After 1990</td>
<td>Date of Formation</td>
<td>55</td>
<td>7.2%</td>
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</table>

**Results**

The logistic regressions whose results are presented in Table 3.7 are based on whether or not a lower house will grow, contract, or remain the same size based on economic, social, and political changes over time. For each dependent variable, the left model
includes all available variables and the right model includes only variables with at least one coefficient statistically significant at the 5% level. For the purposes of this analysis, a “change” is defined as a shift between an “initial” election and a “successive” election of either at least five seats or five percent of the initial size. To qualify as “successive,” an election must occur during a calendar year no more than six years after the calendar year of the previous election in that country. I make this distinction to ensure that the analysis assesses the influence of changes taking place in the country roughly at the time of the election, which cannot be described with adequate accuracy when there is a gap between observations larger than the longest regular election cycle. When a country does have a gap of more than six years between two adjacent elections, the later election may not qualify as a successive election, but it may still be an initial election, used in comparisons with a successive election immediately following it.

In accordance with these specifications, some elections in Bormann and Golder (2013) have been omitted from this analysis because there was no other election in the same country either immediately before or immediately after it. Additional observations have been omitted because of data availability, leaving a total of 886 observations across 117 countries. Of these, 763 are successive

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70 I use these thresholds to exclude minor fluctuations of only a few seats in larger legislatures while also including significant changes in smaller legislatures. The “five seat” criterion is intended to include all changes that do not simply represent minor constituency changes or vacancies while the “five percent” criterion includes changes that, by virtue of the small size of the legislatures they took place in, would not be included by the first criterion.

71 Because the UNSD’s GDP data only goes back to 1970, the earliest year GDP per capita growth can be calculated is 1971.
Thus, the number of changes (or lack thereof) in legislature size analyzed in the logistic regressions is 763: eighty-seven increases, thirty-two decreases, and 644 with no change.

Each coefficient given in Table 3.7 is the natural logarithm of the odds ratio (or logit) for that variable. The odds ratio for each variable can be determined by calculating $e^x$, where $x$ is the coefficient. The probability $p$ for a given combination of variables can be calculated by taking the sum of their logits $y$ and solving for the quotient $p = e^y / (1 + e^y)$.

Table 3.7: Logistic Regression for Changes in Actual Lower House Size

<table>
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<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(1)</th>
<th>(2)</th>
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<th>(2)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>G: Increase in Size</td>
<td>H: Decrease in Size</td>
<td>I: Change in Size</td>
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<td>(0.3550)</td>
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<td>1.1701</td>
<td>2.4269**</td>
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<td>-0.0336</td>
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72 Each country has exactly one initial election except for Comoros, Guatemala, Nigeria, Peru, Solomon Islands, and Thailand, which have two.
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Note: The dependent variable for each change in actual lower house size is identified at the top of each panel following an identifying letter G-I. Robust standard errors are in parentheses below each coefficient. All Chi-squared values are statistically significant at the 5% level.

* Significant at the 10% level
* Significant at the 5% level
** Significant at the 1% level
*** Significant at the 0.1% level
Discussion

Of the six independent variables used in this dynamic analysis, four had statistically significant relationships with at least one of the three independent variables: the size of the lower house, population growth, electoral system change, and continent. Of these, the fact that North American lower houses were less likely to contract their legislatures is the only one that lacks a relatively intuitive explanation. Of the remaining three relationships, only one directly corresponded to the static analysis: the finding that countries with larger population growth rates were more likely to see their lower houses increase in size. Although relatively small compared to the other statistically significant logits, its coefficient strongly suggests that significant population growth or other changes in the size of a legislature’s electorate can serve as impetuses for expanding a legislature and that in a country with a stagnant or declining population, there is far less political pressure to do so.

The tendency of larger legislatures to expand more often than smaller legislatures likely results from the fact that in a very small legislature, particularly one with fewer than fifty members, there is no such thing as a “minor fluctuation” in size. While an increase of five seats would represent less than 1% of the membership of the United Kingdom’s House of Commons, increasing the size of Micronesia’s Congress by even one seat would mean a 7% increase in size. Even though I designed the criteria that define a change in size to eliminate selection bias against smaller legislatures, the fact remains that under this classification system, the largest
legislatures can change their size minimally in percentage terms while the smallest legislatures cannot.

Electoral system was not related to lower house size in the static analysis, but the logits for electoral system change were the largest statistically significant coefficients in the increase and change regressions. Despite the strength of the relationships observed, the relatively small number of electoral system changes observed (twenty-six in total, equal to 3.4% of the observations) makes comparing different kinds of changes with any level of precision untenable with this data. Overall, the strongest suggestion these results make is that the easiest time to change the size of a legislature is when its electoral system is being modified, which appears to be an extremely uncommon situation, occurring on average once every twenty-nine election cycles.

Conclusion

The statistical analysis presented in this chapter aimed to assess population’s exponential relationship with different measures of legislature size, building on previous studies by incorporating every UN member state for the first time, and use additional variables to create the most predictive models of lower house size, upper house size, and total size ever developed. Each regression in the static analysis affirmed population’s central role in predicting legislature size while revealing many new statistically significant static and dynamic relationships, many of which will need to be further studied before educated conclusions can be made about them. What is certain is that population is not the only variable with consistent effects on legislature size in different countries. While the dynamic analysis yielded fewer of these
relationships than the static analysis in part because of data limitations that limited the number of changes that could be observed and variables that could be tested, it affirmed population’s influence on legislature size by finding a positive relationship between population growth and size increases. Additionally, while the electoral system of a chamber is not related to its size, we did find that changing the electoral system often, indeed usually results in the legislature changing in size: of the twenty-six electoral system changes observed, fourteen changed the size of the chamber.74

With these results established, Chapters IV and V will use historical evidence from the United States and the United Kingdom respectively to explicate how three of the variables from this chapter (population, date of formation, and form of government) can encourage a lower house to grow, with Chapter IV covering population and Chapter V date of formation and form of government, specifically the large size of lower houses in countries formed before 1701 and one-party states.

74 Defined, as in the dynamic analysis, as a difference of five seats or 5% of the chamber’s size.
IV: The American Model

Introduction

Although the United States is the third most populous country in the world, its lower house, the House of Representatives is, with 435 members, only the twenty-fifth largest lower house. While the House has become relatively small for a country with the US’s population, this was not always the case. Prior to the early twentieth century, its size steadily increased every ten years as Congress reapportioned the House to proportionally allocate its seats to the states.

During the Constitutional Convention in 1787, the size of what would become the House was one of the most hotly debated questions surrounding the structure of the country’s federal government. Many delegates believed that an overly-large legislature would behave more like a mob than a deliberative, legislative body: easily manipulated by skillful demagogues and effectively controlled by a small number of canny operators. Accordingly, the Constitution included a specific provision in the clause dedicated to the apportionment of the House (Art. I, § 2, cl. 3, the Apportionment Clause) that limited the representation of each state to no more than

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one representative per 30,000 residents\textsuperscript{76} if it had more than one representative.\textsuperscript{77} Originally, this limit was an even stricter one per 40,000 residents, but the provision was unanimously changed on the last day of the convention to one per 30,000 to appease the country’s smallest states, who had initially argued that their interests could not be protected unless every state had equal representation in Congress.\textsuperscript{78}

Initially, the House’s apportionment would be set by the Constitution (an apportionment based largely on guesswork),\textsuperscript{79} but changes to the apportionment would be subsequently enacted by Congress based on the admission of new states and changes in population as determined by a decennial census. The Constitution went into effect in 1788 and the first Congress, comprising representatives from the eleven states\textsuperscript{80} that had ratified the Constitution, commenced on 4 March 1789.

Before the Fourteenth Census was conducted in 1920, these reapportionments steadily increased the statutory size of the House from 59 in 1789 to 435 in 1913. While the admission of new states provided increased

\textsuperscript{76} The Apportionment Clause provided that the apportionment population of each state would exclude “Indians not taxed” and include only three fifths of the enslaved population, a compromise that attracted relatively little controversy during the Convention. This “three fifths” provision was abolished in the 1860s and since 1873, all permanent residents of the United States have been counted equally. See Randolph Harrison, "Compromises of the Constitution," in \textit{Genesis and Birth of the Federal Constitution}, ed. J. A. C. Chandler (New York: The Macmillan Company, 1924), 293. When referring to the United States’ population prior to 1873, this chapter uses the apportionment population for the sake of brevity.

\textsuperscript{77} Every state was entitled to at least one representative regardless of its population. Hence, a state with an apportionment population of 10,000 would be entitled to one representative while a state with 50,000 could not have two.


\textsuperscript{80} North Carolina and Rhode Island subsequently ratified the Constitution in 1789 and 1790 respectively.
term, the decennial reapportionments produced the bulk of this growth in three
distinct phases. During the first phase, lasting from 1789 to 1843, the House grew
rapidly thanks to the use of a quota-based apportionment system, increasing from 59
to 242 in 1837. During the second phase, from 1843 to 1873, efforts to permanently
fix the size of the House slowed but did not stop its growth. After an initial decrease
to 223 in 1843, it reached 243 in 1867. During the third phase, from 1873 to 1913, the
fixed size of the House was increased during every reapportionment to prevent the
states with the least population growth from losing seats in Congress. Generally,
during these “growth phases,” the statutory size of Congress was reasonably close to,
but noticeably greater than its “predicted size,” the expected statutory lower house
size of a country with the US’s population, as calculated from the results of Chapter
III.81

However, this growth abruptly halted in 1921 when Congress failed to pass a
reapportionment based on the Fourteenth Census, beginning a fourth phase. Since
1929, the House has been reapportioned automatically based on a fixed size of 435,
holding its statutory size at an arbitrary figure while its predicted size steadily
outpaces it. In this chapter, I theorize that the House’s trajectory is applicable to a
significant number of countries and helps explain the exponential relationship
between population and lower house size. In its general form, the American Model of
lower house size holds that population-based apportionment methods tend to increase
the size of a lower house roughly in line with its predicted size during one or more
“growth phases” until eventually, opposition to further increases becomes common

\[ S = 10^{-0.4637} \cdot P^{0.3824} \]

where \( S \) is statutory lower house size and \( P \) is apportionment population, is
the estimated statutory size of a lower house ceteris paribus. See Regression B(1), Table 3.4.
enough to fix the chamber’s size, although there may be minor fluctuations during this “stagnation phase.” As summarized above, I believe that the House experienced three distinct growth phases and one stagnation phase that continues into the present. These phases are illustrated in Figure 4.1.

I begin by discussing each of the three growth phases and the reasons why the size of the House continued to increase during each of them. Subsequently, I discuss why its size was permanently fixed at 435 in the 1920s and why it has not increased since.

Figure 4.1: The Size of the House since 1789

The Growth Phases, 1789-1921

Phase 1: Rapid Growth, 1789-1843

When it initially convened on 4 March 1789, the House had only 59 members. By 1833, less than fifty years later, its statutory size had quadrupled to 240, ultimately peaking at 242 between the 26 January 1837 swearing-in of Isaac Crary, Michigan’s first representative and 4 March 1843, when a new 223-member House took office as apportioned by the Sixth Census Apportionment Act. This rapid growth in the size of the House reflected the United States’ rapid population growth and was facilitated by the apportionment method used at the time, the fixed ratio with discarded fractions method, commonly known as the Jefferson Method. Under the Jefferson Method, a fixed ratio of seats to residents was set (e.g. 1 to 30,000) and the apportionment population of each state was divided by that ratio. If the quotient was less than one, the state received exactly one seat, but if it was greater than one, the state would receive a number of seats equal to the quotient with all fractions disregarded (or discarded). Without a fixed legislature size, use of the Jefferson Method tended to result in progressively larger Houses, even though the ratio was periodically increased.

The first reapportionment, which ultimately increased the size of the House by almost two-thirds from 65 to 105, was a highly significant event in that it resulted in the first presidential veto in American history. It also established the use of the Jefferson Method in subsequent apportionments for the next fifty years, although

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83 An Act for the apportionment of Representatives among the several States according to the sixth census, 5 Stat. 491, (1842), United States.
84 Laurence F. Schmeckebier, 73-4.
certainly not without controversy. Initially, in the final weeks of 1791, the House had passed a bill to reapportion itself using the Jefferson Method and a ratio of 30,000, but the bill ultimately failed when the House refused to accept the amended version passed by the Senate, which had changed the ratio to 33,000. Subsequently, from January to March 1792, a second bill took shape. Initially similar to the first bill with a ratio of 30,000, the second bill was amended by the Senate to use an entirely different method. First, the total size of the House (120) was computed by dividing the total apportionment population by 30,000 and then ignoring the remainder. Seats were then assigned as in the Jefferson Method, but the remaining seats, in this case eight, were given to the states with the largest fractions, which would have been totally ignored under the Jefferson Method.86

This new bill eventually passed the House as well, but it became the first to ever be vetoed by a president on 5 April, when President George Washington concluded that the bill was unconstitutional, most obviously because the eight states that received additional representatives had more than one seat for every 30,000 residents in a clear violation of the Apportionment Clause.87 Subsequently, both houses passed a bill using the Jefferson Method and a ratio of 33,000, which was signed by Washington on 14 April.

The primary disagreement during the apportionment debate was not over whether or not the House should be enlarged but over how to balance two important concerns: degree of representation and fairness of representation. Most representatives favored expanding the House to the greatest extent possible to

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86 Ibid., 9-11.
87 Laurence F. Schmeckebier, 107-8.
maximize the representativeness of the chamber and make the House’s members as close to their constituents as possible under the Constitution, hence the initial insistence on the 30,000 ratio. On the other hand, the revisions to the first and second bills made by the Senate reflected a commitment to improving the fairness of the House’s proposal by minimizing the discarded fractions, which were commonly characterized as “unrepresented” fractions. The 33,000 ratio was ultimately able to pass both houses because it addressed both concerns satisfactorily: it allowed the House to be significantly expanded while keeping the remainders much smaller than they would under a 30,000 ratio.

Beginning with the Third Census Apportionment Act, which came into effect in 1813, the ratio used in the apportionment calculations was steadily increased, reaching 47,700 in 1833. Slowing the growth of the House and reducing the remainders appear to have been significant concerns, with the importance of the prior eventually supplanting that of the latter. 35,000, the ratio used in after the Third Census, resulted in the smallest average remainder of any ratio between 30,000 and 50,000 that was divisible by 1,000, but the subsequent two ratios do not seem to have been chosen based primarily on this idea, although the ratio chosen after the Fifth Census, 47,700, was the most optimal for any ratio between 43,000 and 50,000. The choice of these larger ratios over smaller ratios better suited to reducing the states’ remainders seems to indicate that slowing the growth of the House played a

88 Edmund J. James, 16.
89 Ibid., 13.
90 An Act for the apportionment of Representatives among the several States, according to the third enumeration, 2 Stat. 669, (1811), United States.
91 Calculations are based on apportionment populations in Laurence F. Schmeckebier, 227-8.
significant role in deciding the ratio, although a deeper historical analysis will be necessary to fully verify or disprove this hypothesis. Regardless of the specific reasons, the increases to the quotas slowed the House’s growth below the population growth rate and kept it from dramatically diverging from the predicted size.

**Phase 2: Slow Growth, 1843-1873**

During Phase 2, two distinct efforts, one in 1842 and 1850, were made to limit the size of the House, but neither was permanently successful. Congress initially increased the quota used in apportionment calculations to reduce the House’s size from 242 to 223, but the admission of five new states added ten new members by 1850. Subsequently, at the initiative of Representative Samuel Vinton of Ohio, the House adopted a new method that apportioned the House based on a fixed size of 233. While Vinton’s initial goal was to institute an automatic reapportionment mechanism that would end the decennial debates on the subject, Congress would continue to increase the House’s size until 1913 to prevent certain states, and in some cases all states, from losing representatives in the House.

Most sources agree that Congress reduced the House’s size by passing the Sixth Census Apportionment Act in 1842 because many senators and representatives believed it was becoming too large to legislate efficiently. The new Fixed Ratio

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92 Florida, Texas, Iowa, Wisconsin, and California. See periods 24-29 in Appendix D.
93 While 233 was the size the calculations were based around, the Congress that took office in 1853 had 234 members because California was given an additional seat until the next reapportionment by a separate statute. See *An Act supplementary to “An Act providing for the taking of the seventh and subsequent Censuses of the United States, and to fix the Number of the Members of the House of Representatives, and provide for the future Apportionment among the several States,” approved twenty-third May, eighteen hundred and fifty*, 10 Stat. 25, (1852), United States.
with Major Fractions method was very similar to the Jefferson Method in that it assigned seats to states based on a predetermined ratio, but unlike the old method, it gave each state with a remainder over one half an additional seat. While including these remainders would have resulted in a larger House had the same quota been used, a reduction was achieved by using a dramatically higher quota (70,680) than previous reapportionments. The new quota and shift to a new method kept the “unrepresented” remainders low, but reduced the size of the House from 242 to 223. Of the twenty-six states represented Twenty-eighth Congress beginning on 4 March 1843, fifteen had fewer representatives than they had had in the previous Congress.

However, this shift in methodology proved ephemeral when Congress changed apportionment methods again just eight years later. Dissatisfied with the “great waste of time” that surrounded every reapportionment as representatives from different states bickered for weeks over which ratio to use without respect to the size of the House, Vinton proposed an alternative method, generally known eponymously as the Vinton Method, that would calculate its ratio of residents to seats not by preassigning it but by dividing the total apportionment population by a fixed size. Subsequently, each state would receive a number of seats equal to its apportionment population divided by the ratio, with any leftover seats given to the states with the largest remainders.

95 Laurence F. Schmeckebier, 74. Senator Daniel Webster had advocated the recognition of these large remainders (also known as major fractions) in 1832 in the debate on the Fifth Census Apportionment Act, after it became clear that the use of the Jefferson Method would reduce the delegation of his home state of Massachusetts by one seat. While the Jefferson Method was ultimately used in that reapportionment, the perceived “injustice” of the method seems to have impelled the switch in methodology in 1842.
96 Ibid., 116.
97 Ibid., 74-5.
The Seventh Census Apportionment Act, enacted on 28 May 1850, set the size of the House at 233, equal to the then-current size of the House (231) plus the two seats that California ultimately received when it achieved statehood just months later. Although the new law was the first to establish a specific size for the House and provide an independent mechanism to apportion it (in this case via the Department of the Interior\textsuperscript{98}), it was never intended to totally prevent the size from changing. In addition to specifying the methodology that would be used to apportion the House, Section 25 provided that seats added for new states would still increase the size of the House, but only until the next reapportionment. Vinton himself did not discount the possibility that the statutory size could be adjusted at some point in the future, noting that, “if ... it should be thought by any that the number of the body was too large or too small, the burden of showing the necessity of the change would devolve on its advocates … the footing on which all laws … should stand.”\textsuperscript{99} Ultimately, the size fixed by Vinton was only used for one reapportionment: on 4 March 1862, Congress added eight additional members to the apportionment already prepared by the Department of the Interior, largely to prevent three of the country’s least populated (Minnesota, Vermont, and Rhode Island) from losing a third or half of their representation in the House, permanently increasing the chamber’s size to 241.\textsuperscript{100}

Both efforts to halt the House’s growth ultimately failed because Congress’s desire for a simple and regular reapportionment process was overwhelmed by a more

\textsuperscript{98} An Act providing for the taking of the seventh and subsequent Censuses of the United States, and to fix the Number of the Members of the House of Representatives, and provide for the future Apportionment among the several States, 9 Stat. 428, (1850), United States, § 25.

\textsuperscript{99} Laurence F. Schmeckebier, 116.

\textsuperscript{100} An Act fixing the Number of the House of Representatives from and after the third March, eighteen hundred and sixty-three, 12 Stat. 353, (1862), United States. Interestingly, this act specifies explicitly which eight states are to receive additional members.
powerful force: the self-interest of each state and each representative. Fixing the size of the House permanently meant that states with slower population growth would have to lose seats to faster growing states. In effect, Vinton’s effort to end the decennial debates on reapportionment had merely shifted their focus from quotas to what size to fix. Hence, the size of the House slowly grew over the course of Phase 2 and set the stage for the rapid growth of Phase 3.

Phase 3: No State Loses a Seat, 1873-1921

For the next five reapportionments, Congress continued to allocate seats in the House based on a fixed size, using the Vinton Method until 1903 and the more complicated Willcox Method in 1913,\textsuperscript{101} but in contrast to Vinton’s original intent and the modest increase following the 1860 census, each reapportionment increased the size of the House by at least twenty seats, increasing the House’s size from 243 in 1867, its peak during Phase 2 after the admission of Nebraska, to 435 in 1913, when the Thirteenth Census Apportionment Act\textsuperscript{102} took effect. These rapid increases occurred because a new norm took hold in the House: the principle that no state

\textsuperscript{101} The Vinton Method was unpopular, particularly with professional mathematicians, because it could lead to paradoxical apportionments where, under certain circumstances, a state could lose a member if the size of the House was increased, a situation called the Alabama paradox. Accordingly, the debate over the reapportionment following the 1910 Census resulted the adoption of the method of major fractions, or Willcox Method, developed by Walter Willcox, a Cornell University statistician and demographer who had served as chief statistician for the 1900 Census. The new method could be used to, given a specific final size, return an apportionment such that the absolute differences in the representatives/constituent ratios of different states were as small as possible. Willcox’s method was the most mathematically rigorous and complicated ever used to reapportion the House at that time, although the method’s results were usually within a few seats of the Vinton Method’s. See Laurence F. Schmeckebier, 13, 75.

\textsuperscript{102} An Act for the apportionment of Representatives in Congress among the several States under the Thirteenth Census, 37 Stat. 13, (1911), United States.
should lose representation as a consequence of reapportionment. Thus, even with a “fixed size” methodology, reapportionments tended to increase the House’s size.

In 1872, Congress passed a new apportionment act that increased the size of the House to 283, an increase of forty members, while a supplemental act increased it further to 292.103 This was the smallest possible size using the Vinton Method that would prevent any state from losing a seat in the House. Because the Vinton Method apportioned seats roughly in proportion to each state’s share of the country’s total population, following this principle meant that the state with the least population growth (i.e. the state that saw its share of the national population decrease the most) effectively determined what the new size of the House would be.104 In addition to basing the sizes they fixed on this principle, the 1872 reapportionment and the four that followed it specified which states would receive which seats, voiding the automatic reapportionment mechanism devised by Vinton just twenty years earlier. Accordingly, any change in the allocation of seats in the House would require a new piece of legislation, meaning that a legislative impasse could potentially keep the House at its current apportionment indefinitely.

While the reapportionments enacted during this period continually increased the size of the House to prevent states from losing seats, these increases did not happen without controversy and were not always large enough to prevent all seat losses. In 1913, New Mexico, which had only achieved statehood a year earlier, lost

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103 An Act for the Apportionment of Representatives to Congress among the several States according to the ninth Census, 17 Stat. 28, (1872), United States; An Act supplemental to an Act entitled "An Act for the Apportionment of Representatives to Congress among the several States according to the ninth Census", 17 Stat. 192, (1872), United States.
104 Laurence F. Schmeckebier, 230.
one of the two seats it had earlier been given by statute and in 1883, three states lost one seat each: Maine, New Hampshire and Vermont. As with the ratio changes under the first reapportionments, the 1883 losses appear to have been permitted so that the increase would be politically palatable to a voting majority in both houses of Congress. The House voted for a size of 325 on 17 February 1882, but as calculated using the Vinton Method, the size of the House would have to be 341 for Maine to retain its fifth seat, 354 for New Hampshire to retain its third, and 365 for Vermont to retain its third.105

The length of the debate over the bill and the number of different sizes proposed indicate how much disagreement existed over the issue. The issue took up the better part of six legislative days in the House from 8 February to 17 February and at least ten different sizes were proposed: 294, 307, 316, 319, 320 (the initial proposal), 321, 322, 324, 325, and 365.106 Representative John Sherwin of Illinois, the Democrat who proposed the 325 figure, argued that his figure was the fairest among similar figures because the number of members it added would be distributed between Democratic and Republican states more equally than the alternatives.107 The proposal for 365 came, perhaps unsurprisingly, from a representative from Vermont, Charles Joyce, who saw the initial proposal for a House of 320 members as a “scheme to rob, actually rob, five States in this Union of a fair and just proportion of representation upon this floor and in the electoral colleges.”108 Joyce’s arguments do not seem to have been very persuasive and he ultimately withdrew his amendment

105 Calculations based on the apportionment populations in ibid.
107 Ibid., 1175.
108 Ibid., 1170.
shortly before the bill itself passed on 17 February, in light of the strong 162-104
majority that had passed Sherwin’s amendment the previous day.109

Although the five reapportionments from 1873 to 1913 were conducted using
relatively similar methodology and premises, the fact that debate on the subject
continued every ten years, in the case of the 1882 debate for six days, demonstrates
that reapportionment, and by extension the question of the House’s size, was never a
settled question during Phase 3. Representatives opposed size increases for a variety
of reasons, such as concerns over the cost of salaries and staff for additional members
and opposition to the increasing concentration of procedural and legislative power in
the chamber’s leadership and committees that the House’s growth had made
necessary.110 As the size of the House increased, these problems became more
pronounced and accordingly, so did the opposition. By 1921, this opposition was
sufficient to prevent an increase along the lines of the previous five and ultimately
end the decennial increases to the House’s size for good.

**Phase 4: The Size Is Fixed, 1921-1929**

**Overview**

From 1921 to 1928, a total of forty-two failed reapportionment bills were
introduced, although only a handful were actually voted on.111 The process of
reapportionment, which had appeared so consistent and regular over the last fifty
years, proved to be a rather controversial and divisive issue. The inability of the

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109 Ibid., 1235-6, 48-49.
111 Laurence F. Schmeckebier, 121.
House to agree on a new apportionment, especially as the census figures from 1920 grew increasingly outdated, stimulated interest in the possibility an automatic reapportionment, similar in principle to the system used in 1850 and 1860. With the methodology of the reapportionment and size of the House predetermined, there would be no further need bring either contentious subject up for debate again and no prospect of another decade without reapportionment. The first bill attempting to do so was recommitted in 1928, but a subsequent effort passed in 1929. This law effectively fixed the size of the House at 435 by specifying that unless Congress took action, the new apportionment would be based on the existing size.

In fact, as the 1882 debate showed, reapportionment had always been an intensely debated issue during that period, but during the 1920s, which I consider the beginning of the fourth and final phase in the history of the House’s size, opposition to any proposed increase was sufficient to rally a voting majority against multiple proposals. Of these, the most critical were the first two, both of which were introduced in 1921, soon after the results of the 1920 Census were released. On 18 January 1921, the House met to discuss a reapportionment bill, H.R. 14498, that was, like its immediate predecessors, based on the principle that no state should lose a single seat. Introduced by the chairman of the Census Committee, Isaac Siegel, it provided for a 483-member House, an increase of forty-eight seats. Although a large

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112 Ibid., 121-2; Samuel Peter Orth and Robert Eugene Cushman, American National Government (New York: F.S. Crofts & Co., 1931), 393; An Act to provide for the fifteenth and subsequent decennial censuses and to provide for the apportionment of Representatives in Congress, 46 Stat. 21, (1929), United States.

113 Notably, this was a lame-duck session. In the 2 November 1920 election, the Democrats, already in the minority, had only won 131 of the House’s 435 seats, losing over sixty to the Republicans. Hence, the members of the House debated the future of a chamber that many of them would be leaving after 4 March.
number of representatives spoke in favor of the increase, it was overwhelmingly rejected by the House when Henry Barbour’s proposed amendment to keep the size at 435 passed 198-77.\textsuperscript{114} After the bill was amended a second time to clarify the redistricting process, it effectively passed when James Aswell’s effort to recommit it to the Census Committee failed 45-271. However, the Senate declined to bring the bill to a vote before the new Congress began on 4 March 1921\textsuperscript{115} and thus the House was not reapportioned.

Nine months later on 14 October 1921, Siegel introduced a new bill, H.R. 7882, to reapportion the House based on a new size of 460, an increase significantly more palatable to many representatives that would allow every state except Missouri and Maine to retain its representation in the House. After the debate ended, Barbour again introduced an amendment to keep the House’s size at 435, but this effort was much less well received: the amendment initially resulted in a 126-126 tied vote and was ultimately rejected 123-140 in a second vote.\textsuperscript{116} However, before the bill itself could come to a full vote, Louis Fairfield moved for the bill to be recommitted to the Census Committee. The motion narrowly passed 146-142, effectively removing the 460 figure from further consideration and preventing reapportionment for another eight years.

In this section, I use the arguments presented in support of and in opposition to Siegel’s proposed increases to infer why a voting majority in both debates ultimately opposed increasing the House’s size in favor keeping the size at 435.

\textsuperscript{114} Congressional Record, 60.2, 1680, 2.
\textsuperscript{115} Origins and Development of Congress, 143.
\textsuperscript{116} Congressional Record, 61.6, 6340.
Notably, the intensity of the opposition came not only from concerns that would logically tend to increase as the House grew, such as legislative efficiency and the relative importance of individual members in a larger chamber, but also from concerns that were intensified by the specific political circumstances of the period, particularly opposition based on the cost of adding new members.

**The First Debate, 18-19 January 1921**

When he introduced the first bill, H.R. 14498, Siegel made three primary arguments in favor of increasing the House’s size to 483, which were generally echoed by the sixteen representatives¹¹⁷ (seven Democrats and nine Republicans including Siegel) who spoke in support of the bill. First, it “was a proper step in order that this representative body may be truly representative of the people,” namely by limiting the increase in the ratio of constituents per representative.¹¹⁸ Second, the existence of lower houses with more than 500 members in France, Italy, and the United Kingdom demonstrated that the House could still transact its business effectively with 483 members. Finally, any number smaller than 483 would necessitate taking seats away from or “reducing the representation” of one or more states.¹¹⁹ These states, such as Iowa, Kansas, Missouri, and Nebraska, tended to be the most rural, as significant migration from urban to rural areas had taken place

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¹¹⁷ Lists of all speakers and their positions during both debates are available in Appendix E.
¹¹⁸ *Congressional Record*, 60.2, 1627.
¹¹⁹ Ibid., 1627-8. Interestingly, as Siegel reported, the Census Committee also recommended the passage of a constitutional amendment to limit the House’s membership to a maximum of 500 in order to resolve the problem of the House’s size once and for all, a possible compromise measure to get a majority of the Committee to endorse the increase.
during the 1910s. If the House was kept at its present size, a total of eleven would lose at least one seat each.\footnote{Origins and Development of Congress, 143.}

However, none of these arguments seem to have resonated with the bill’s opponents, of whom twenty-seven (thirteen Democrats and fourteen Republicans) spoke during the debate. Speakers such as Hubert Stephens\footnote{Congressional Record, 60.2, 1638-9.} expressed skepticism that members of the House have difficulty ably representing a larger number of constituents, questioned the merits of comparing the national legislature of a federal state like the US with those of Europe’s unitary states, and noted that whether or not the size of the House was increased, rural states, including Stephens’s home state of Mississippi, would have a lower share of the voting power in a reapportioned House because seats were allocated proportionally.

The primary arguments made against the increase were based on the fiscal cost of forty-eight additional representatives, the reduction in legislative efficiency that would accompany any increase, and the inability of most representatives to have a meaningful legislative role in a large House. Barbour estimated that the annual expenditure incurred by the new members would be roughly $1,000,000, consisting mainly of salaries for both the members and their clerical staff and expense accounts for mileage and communication.\footnote{Ibid., 1635.} Additionally, there was insufficient space in the House Office Building for forty-eight additional members and the floor of the House lacked sufficient space to seat them, meaning that the increase would entail large capital expenditures to construct a new building and renovate the House chamber to

\begin{footnotes}
\item \footnotetext{120} Origins and Development of Congress, 143.
\item \footnotetext{121} Congressional Record, 60.2, 1638-9.
\item \footnotetext{122} Ibid., 1635.
\end{footnotes}
make space for new seating.\textsuperscript{123} However, as Champ Clark declared, the cost was, compared to the total cost of the federal government, relatively minimal: \textsuperscript{124} even had the combined costs of forty-eight members, a new House Office Building, and renovating the House chamber exceeded $5,000,000, a figure well above the estimates offered by the bill’s critics, it would have represented at most 0.1\% of federal expenditures for that year, which were estimated to be between five and six billion dollars annually during the 1920s.\textsuperscript{125}

Other members such as Andrew Montague believed that the House’s large size was already too large and that any further increase would only make it harder for legislation to pass.\textsuperscript{126} This argument that the House had become or would become “unwieldy” under the increase was used by several of the bill’s opponents, but does not appear to have been as popular as the cost argument. The final argument, and the most sparingly used, was that individual representatives had increasingly less legislative influence as the House grew due to fewer opportunities to participate in debate and slimmer chances to get membership in a meaningful committee. For example, Thaddeus Caraway made the case that “the present membership is so large that but few men can be heard on pending legislation,” giving fewer and fewer representatives an incentive to be present for floor debates\textsuperscript{127} and John Jones estimated that forty of the House’s sixty committees were totally pointless, arguing

\textsuperscript{123} Although, Barbour and other opponents of the increase didn’t state so explicitly, seating new members in the House chamber, which had been in use since 1857, had already proven a serious challenge. The chamber had been designed to seat even 435 members and its individual desks had to be removed in 1913 to make room for enough benches to seat every member. See Kenneth Bradshaw and David Pring, \textit{Parliament & Congress} (Austin: University of Texas Press, 1972), 128.

\textsuperscript{124} \textit{Congressional Record}, 60.2, 1644.

\textsuperscript{125} Ibid., 61.6: 6318.

\textsuperscript{126} Ibid., 60.2: 1632.

\textsuperscript{127} Ibid., 1649.
that the House’s large size had stuck many members, particularly new ones, with
demeaning tasks such as “departmental duties and other incidental things” rather than
real legislating, resulting in further apathy and disinterest. 128

Why were the arguments against increasing the House’s size so much more
effective than they were in previous years, sufficient to pass Barbour’s amendment to
keep the House at 435 members 198-77 and why was the cost argument such a
recurring concern with members? Undoubtedly the arguments that enlarging the
House would make it “unwieldy” and diminish the value of each member were
recurring issues that had been brought up in previous debates and would have been
more intense than in previous debates. Although supporters of the bill questioned
these claims, it seems plausible that this view would become more common as the
size of the House increased. The rapid growth between 1873 and 1913 had already
necessitated organizational changes such as strengthening committees, introducing
strict limits on floor debate, and centralizing control over proceedings in the House’s
leadership. 129 As members argued, there was ample reason to believe that further
increases would make these problems worse, not better.

Although those arguments would have resonated with many members, the
cost argument was particularly effective because it related to a very topical issue in
1920s politics, the national debt, that made members more sensitive to what they
perceived as unnecessary expenses than they otherwise would have been. Thanks
largely to military expenditures during World War I, the national debt had
dramatically increased from about three billion dollars in 1915 to a peak of over

128 Ibid., 1648.
twenty-seven billion in 1919.\textsuperscript{130} Both parties had accordingly run on fiscally conservative platforms in 1920, making many representatives unwilling to further grow federal spending, even if it would represent at most 0.1% of annual expenditures. Regardless of the actual scope of the expenditure, representatives were more fiscally conservative than they had been ten years earlier and less willing to accept the increase in spending that would accompany an increase in the House’s membership.

\textbf{The Second Debate, 14 October 1921}

With the importance of the cost issue in mind, Siegel introduced an alternative bill nine months later that would increase the House’s size to a lower figure, 460, that would be far more palatable to fiscal conservatives. Siegel argued that the existing House Office Building and floor of the House could accommodate offices and seats for the more modest increase of twenty-five additional members and even made the case that due to the rising amount of casework for World War I veterans, the annual cost of expanding the House (a rather optimistic $287,000) would actually less than the cost of keeping the existing size and hiring additional secretaries to deal with it (roughly $500,000).\textsuperscript{131}

The less ostentatious cost of the proposed increase (amounting to perhaps 0.01% of federal expenditures) led the eighteen opponents of the bill who spoke on the floor against it (seven Democrats and eleven Republicans) to emphasize the issues of “unwieldiness” and diminishing importance of individual legislators far more than


\textsuperscript{131} \textit{Congressional Record}, 61.6, 6309-10.
they did during the previous debate. Barbour for example, who had discussed the cost issue so comprehensively during the first debate, only briefly mentioned at the end of his remarks that “the people are demanding economy in public expenditures” and that “to incur this expense would be inconsistent with our pledges,” spending most of his speech arguing that there was no need for twenty-five new members and recounting arguments that expanding the House would eventually lead to “a condition under which the individual will count for little, under which the committees will be all-powerful, and under which a small compact organization can absolutely control the destinies of the House.”132 The cost issue had become, rather than a serious consideration, a relatively minor point and something for a smaller group of representatives to oppose on principle, not because it was the primary problem with the proposal.

While the 460 figure’s more conservative cost and less ostentatious expansion of the House was far more popular than the previously proposed 483 increase, there was still enough opposition to halt the bill from passing, albeit just barely. Opposition on the basis of cost and the damaging effects of an overly-large House on legislative efficiency and the importance of each member were not inflexible sources of animus towards size increases in 1921, but they remained significant enough to enough members to end the last credible prospect of a significant increase.

**Why 435?**

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132 Ibid., 6319.
If there is one conclusion we can draw from the lengthy debates over the size of the House that ultimately resulted in a chamber with a size permanently fixed at 435 members, it is that there is nothing special about the number 435. It is not the figure at which the House’s legislative efficiency is maximized, its fiscal costs are minimized, or its constituents are best represented. It is not and was not chosen because it best satisfies some set of moral standards. Instead, the reason the House was fixed at 435 rather than 440, 445, or 450 is mathematical happenstance: it happened to be the smallest size that would prevent any state from losing a seat in 1913 that it had been apportioned in 1903.

The reason the size did not increase any further and why the American Model includes a stagnation phase, is that support for increases tends to decrease as the size increases, meaning that they cannot continue indefinitely. Postwar fiscal conservatism, a factor not present during previous reapportionment debates, increased this opposition even further and it is possible that without it, the final fixing of the House’s size would not have occurred for another ten or twenty years. Together, concerns about the costs of a larger legislature and endemic concerns about “unwieldiness” and the diminution of individual legislators amidst the centralization of procedural control were intense enough to get a forty-eight-member increase rejected 199-77 and a twenty-five-member increase dismissed 146-144. This size, fixed because it happened to be the size of the House when further increases became politically unpalatable, has been fixed and automatically reapportioned for nearly
ninety years,¹³³ but has attracted minimal controversy and attention and seems unlikely to change.

**Subsequent Developments**

The 435 figure has proved incredibly resilient and all but unchanged for over a century, only temporarily increasing to 436 on 3 January 1959 and 437 on 21 August 1959, when members from the new states of Alaska and Hawaii respectively took their seats for the first time.¹³⁴ Nonetheless, it faces occasional criticism, most prominently from political scientists and pundits. Generally, they argue that a larger House is imperative to address two major issues in American congressional politics: malapportionment¹³⁵ and oversized districts. Malapportionment concerns the differences in constituent/representative ratios between states, which tend to be particularly pronounced in smaller states. After the 2000 Census for example, Montana had the same representation in the House as Wyoming despite having almost twice its population (905,000 versus 495,000).¹³⁶ Because these discrepancies

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¹³³ Since 1929, the only change to the reapportionment process has been the switch from the Willcox Method to the method of equal proportions or Huntington-Hill Method. Like the Willcox Method, the Huntington-Hill Method was mathematically intricate and calculated an apportionment based on a fixed size, but unlike the Willcox Method, it minimized the relative differences between the representatives/constituent ratios of different states rather than their absolute differences. It has been used in every apportionment since 1941, when Congress required its use by statute. Both methods are algebraically correct and free from inconsistencies or paradoxes, require an equal amount of calculation, and produce very similar results, but the Huntington-Hill Method was more popular with mathematicians at the time (and politicians as well), because it tended, by definition, to result in the “most equitable distribution among the states regardless of size.” See Laurence F. Schmeckebier, 21-2.

¹³⁴ An Act to provide for the admission of the State of Alaska into the Union, 72 Stat. 339, (1958), United States; An Act to provide for the admission of the State of Hawaii into the Union, 73 Stat. 4, (1959), United States.


tend to decrease as the size of the House increases, they believe that a larger House provides fairer representation than a smaller one.\(^{137}\)

Often mirroring the arguments used by proponents of expanding the House in the 1920s, modern critics of the House’s size often see in overly large districts the root of many political ills, including unresponsive representatives and entrenched incumbency. Comparing the ratio of constituents/representative to other countries (as Siegel and others did in 1921), some observers argue that there should be little surprise that local concerns are effectively unrepresented at the federal level.\(^{138}\) Were districts, smaller, not only would representatives be brought closer to the people, but competing for seats would be easier and cheaper, making races more competitive and representatives more accountable.\(^{139}\)

While these arguments make strong appeals to democratic values and political equality, the issue of the House’s size has generally been overshadowed by other populist proposals such as congressional term limits and campaign finance reform. Reapportionment is no longer the divisive, animating subject of debate it once was, especially as the precedents of an automatic system and a constant, fixed size become stronger with each passing decade. Even as the population expands, the 435 figure has, arbitrary as it is, become a strongly established norm itself and members of Congress have shown no interest in changing it.

\(^{137}\) Ibid., 100.
Conclusion

In the static analysis from Chapter III, population was the single largest predictor of a lower house’s size. In the 120 years it took the House of Representatives to grow from an initial size of 59 to 435, population growth was the main force behind every increase in the chamber’s statutory size. When the size of the House was set based on fixed ratios prior to 1853, a growing population almost always resulted in a larger House every decade, even as the ratios were steadily increased from 33,000 to a maximum of 70,680. After the Civil War, the population continued to grow by over twenty percent between reapportionments, but this growth was significantly uneven, with some states like California growing rapidly and others like Maine and Vermont growing slowly or not at all. At the same time, a voting majority of representatives came to favor reapportioning the House such that no state lost representation, necessitating further expansion of the legislature.

Buchanan and Tullock’s (1962) postulated that the “optimal size” of a lower house was the size such that the total cost of reaching agreement on legislation and ensuring that it was complied with were minimized and in a similar vein, Taagepera and Shugart (1989) argued that the sizes of lower houses tended to correspond with a “cube root law” because legislatures tend to be structured to minimize the communication channels its members have to monitor between each other and with their “politically active” constituents. In the United States, these considerations did not play a meaningful role in decisions to expand the House or

140 James M. Buchanan and Gordon Tullock, 215-6.
141 Rein Taagepera and Matthew Soberg Shugart, 179-81.
maintain its existing size. In fact, the size of the electorate was never seriously considered during the reapportionment process. Rather, the “apportionment population,” a figure that explicitly included children, noncitizens, women, and slaves, groups that have either never been able to vote in congressional elections or only received the right to vote decades or over a century after the first reapportionment bill passed in 1792. The size of the House was, until the aftermath of the 1920 Census, determined based on this figure and calculations derived from it, a mathematical abstraction of the country’s population rather than actual pressure exerted by the population. In the exact opposite of what Taagepera and Shugart would predict, the single largest electorate increase in American history, the Nineteenth Amendment, which granted full suffrage to women in 1920, was immediately followed not by widespread interest in enlarging the House but by legislative debates that eliminated the prospect doing so.

Overall, this case study indicates two major ways that population growth can lead to a larger lower house whether or not the country follows the American Model. First, in a country with a growing population, apportionment methods based on fixed ratios will tend to increase the size of a lower house over time even if the ratio is periodically increased. Second, when the apportionment method is based on a fixed size, differential growth rates and shifts in population can impel a legislature to increase its size to let underpopulated regions retain their seats after a reapportionment. Unfortunately, current and historical information on the prevalence of each of these methods has not been compiled. One plausible hypothesis is that many countries have followed a similar trajectory to the US, initially using fixed-
ratio-based methods of apportionment and fixing the size some time later. Some limited evidence for this exists for Latin America. According to a 1957 compilation, out of twenty Latin American countries, thirteen had lower houses or unicameral legislatures where the size was determined by a ratio. Of those thirteen, five now fix their lower houses’ sizes in their constitutions, one sets an effective ceiling by using a ratio calculated from the country’s total population, three set their sizes by statute, and only four continue to use a fixed ratio.

The history of reapportionment in the US also demonstrates that increases in size influenced by population growth cannot be indefinitely sustained. During the first reapportionments, the fixed ratios used were chosen not only to minimize the

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“unrepresented” remainders between states but also to prevent the size of the House from growing at an unreasonably rapid rate. As a chamber grows in size, multiple sources of dissatisfaction can manifest that increase opposition to further increases: concerns about legislative efficiency, belief that a larger legislature diminishes the importance of individual members and centralizes control in committees and the leadership, and hostility to seemingly useless expenditures. While such hostility manifested in earlier reapportionment debates, the figure 435 proved to be the limit at which a majority was unwilling to go further.

While the American Model provides plausible hypotheses for why a legislature would expand and then cease to expand, there are many questions about it we still do not have answers for. First and foremost, although the American Model may make sense as a general trajectory for the size of a legislature to follow, we do not know how many countries have followed the trajectory described in this chapter. Additional research will need to be done to see how many lower houses actually experienced reasonably consistent growth after their establishment followed by a continuous period of stagnation. It is possible that relatively few countries follow the “pure” version of the American Model and instead follow variants such as alternating growth and stagnation phases. In essence, the reasons a lower house’s size increases or stagnates in a specific period may be generalizable, but the timing of transitions to new periods may not be.

While the House has reached its size largely due to population growth and population movements, this has not been the case in other countries. As Chapter V explains, the British House of Commons is one of the world’s largest legislative
bodies because it reached a very large size in the sixteenth and seventeenth centuries largely by creating seats for wealthy patrons rather than increasing representation or redistributing seats. Although the Commons is set to shrink from 650 to 600 members in the next few years, decreases in size have proven very difficult in spite of the significant differences between the premodern conditions that produced such a large legislature and those of the present.
V: The British Model

Introduction

The lower house of Britain’s parliament, the House of Commons, is the third largest lower house in the world and the largest among multiparty states, with a statutory size of 650. The United Kingdom is by no means a small country, estimated to be the 21st largest by population, but the Commons is disproportionately massive: with an estimated population of roughly 65 million in 2015, the predicted size of the UK’s lower house is only 334.\textsuperscript{147} Whereas the US’s lower house ended up disproportionately small as a result of its growth history, the opposite has happened in the UK.

In this chapter, I theorize that certain elements of the UK’s trajectory are broadly applicable to other countries with dates of formation before 1701, explaining why these countries would have larger legislatures than countries that were formed later. In its generalized form, the British Model holds that premodern legislatures tended to reach large sizes more easily than modern legislatures due to two distinctive characteristics. First, their meetings tended to be poorly attended, meaning that even if a large number of people held membership in the legislature or a large number of constituencies had the right to representation in it, the number of people actually participating in the legislative process was much lower. Second, they were rarely in session. The Commons’ sessions typically ranged from several weeks to several

\textsuperscript{147}S = 10^{-0.4637} \times P^{0.3824}, \text{ where } S \text{ is statutory lower house size and } P \text{ is population, is the estimated statutory size of a lower house ceteris paribus. See Regression B(1), Table 3.4.}
months before 1660, but by the sixteenth century, it wasn’t uncommon for multiple years or even a decade to pass between sessions. Accordingly, the negative consequences of a large or growing size would have been less egregious to the members of a premodern legislature than in a modern one. The members would be part-time legislators and thus have far less interest in capping the chamber’s size than the members of the House of Representatives were in 1921. Notably, these characteristics are also hallmarks of Leninist legislatures and help explain their large size as well.

![Figure 5.1: The Size of the Commons since 1509](image)

Figure 5.1: The Size of the Commons since 1509

In a country following the British Model, the lower house reaches a large size under these premodern conditions and remains unusually large into the present. However, significant fluctuations may occur after the initial, premodern growth phase

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(Phase 1 in Figure 5.1). In the case of Britain, the number of seats in England became effectively fixed in 1679, marking the end of the first phase and the beginning of a long stagnation phase (Phase 2), but the size of the Commons nevertheless increased from 513 to at the beginning of the eighteenth century to 558 in 1708, following the union of the Kingdoms of England and Scotland, and again to 658 in 1802, when the Kingdom of Great Britain united with Ireland. The stagnation effectively ended in 1885, when an extensive redistricting process increased the size to 670. This 1885 redistribution of seats149 began the third and current phase, which has seen the number of parliamentary seats slowly increase over time. Nonetheless, the Commons is smaller than it was in the nineteenth century because the 1922 secession of Ireland reduced its size from 707 to 615. Over the course of this chapter, I will discuss each of these phases, explaining how the Commons grew so large to begin with, how its size remained stagnant amidst major electoral reforms and the elimination of hundreds of ancient constituencies in the nineteenth century, and why it continued to slowly grow despite already being so massive.

Before explaining these phases though, I must note that during each of them, the Commons’ size has been determined by the prevalence of three kinds of constituencies: university constituencies, county constituencies, and borough constituencies, and university constituencies. University constituencies were nongeographic constituencies whose electorates consisted of the alumni of one or more universities. They were introduced by James I (r. 1603-1625) for the 1604

parliament and at their peak in 1918, elected fifteen members to the Commons, but were abolished by the 1948 Representation of the People Act.\textsuperscript{150}

County constituencies originally consisted of entire counties that elected one or two members to parliament at large whereas borough constituencies consisted of one or more chartered towns called boroughs. Additionally, while every county in England, Ireland, Scotland, and Wales was represented in the Commons (barring some very technical exceptions), many chartered boroughs in England, including large cities like Birmingham and Manchester, were unrepresented as late as 1832. However, following a series of seat redistributions in the nineteenth and twentieth centuries, the distinction between county and borough constituencies became increasingly less important over time as both were divided and amalgamated into single-member constituencies with roughly equal populations. All three types of constituencies are referenced extensively in this chapter and often the addition of certain constituency types and the abolition of others has been a critical factor in determining the size of the Commons.

**Phase 1: Growth of the Commons under the Tudors and Stuarts, 1510-1679**

As the parliament of the Kingdom of England became more politically influential and institutionalized during the sixteenth and seventeenth centuries, the

The statutory size of the Commons grew considerably from 296 in 1510 to 513 in 1679, with most of this growth taking place in the sixteenth century under the Tudor monarchs Henry VIII (r. 1509-1547), Edward VI (r. 1547-1553), Mary I (r. 1553-1558), and Elizabeth I (r. 1558-1603). The size of the commons was increased in four different ways during these two centuries. First, four seats were added in 1604 for two “university constituencies,” in which the alumni of Cambridge and Oxford Universities elected their own representatives to parliament. Second, six seats were added by the granting of representation to three English counties: Monmouthshire in 1542, Cheshire in 1545, and Durham in 1679. Monmouthshire was a new county formed from the old Welsh Marches, while Cheshire and Durham previously had a semiautonomous palatinate status. Third, twenty-three Welsh seats were added in 1542 as part of Henry VIII’s administrative reforms in Wales, with a twenty-fourth seat added for the borough of Haverfordwest in 1547. Each of the new Welsh constituencies (twelve county constituencies and twelve borough constituencies) returned a single member and with the exception of Haverfordwest, each of the Welsh borough constituencies was a “districts of boroughs” in which every one of a county’s boroughs formed a single noncontiguous constituency.

151 From this point forward in this chapter, the statutory size of the Commons for a specific year is defined as the number of seats that were entitled to representation in the Commons for the entire duration of the last parliament held. For example, no parliament met in the year 1511, but there were 296 seats for the full duration of the parliament that met in 1509, making the size of the Commons in 1511 296. This rule is set forth mainly to simplify ambiguous and complicated situations such as uncertainty over when certain constituencies were created or the abolition of a constituency while parliament is in session.


154 Ibid., 87.
The final and by far the largest source of the increase was the enfranchisement of ninety-five new boroughs in England, almost all of which returned two members, nearly doubling the number of English borough seats in parliament from 222 to 405. Most of these constituencies were created by the issuing of charters to new boroughs, but some, notably during the reigns of James I (r. 1603-1625) and Charles I (r. 1625-1649), secured representation by petitioning to revive their “ancient rights” to seats in parliament.

In the 19th and early 20th centuries, most historians believed that the main reason monarchs and their councilors chose to create so many new boroughs was to pack parliament with supporters of the crown, diminishing the Commons’ power and independence. However, this theory has generally been discredited since the mid-20th century, with historians like Smith (1967) arguing that the new seats were demanded by local gentry, who could gain political influence in the Commons through patron-client relationships with their members. In effect, the growing political importance of parliament made having a voice in it increasingly attractive, leading to the greater demand for seats. Accordingly, by the turn of the seventeenth

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155 The borough Woodstock (also known as New Woodstock) was initially represented in Parliaments 12-14 (1553-1554), but was not represented again until 1571 (Parliament 19). Hence, the figures in Appendix F record two separate creations. For more information on Woodstock, see T. F. T. Baker, "New Woodstock 1509-1558," The History of Parliament Trust, http://www.historyofparliamentonline.org/volume/1509-1558/constituencies/new-woodstock; Alan Harding, "New Woodstock 1558-1603," The History of Parliament Trust, http://www.historyofparliamentonline.org/volume/1558-1603/constituencies/new-woodstock.


century, roughly four fifths of the Commons’ seats were held by members of the gentry.\textsuperscript{160}

Over time, both the monarchy and parliament became increasingly opposed to the creation of new constituencies in the seventeenth century under the Stuart monarchs, with the monarchy hostile to giving more corrupt seats to the gentry and the Commons asserting its right to determine its own membership. The new boroughs, as well as many existing ones, were easy for individual gentry patrons to control because they had minuscule electorates, often restricted to small corporations with special municipal status\textsuperscript{161} or otherwise extremely small relative to their total population.

In addition to these “close” boroughs, there were “rotten” boroughs, older constituencies that had retained their representation rights despite losing most of their population and economic importance. The presence of both types of “nomination” or “pocket” boroughs helped satisfy the gentry’s demand for seats, but over time, hostility towards these corrupt constituencies increased, slowing the creation of new constituencies after James I became King of England in 1603. The king himself became concerned that the size of the Commons had become “too great” and that many members were coming “from boroughs quite decayed,”\textsuperscript{162} and proactively

limited the enfranchisement of new boroughs, but he made no effort to disenfranchise any existing constituencies.

The growth of the Commons was also slowed and ultimately halted by opposition from the chamber itself. By 1679, the members of parliament had become increasingly assertive that it was their prerogative to determine who sat in the Commons. In the process, they effectively set a ceiling on the number of English seats\textsuperscript{163} at 513 and ended the Commons’ initial growth phase.

While this first phase eventually stopped, the Commons was able to reach a size that by modern standards, is extremely disproportionate to its population, let alone its minuscule electorate. According to the regression results from Chapter III, a lower house with 513 members would correspond with a total population of almost two hundred million in the present\textsuperscript{164} even though the total population of England and Wales would not reach even ten million until 1809.\textsuperscript{165} By modern standards, such a large legislature in such a small country would be extremely unusual, but these premodern parliaments were very different from most modern legislatures, resembling the extremely large but minimally active legislatures in one-party states more than a modern chamber like the House of Representatives.

Parliaments typically met for no longer than two or three months and were summoned by the monarch even less often than in previous centuries. The normal gap between parliaments was roughly three years by the early Tudor period, with gaps of

\begin{itemize}
\item \textsuperscript{163} F. W. Maitland, 289-90.
\item \textsuperscript{164} $S = 10^{-0.4637} \times P^{0.3824}$, where $S$ is statutory lower house size and $P$ is apportionment population, is the estimated statutory size of a lower house \textit{ceteris paribus}. Accordingly, $P = (S \times 10^{0.4637})^{1/0.3824}$. See Regression B(1) in Table 3.4.
\item \textsuperscript{165} B. R. Mitchell, 79.
\end{itemize}
ten years or longer not unheard of.\textsuperscript{166} Long, regular sessions would not become consistent until Charles II ascended the throne in 1660,\textsuperscript{167} meaning that prior to then, any internal opponents of expanding the Commons would be part-time legislators with much less to lose if the status of individual members diminished or the Commons became inefficient. Furthermore, short session times meant that even if serious opposition to increases existed, it would not have much time to materialize before the session ended or the parliament was dissolved.

Additionally, the Commons’ statutory size was significantly larger than the number of members who actually met and participated in the legislative process. Although estimating attendance is difficult, Smith (1999) concluded that typical attendance was well below fifty percent and that it would be extremely rare for more than 300 members to attend a session of the Commons.\textsuperscript{168} Reflecting and perhaps contributing to this reality, the Commons’ customary meeting place from 1547 to 1834, St. Stephen’s Chapel, could not comfortably seat more than 200 members at a time. With no more than 300 members actually attending sessions and even fewer participating in debates, the effective size of the Commons was much smaller than the statutory size suggests, reducing the impact of size increases on legislative efficiency and the ability of individual members to impact policy.

Together, the low frequency of parliamentary sessions and low attendance rates reduced pressure for the Commons to limit its size. Whereas cost was a major

\textsuperscript{168} David L. Smith, 24.
argument against increasing the size of the House of Representatives in the 1920s, the Commons was effectively a part-time legislature with negligible operating costs. Whereas concerns about legislative efficiency and the importance of the individual legislator helped keep the American House of Representatives at 435 members, low attendance and the small size of its meeting place made it easier for the Commons to function with a larger statutory size. The Commons could not and did not grow indefinitely without opposition to the creation of new borough constituencies, but the presence of a gentry demand for seats and institutional characteristics it largely inherited from its feudal origins allowed it to grow to a massive size by modern standards.

Incorporation of Scotland and Ireland, 1707-8 and 1801-2

Although the English and Welsh constituencies were effectively unchanged until 1832, the Commons increased in size from 513 in 1679 to 658 in 1802 through the political integration of two countries which had previously been in a dynastic union with the English crown: Scotland in 1707 and Ireland in 1801.169 Both countries were granted a certain number of seats in the new united parliament by the legislation that established the union, 45 in the case of Scotland170 and 100 in the case of Ireland.171 Prior to being integrated, each country had its own parliament several

169 Frederick George Marcham, 229; Thomas Pitt Taswell-Langmead, English Constitutional History: From the Teutonic Conquest to the Present Time, 4th ed. (London: Stevens & Haynes, 1890), 752.
times larger than the number of seats it received in Westminster, making the creation of new constituencies a rather convoluted and controversial affair in both cases.

Like the earliest English parliaments, Scotland’s parliament was unicameral and extremely inconsistent in its composition and size. As Terry (1905) explains, five different groups sat in the Scottish Parliament from 1603, when the Scottish king James VI inherited the Kingdom of England as James I, to 1707, but only three were consistently represented: nobles, barons of the shire (who represented county constituencies), and burgesses (who represented borough constituencies). The actual membership of parliament ranged from a low of 29 in 1641 to a high of 232 in 1705. A parliamentary union had been discussed intermittently since 1603, but it was not until 1707 that the parliaments of both countries passed Acts of Union. The reasons for the union are complex and still intensely debated, but it is certain that the relatively small number of seats granted to Scotland made the new apportionment unusually complicated. 45, the number of seats in the Commons granted to Scotland was an arbitrary figure set by the English without respect to the number of counties and boroughs they wanted represented. Rather, they appear to have insisted on the smallest possible increase both to limit the expansion of the Commons and the political power of non-English representatives.

The Scottish Parliament determined how the 45 seats were apportioned. As in England and Wales, a firm distinction was made between the representation of

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counties and the representation of boroughs (called burghs in Scotland). Thirty seats were assigned to Scotland’s thirty-three counties, twenty-seven that returned one member each and six paired together as “alternating” constituencies that would return one member to every other parliament, sending a total of three members to each parliament. The remaining fifteen seats were distributed among a total of sixty-six burghs: one to Edinburgh, Scotland’s capital, and fourteen to groupings of four or five burghs each, arrangements similar to the Welsh districts of boroughs.

The addition of Irish seats almost a century later was different in that the new constituencies were determined by the British rather than the Irish parliament, a process facilitated by the fact that the two parliaments had relatively similar structures and constituencies. Like the Parliament of Great Britain, the existing Parliament of Ireland was bicameral, divided into a House of Lords and 300-member House of Commons, and its Commons had university, county, and borough constituencies, with representatives from the boroughs making up a significant majority of members.

The British chose to maintain both the thirty-two county constituencies, which would continue to return two members each, and the university constituency for Dublin University, which would return one member. The remaining thirty-five seats (for a total of 100) were assigned to borough constituencies: two each for Dublin and Cork, Ireland’s largest and most prosperous cities, and one each to the country’s next thirty-one “most considerable cities, towns, and boroughs” selected based on their “tax

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175 Ibid., 276.
176 There were 150 two-member constituencies: Dublin University, thirty-two counties, eight county boroughs” with special medieval privileges that included both a town and a small rural area, and 109 boroughs. See Edith Mary Johnston-Liik, *History of the Irish Parliament, 1692-1800: Commons, Constituencies and Statutes*, vol. 2 (Belfast: Ulster Historical Foundation, 2002), 1.
177 "Act of Union with Ireland," 499.
value,” a figure calculated from both tax contributions and the number of households in each town.\(^{178}\) Dozens of other boroughs (almost all of which had patrons)\(^ {179}\) were totally disenfranchised and getting Ireland’s parliament to approve the Act of Union required paying their patrons enormous bribes.\(^ {180}\)

Perhaps the most intriguing aspect of the incorporation of Scotland and Ireland is not that they received more or fewer seats than they “deserved.” Rather, the size of the Commons had become very stable prior to 1707, as the creation of new English boroughs slowed decisively in the late sixteenth century before halting altogether in 1679 as both monarchs and members of parliament became wary of creating new constituencies and expanding the size of the Commons. Why would they consent to two dramatic expansions of the Commons if they had those concerns? If Scottish and Irish representatives had to be included in a new parliament, why not reduce the number of English seats to keep the Commons’ size constant?

Keeping the size constant was never seriously considered at either time because doing so would have required disenfranchising existing constituencies, most likely from nomination boroughs. This was simply not a practical proposal at a time when the principle that a borough could not be deprived of its representation had been established for centuries\(^ {181}\) and although sustained by blatantly corrupt practices, nomination boroughs were protected by the conviction that private property, including parliamentary representation, should not be seized by the government.\(^ {182}\)

\(^{179}\) Ibid., 91-2.
\(^{180}\) Ibid., 1: 202.
While both of these convictions were steadily eroding by the beginning of the eighteenth century, they were still significantly stronger than the desire to keep the size of the Commons constant, just as concerns about the “unwieldiness” of the House of Representatives did not override the principle that no state should lose a seat from a reapportionment in the late nineteenth and early twentieth centuries. Thus, at least at the time, the only palatable option was to further expand the Commons.

**Phase 2: Reform and Redistribution without Reduction, 1832-1867**

Over the course of the nineteenth and early twentieth centuries, parliament enacted significant reforms to expand the franchise and rationalize Britain’s electoral system. The first two of these, the 1832 and 1867 Reform Acts, abolished dozens of existing constituencies and decreased the representation of many others, but kept the size of the Commons at 658 as enough new constituencies were created to make up the difference. Decreasing the Commons’ size to 596 was considered early in the legislative process in 1832, but heavy opposition eventually forced the government to reduce the number of seats eliminated from underpopulated boroughs, keeping the size at 658. With many more conservative members unwilling to support the bill unless the proportion of English seats to non-English seats was as close as possible to what it had been in the “unreformed” Commons, keeping the size fixed even as hundreds of seats were redistributed was politically essential.

The 1832 (or First) Reform Act and its counterparts for Scotland and Ireland were in many respects very limited. Although they established uniform property requirements for all borough and county constituencies, the actual electorate
remained extremely small, equal to roughly one thirtieth of the total population and constituencies remained highly malapportioned, with half of the borough electors in England electing only thirty-four of the country’s 323 borough seats. Nonetheless, England’s constituencies underwent a dramatic overhaul, with constituencies created, reduced, or eliminated by a special boundary commission based on their tax contributions and populations. 57 of the 202 borough constituencies present in 1831 were abolished, 42 new borough constituencies were created, and 31 others had their existing membership reduced. Many counties were either split into multiple divisions or given an additional member. However, despite the extent of this overhaul, the size of the Commons remained constant at 658 and would remain at a similar size throughout the nineteenth century. England suffered a net loss of eighteen seats as a result of the disenfranchisements, but those eighteen seats were redistributed to Ireland, Scotland, and Wales.

The fact that the size of Parliament didn’t change as a result of the First Reform Act is intriguing because the regression results from Chapter II I suggest that a net decrease in the size of the Commons would be the most likely result of eliminating nomination boroughs. As mentioned earlier in this chapter, the size of the

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185 More specifically, borough populations were assessed based on numbers of households rather than actual headcounts. See D. J. Rossiter, R. J. Johnston, and C. J. Pattie, The Boundary Commissions: Redrawing the UK’s Map of Parliamentary Constituencies (Manchester: Manchester University Press, 1999), 23-5.

186 F. W. Maitland, 351.
Commons was exceptionally large by modern standards when the creation of new English constituencies stopped in 1679 and this was true in 1832 as well: the United Kingdom had a population of roughly twenty-five million in 1832, which at present would predict a lower house size of 230, whereas a 658-member Commons would correspond with a population of roughly four hundred million. While some seats would presumably be redistributed to underrepresented areas, particularly rapidly growing industrial centers like Birmingham and Manchester with no representation whatsoever, the elimination of so many seats without a significant population base would be expected to bring the statutory size of the Commons closer to the predicted size.

The size was kept constant mainly to increase the bill’s likelihood of passing. In the government’s initial proposal, the size of the Commons would have been reduced from 658 to 596, as the number of seats eliminated from underpopulated boroughs was significantly greater than the number that would be created from the enfranchisement of unrepresented large towns and the creation of new county constituencies. This feature of the bill was extremely unpopular because almost all of the reduction came from the elimination of English constituencies, meaning that in post-reform parliaments, England’s share of seats would be significantly reduced. As a consequence, the final bill created roughly twice as many new borough

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188 Michael Brock, 138-9.
constituencies as originally proposed, although a total of eighteen seats nonetheless shifted from England to the UK’s other countries.

In 1867, an additional Reform Act (as well as counterparts for Ireland and Scotland) was passed that roughly doubled the franchise while shifting a comparatively small number of seats from underpopulated boroughs to the counties and more populous boroughs.\(^{190}\) As in the case of the first Reform Act, neither increasing the franchise nor population growth changed the size of the Commons from 658.\(^{191}\)

As we concluded in Chapter IV that there was nothing magical about the number 435 in the 1920s House of Representatives, there was likewise nothing magical about 658 in the nineteenth century House of Commons. 658 was merely the established size of the Commons and keeping the reform acts viable meant limiting the number of constituencies eliminated in England to the smallest number possible. Both the 1832 and 1868 reforms were primarily designed to limit the most odious features of the “unreformed” electoral system in England (the overrepresentation of small, underpopulated towns and hamlets and the underrepresentation of large industrial cities) rather than resolve them altogether. It was these limits that kept the


\(^{191}\) Preceding and following the second Reform Act, slight reductions in size occurred due to the elimination of overtly corrupt boroughs by statute. A total of four English and two Irish boroughs (Sudbury, St. Albans, Beverley, Bridgwater, Sligo Borough, and Cashel) were disenfranchised this way between 1844 and 1870, meaning that for much of the period between 1832 and the 1885 redistribution of seats, the size of the Commons was somewhere between 652 and 658.
size of the Commons from increasing or decreasing as a result of these initial reforms, but more aggressive redistributions to come would commence a new growth phase.

**Phase 3: Growth since 1885**

Britain’s stagnation phase lasted roughly two hundred years, but finally ended in 1885, when an additional franchise expansion was accompanied by a third redistribution of seats that increased the size of the Commons from 652 to 670. The next reform act, passed in 1918, added another 37 seats to the Commons. Subsequent redistributions, conducted by permanent boundary commissions since the 1940s, have continued these increases. If we exclude the 92 seats the Commons lost when most of Ireland seceded from the UK in 1922, Britain’s four countries have gained a net 90 seats in the Commons since the passage of the 1885 Redistribution of Seats Act. England alone has seen its number of seats increase from 459 to 533. Apart from the secession of Ireland, there have been only two times when any country lost seats: in 1948, when university constituencies were abolished, and in 2005, when Scotland lost thirteen seats after parliament revised its redistricting process. Increases have resulted from the instructions the Commons has issued to independent Boundary Commissions which, as in 1832 and 1867, have determined the boundaries of the new constituencies.

In 1884, parliament gave the commissions lists of how many seats each borough and county would receive based on a fixed set of quotas. Boroughs with

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192 As in 1832 and 1867, there were three commissions in 1885 and 1918: one each for England/Wales, Ireland, and Scotland. Since 1944, there have been four: one each for England, Northern Ireland, Scotland, and Wales.
15,000 residents would lose all separate representation and be incorporated into other constituencies, those with 15,000 to 50,000 would have one seat, those with 50,000 to 165,000 would be a two-member constituency, and those with over 165,000 would have three members elected in single-member districts, with an additional member for each additional 50,000. The same quotas were used for the counties, but without any multi-member constituencies whatsoever. Counties with multiple members were divided into a series of districts called divisions, each electing a single member.

In practice, this meant that even though a large number of borough constituencies had to be abolished or lose seats, those seats would be redistributed to other boroughs or counties that had been comparatively underrepresented, ultimately resulting in a net increase of 18 seats across the UK’s four countries. The quotas still permitted significant population inequalities to exist between small towns and counties and heavily populated ones, but the rules parliament specified required more seats to be created for heavily populated areas than it abolished for underpopulated ones. As boroughs like Aylesbury and Evesham became incorporated into new county constituencies, Glasgow and Birmingham both saw their representation in the Commons more than double from three to seven members.

The rules made it difficult in practice for the redistribution to result in a net decrease of seats for any country. Notably, Ireland retained every one of its 103 seats despite seeing its population decline from 7.81 million in 1832 to 4.94 million in 193 A. Lawrence Lowell, 1, 199; D. J. Rossiter, R. J. Johnston, and C. J. Pattie, 38-9. The City of London was the exception, receiving two seats without regard to its population.

194 E.g. two boroughs with 15,001 and 49,999 inhabitants respectively would have both elected a single member.
1885. As many of its underpopulated borough constituencies were abolished, the additional seats were transferred to its thirty-two counties, all of which had just enough residents to have at least two county constituencies. The Commons chose a methodology that would minimize the disruption of existing borough boundaries by permitting significant deviation between constituency populations, but as a consequence, it was slightly easier, at least in England and Scotland, for a new constituency to gain a seat than it was for an older constituency to lose a seat. Subsequent boundary commissions have used more nuanced and complicated rules to draw constituency lines in Britain, but in each case, they have tended to result in significant, albeit relatively small given the Commons’ large size, increases.

For the 1918 redistribution, two important changes were made. First, the Boundary Commissions were given the power to allocate constituencies in their respective countries (as opposed to simply draw boundaries) and second, the instructions they were given, significantly more complicated than they had been in 1885, made significant variation in constituency size significantly less likely. While Ireland was allowed to retain all of its existing seats, the English/Welsh commission and the Scottish commission were given the same instructions, which specified several different quotas that resulted in average constituency populations of about 70,000, with relatively little difference between the three countries. When combined with the addition of several new university constituencies, each country

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197 Ibid., 58.
saw a net increase in its number of seats: twenty-seven for England, two for Ireland, two for Scotland, and six for Wales.

Since 1944, the four boundary commissions for England, Northern Ireland, Scotland, and Wales have been permanent rather than ad hoc organizations created to implement a specific reapportionment. The rules followed by the commissions have been set by statute and before 2005, they made it difficult in practice for any commission to reduce the number of seats elected by its country, even when it was overrepresented relative to others. Scotland and Wales, which had become significantly overrepresented as the population of England had grown faster than theirs, had minimum numbers of seats, keeping the populations of their constituencies smaller than England’s and preventing the size of the Commons from shrinking. However, the number of English seats was not fixed outside of a deliberately flexible rule that “the number of constituencies in Great Britain [should] not be substantially greater or less than” an arbitrary number set at 591 in 1947 and 613 in 1986, with Northern Ireland’s seats allocated separately. The presence of this rule prevented a dramatic increase in the number of English constituencies on the order of the 1870-1910 growth of the House of Representatives,

198 Whereas previous boundary reviews were conducted by three commissions, four were established by the 1944 House of Commons (Redistribution of Seats) Act, one each for England, Northern Ireland, Scotland, and Wales. Unlike the American reapportionment process, the British process is not automatic and the commissions’ recommendations must be initialized and implemented by statute. The actual time between periodic reviews has also depended on parliamentary action. Additionally, boundary commissions can issue special recommendations whenever an overpopulated constituency urgently needs to be divided. The most recent instance of this was when the county constituency Milton Keynes was divided into two new constituencies: Milton Keynes North East and Milton Keynes South West. See Robert Blackburn, The Electoral System in Britain (New York: St. Martin's Press, 1995), 119; D. J. Rossiter, R. J. Johnston, and C. J. Pattie, 121-4; Parliamentary Constituencies (England) (Miscellaneous Changes) Order 1990, 1990 No. 1307, (1990), United Kingdom.
199 Robert Blackburn, 116.
200 I.e. the total number of seats for England, Scotland, and Wales.
201 D. J. Rossiter, R. J. Johnston, and C. J. Pattie, 80, 122.
but without a hard ceiling on the size of the Commons, the number of English seats was able to steadily grow from 506 in 1950 to 533 in 2010 as existing seats were used to calculate the population quota for the next boundary review and additional seats added to further equalize the distribution of population between the new constituencies.²⁰²

Out of seven reviews conducted by the boundary commissions, including an immediate division of oversized English constituencies before the 1945 election, five have increased the size of the Commons, which has grown from 615 members in 1944 to 650 in 2010 (see Table 5.1). Apart from the fifth and most recent review, which saw Scotland lose thirteen seats after its minimum was abolished in 1998,²⁰³ none have resulted in more than three county and borough seats being eliminated.²⁰⁴

Table 5.1: Boundary Reviews since 1945

<table>
<thead>
<tr>
<th>Year Effected</th>
<th>Review</th>
<th>Countries Affected</th>
<th>Size of the Commons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1945</td>
<td>1944 Redistribution</td>
<td>England</td>
<td>640</td>
</tr>
<tr>
<td>1950</td>
<td>Initial</td>
<td>All</td>
<td>625</td>
</tr>
<tr>
<td>1955</td>
<td>First</td>
<td>All</td>
<td>630</td>
</tr>
<tr>
<td>1975</td>
<td>Second</td>
<td>All</td>
<td>635</td>
</tr>
<tr>
<td>1983</td>
<td>Third</td>
<td>All</td>
<td>650</td>
</tr>
<tr>
<td>1997</td>
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<td>2005</td>
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<td>Scotland</td>
<td>646</td>
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<tr>
<td>2010</td>
<td>Fifth</td>
<td>All but Scotland</td>
<td>650</td>
</tr>
</tbody>
</table>

²⁰² Elise Uberoi and Isobel White, "Constituency Boundary Reviews and the Number of MPs," (London: Commons Library, 2015).
²⁰⁴ Frederick George Marcham, 428. Most of the reduction from the Initial Review came from the abolition of the university constituencies.
As Britain’s Boundary Commissions have gone farther to equalize the population of the Commons’ constituencies, small but steady size increases became the typical outcome of the redistribution process. While the rules governing seat redistribution are significantly more complicated than those the House of Representatives has used to reapportion itself, key elements of the Boundary Commissions’ procedures seem conducive to size increases. Parliament may not have mandated specific total size increases for the Boundary Commissions to implement, but they did write rules that made it essentially impossible for any of Britain’s four countries to lose seats in the Commons. While Scotland and Wales had seat minimums and Northern Ireland a fixed number, England’s commission operated on the assumption that the number of seats they apportioned during a boundary review would be greater than or equal to the current number. By preventing certain parts of the UK from losing seats and basing England’s reapportionment on variable quotas, parliament ensured that the size of the Commons could only continue to increase.

**Conclusion and Aftermath**

However, barring any sudden legislative change, the next and Sixth Boundary Review (currently in progress at the time of this writing), will reduce the size of the Commons to its smallest since 1801: 600.\(^{205}\) Whereas most recent criticism of the House of Representatives’ present size has focused on how small it is, the exceptionally large size of the Commons has been frequently criticized for being too large. In the 1980s and 1990s, several bills were introduced to reduce the number of

\(^{205}\) Isobel White and Oonagh Gay, "Reducing the Size of the House of Commons " (London: Commons Library, 2010), 12.
constituencies by a specific number or set a hard ceiling, usually around 500 members, but unlike recent efforts to increase the size of the House, efforts to shrink the Commons have been successful.

In advance of the 2010 election, two of the UK’s three largest parties, the Conservatives and the Liberal Democrats, made manifesto promises to shrink the Commons in order to reduce wasteful government spending as part of a broader political reform platform, with the Conservatives favoring a 10% reduction (i.e. a reduction from 650 to 585 seats) and the Liberal Democrats favoring a reduction of 150 seats. When the two parties formed a coalition government after the election, it is not surprising that they introduced a new bill to fix the size of the Commons by statute and that the reduction was more modest than what either party had initially promised because the bill would place the jobs of many members at risk. Although the bill did pass in 2011, the size reduction has faced significant criticism, particularly after the subsequent election in 2015, when Prime Minister David Cameron declined to reopen debate on the issue. The opposition Labour Party strongly opposed it, claiming that their seats would be disproportionately abolished and equating the reduction to gerrymandering. The think-tank British Future said that by shrinking

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206 Robert Blackburn, 117.
208 Parliamentary Voting System and Constituencies Act 2011, 2011 c. 1, (2011), United Kingdom. The bill also included provisions for the holding of a referendum on changing the Commons’ electoral system.
the number of open seats, it would halt the growth in female and ethnic minority membership in the Commons.\(^{210}\)

While the reduction seems all but inevitable at this point, it is less certain whether the Commons will remain at a fixed size for a long period of time, as the House of Representatives has. Will the passing of a significant reduction in the size of the Commons make subsequent reductions possible in the future? A 600-member Commons is still almost twice the UK’s predicted size\(^ {211}\) and further reductions would bring the UK even closer to global norms. On the other hand, will differential population growth between British regions and countries encourage raising the 600 figure in the future to prevent seat losses? Perhaps only time will tell what the exact form the next and fourth phase will take.

This case study demonstrated that under certain conditions, a legislature can grow to a massive size without regard to its population. In the case of Britain, the meetings of the Commons, like those of modern one-party legislatures, tended to be brief and poorly attended in the sixteenth and seventeenth centuries. Both of these features reduced internal opposition to the growth of the Commons as monarchs created dozens of new borough constituencies to satisfy the gentry’s demand the seats, following additional increases when Scotland and Ireland were incorporated into the United Kingdom, size decreases were politically unfeasible even as the


\(^{211}\) "World Population Prospects". Based on a population of 64,715,810, the UK’s estimated population in July 2015.
franchise was expanded and constituency boundaries steadily overhauled. A modern legislature was thus endowed with a very premodern size.

While the British Model provides a plausible hypothesis for why countries formed before 1701 tend to have larger legislatures than those formed later, further research will need to be done to see how many countries it actually applies to and how similar their trajectories have been. Lower houses with premodern origins may prove to have much more stable sizes than the Commons, lacking a modern growth phase and showing no signs of a decrease. On the other hand, continuous fluctuation even into the present may be the norm rather than the exception.

The Commons has reached its present size in a very different way from the House, but there are a few critical similarities. First, deciding the size of both chambers has traditionally been a very elite-centered process. The general population has been considered only as a mathematical abstraction rather than a source of demand for additional representation, as earlier theorists have postulated. In fact, the only real evidence of popular opinion playing any role in determining legislature size from either case study is the routine invocation of public demand for “due economy” in the 1920s House of Representatives reapportionment debates and the fact that both the Conservatives and Liberal Democrats campaigned to shrink the Commons in 2010 as a populist appeal to get rid of unnecessary politicians. Second, size increases have occurred independently of what share of the population is actually involved in politics. While the size of the Commons was increased during extensions of the franchise in 1885 and 1918, the increase resulted from calculations based on total population, not the demands of the newly enfranchised.
VI: Conclusion

Stigler began his 1976 article on legislature sizes with a brief epigraph from *The Federalist*: “… no political problem is less susceptible to a precise solution than that which relates to the number most convenient for a representative legislature.” Politicians and political thinkers have realized for hundreds of years that the size of a legislature is not a trivial attribute. Rather, it is a fundamental feature of every legislature’s politics and organization, as critical for understanding how it operates as how its members are elected or how it passes legislation. Legislature size plays a large role in determining the legislature’s operating costs, its efficiency, and the individual influence of each member. Accordingly, we should not be surprised that the size question has been seriously and passionately debated by legislators, notably in the 1920s reapportionment debates highlighted in Chapter IV. It also affects what Buchanan and Tullock (1962) called the “degree of representation”: the larger a legislature, the smaller the number of constituents per representative.

Some scholars have attempted to explain why some legislatures are larger than others but their answers have been unsatisfactory, almost exclusively analyzing the influence of population and never using specific historical examples to support their theories. I hope that this thesis has, by including variables such as electoral system, GDP per capita, and date of formation in its statistical analysis and discussing the history of legislature size in the United States and the United Kingdom, corrected

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212 George J. Stigler, 17.
213 James M. Buchanan and Gordon Tullock, 214.
both of these deficiencies and that subsequent literature on legislature size will take these lessons to heart.

The statistical analysis presented in Chapters II and III affirmed the preeminent role of population in determining legislature size; identified a host of previously unknown statistically significant relationships, including the large size of legislatures in countries formed before 1701 and one-party states; and revealed that others were strikingly absent. Although the regressions I computed were able to estimate the size of a chamber or legislature with an unprecedentedly high degree of precision, the analysis raised more questions than I could answer. Some relationships, such as the large size of legislatures in countries formed before 1701 and one-party states, had relatively intuitive explanations. Others, such as the fact that African legislatures tended to be larger than Asian legislatures, did not. Most were unfortunately outside the scope of this thesis and further research will need to be done to reach any substantive conclusions about why they influence legislature size. I also hope that subsequent research will be able to draw on more complete data regarding the historical sizes of legislatures and produce more complete results.

Chapters IV and V elaborated on the regression results using historical evidence to explain the causal role of certain variables in determining legislature size. During periodic reapportionments of seats in the United States House of Representatives, population growth produced steady increases to the House’s size in multiple successive “growth phases,” first when Congress fixed the ratio of constituents per representative and subsequently when it progressively increased the House’s statutory size to prevent states with slower population growth from losing
seats to fast-growing states. In Britain on the other hand, the House of Commons grew over the course of the sixteenth and seventeenth centuries because the gentry demanded seats in it. Because it was a part-time, poorly attended legislature at that time, the Commons grew to over 500 members before its growth began to stagnate in the late seventeenth century. These characteristics were common to other premodern legislatures as well as the legislatures of one-party states and explain how they could become so large without internal opposition, which halted the growth of the House of Representatives in the 1920s.

While it is indisputable that the two chambers grew for different reasons and in different ways over time, there are some key similarities, many of which run counter to previous public choice theories about legislature size. Decisions relating to legislature size are far less democratic than the theories of Buchanan and Tullock (1962), Stigler (1976), and Taagepera and Shughart (1989) suggest. Public demand was undoubtedly an influence in extending the franchise and limiting population differences between constituencies, particularly in Britain, but the actual size of the legislature has been determined exclusively by politicians and their interests in both countries. Population correlates with legislature size primarily because seat apportionments and constituency boundaries are determined primarily based on population and population-based reapportionment methods tend to increase a legislature’s size over time unless the legislature chooses to permanently fix it. The extent of the franchise and engagement of the public with their representatives have, at least in these case studies, not influenced legislature size in a meaningful way.
However, the most striking conclusion is that even though the size of a national legislature is reasonably predictable based on a country’s population and other sociopolitical factors, it is not determined rationally. Politicians do not advocate size increases to rationally optimize the legislature’s efficiency or the quality of representation they provide. Instead, they often support increases to preserve their seats and maximize the representation of their part of the country, with the specific scope of the increase determined almost randomly based on the apportionment method in place. Thus, the patterns presented in this thesis should not be interpreted as normative or optimal. Determining the “optimal” size of a legislature is beyond the scope of this thesis and unfortunately, the answer to this question still proves extremely elusive. However, we now have a far better understanding of why some national legislatures are larger than others than we did previously. More research obviously needs to be done to see how broadly the processes and models I described in this thesis actually apply and identify new ones, but the question of legislature size has definitively been taken outside of the abstract, theoretical realm and treated as something that can be studied and explained empirically.
Acknowledgements

As with any project of this magnitude, countless people helped make this thesis possible. So much of yourself becomes tied into it that it’s tempting to thank everyone who has spurred your intellectual development or made your life easier or richer. Many people not listed here helped this thesis come together directly or indirectly, and I hope they know that their contributions are not unappreciated.

I thank my adviser, Sarah Wiliarty, for teaching me how to tackle a complex research project and always providing the most helpful feedback possible;

My proofreaders, Max Fong and Philip Katz, for finding my most egregious errors;

My mother and brother, for proving lay advice and putting up with my obsessive behavior;

My friends, for keeping me sane;

My housemates, for letting me work in peace;

My teachers and professors, for teaching me many things, first and foremost which subjects interest me and which ones do not;

Katherine Mize, Jakes Jares, Kim Ogg, and Bob Doris, for teaching me all the parts of politics I couldn’t learn from political scientists;

And finally, anyone reading this thesis, for putting up with my mistakes and shortcomings, making a serious effort to understand the issues I discuss, and, perhaps, taking this analysis another step forward.
Appendix and Data Availability Guide

I have prepared a series of six appendices to provide additional context to how I reached the conclusions I presented in *Explaining the Sizes of National Legislatures*. Appendix A provides some additional information and commentary on the operationalization of variables introduced in Chapter II and subsequent appendices primarily present raw data and analysis that would be impossible to comprehensively present in the body of this thesis. Appendix B provides the datasets I used for the statistical analysis presented in Chapter III along with explanatory codebooks and the raw statistical output that became Tables 3.1-3.7. Appendix C provides some additional regressions from Chapter III’s static analysis. Appendices D and F provide highly detailed information on the sizes of the House of Representatives and the House of Commons respectively. I used this information to formulate the American Model and the British Model and ensure that the sizes I presented in Chapters IV and V were rigorously verified. Appendix E provides data on the participants in the 1920s reapportionment debates that I used in Chapter IV.

Due to space constraints, only Appendices A and C are included in the version of this thesis I submitted to the faculty of Wesleyan University. Appendices D, E, and F are available in a special unabridged version available at https://ddreyfusdata.wordpress.com/sizes-of-national-legislatures/. The files comprising Appendix B and the datasets for Appendices D and F are also available from the same page.
Appendix A: Additional Variable Discussion

This appendix provides some additional information and commentary on how I operationalize the independent variables introduced in Chapter II. The following sections discuss electoral system, date of formation, and form of government respectively.

Electoral System: Mathematical Definition

Let $M$ be the percentage of legislators selected by majoritarian election, $P$ the percentage of legislators selected by proportional election, $I$ the percentage of legislators indirectly elected, and $U$ the percentage of legislators that are unelected.

A chamber is not directly elected if and only if $M + P < I + U$. A chamber is directly elected if and only if $M + P \geq I + U$. The five subcategories unelected, indirectly elected, majoritarian, proportional, and mixed are defined in Table A.1. Figure A.1 illustrates these subcategories graphically.

Table A.1: Mathematical Definition of Electoral System Subcategories

<table>
<thead>
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<th>Subcategory</th>
<th>Definition</th>
</tr>
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<tr>
<td>Unelected</td>
<td>$(M + P &lt; I + U) \cap (I \leq U)$</td>
</tr>
<tr>
<td>Indirectly Elected</td>
<td>$(M + P &lt; I + U) \cap (I \geq U)$</td>
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<tr>
<td>Majoritarian</td>
<td>$(M + P \geq I + U) \cap (M &gt; 0.85)$</td>
</tr>
<tr>
<td>Proportional</td>
<td>$(M + P \geq I + U) \cap (P &gt; 0.85)$</td>
</tr>
<tr>
<td>Mixed</td>
<td>$(M + P \geq I + U) \cap (M \leq 0.85) \cap (P \leq 0.85)$</td>
</tr>
</tbody>
</table>
Date of Formation: Challenges of Operationalization

This appendix addresses four critical challenges to operationalizing date of formation. First, some states do not have undisputed dates of formation because their antecedents were established in circumstances with little or no historical documentation. States with such “traditional” dates of formation include Japan, Ethiopia, France, and the United Kingdom. Second, it is debatable whether the dissolution of a country, such as by partition or conquest, or its reconstitution signifies the creation of a successor state or a new state with no legal continuity with the old one. Third, it is not obvious how transitory periods of annexation, occupation,
or other forms of external administration should be considered. Finally, some states, namely Australia, Canada, New Zealand, and South Africa did not become unambiguously independent until well after they became fully self-governing or achieved a political status comparable to modern associated states. The validity of any analysis based on date of formation can be called into question based on any one of these four issues, and I believe I provide satisfactory answers to all four.

The first issue (the questionable validity of many traditional dates of formation) is resolved by combining these oldest states into a single category, rendering debates over what the exact year of formation was irrelevant. This grouping corresponds with the “before 1701” category.

The second issue is a little more difficult to ignore, particularly because applying one set of principles or another can offset the date of formation by hundreds of years, representing the difference between Russia being formed hundreds of years ago under the czars, in 1991 with the dissolution of the Soviet Union, or even as late as 1993 with the adoption of its current constitution. Treating the partition of a country as producing one clear successor state (e.g. Russia in the case of the Soviet Union) and one or more newly independent states is desirable both because it is in line with existing international law and convention214 and because it matches the analytical purpose of date of formation in this analysis: a general indicator of the circumstances under which its political institutions emerged and developed. Partitions or revolutions may severely disrupt these institutions, but they generally include significant and at the very least legal continuity between the different regimes.

Accordingly, regime changes such as coups or revolutions do not factor into the date of formation.

Despite the nominal continuity of many countries over a very long period of time, many of them have been annexed or occupied for a relatively short length of time prior to having their old status reverted. Examples include the Anschluss, which saw Austria annexed and integrated into Germany from 1938 to 1945, and the short-lived recolonization of the Dominican Republic by Spain from 1863 to 1865. Recognizing that the decision to mark some discontinuities as negligible by virtue of their length is an arbitrary one, I have subjectively chosen ten years as the minimum duration of any annexation, occupation, or unification for it to be considered permanent. Hence, the Anschluss, which lasted about seven years, is considered a temporary annexation while the Japanese occupation of Korea, which lasted thirty-five years, is considered permanent.

The final issue (concerning the ambiguous dates of formation of Australia, Canada, New Zealand, and South Africa) concerns a relatively small number of countries, but is worth addressing to further explicate my rationale between picking potential dates of formation over others. Each of these countries are former British colonies that were organized or united in one year as a dominion, effectively granted full legislative autonomy in a second year upon adoption of the Statute of Westminster, and in the cases of Australia and Canada, explicitly declared sovereign in the 1980s. I choose to identify the first of these three potential dates as

\[215\] Specifically, laws passed by the country’s parliament that conflicted with British laws were no longer considered legally invalid. See Statute of Westminster 1931, 1931 c. 4, (1931), United Kingdom, § 2.
the date of formation primarily because each country’s legislature was established
either that same year or, in the case of New Zealand, well before. Therefore, for the
purposes of this analysis, the earlier years give a better indication of when the
legislatures’ institutional history began.

**Form of Government: Objective and Subjective Criteria**

Definitions of different forms of government have been typically based on the
powers of two key political figures, the head of state and the head of government,
their relationship to each other, and their relationship to the legislature. The defining
characteristics of these two figures do not seem to be meaningfully disputed: the head
of state “represents the international persona of the State and is often seen as
symbolic of that State” whereas the head of government is the leader of the executive
authority governing the state.²¹⁶ These two functions can be combined in the same
person or same office, but are separated more often than not.

Typically, only one individual occupies each role, and hence definitions of the
terms almost always refer to a single head of state and a single head of government,
but this is not essential. A country can have multiple heads of state and/or multiple
heads of government as in the cases of Andorra, which has two ceremonial heads of
state, and San Marino, which has two Captains Regent that function as both heads of
state and heads of government. However, keeping with convention and recognizing
that the number of such figures does not affect its executive status or relationship to

the legislature, all the definitions I use refer to heads of state and heads of government in the singular.

The three main forms of government political scientists have typically used to classify both democratic and nondemocratic regimes have been presidential, parliamentary, and semi-presidential. The defining characteristics of the first and second categories have been generally well-established, although there are minor differences between definitions. Presidential systems are typically distinguished by the independence of the government (also termed “cabinet” or “ministry”), except in extreme or unusual circumstances such as an impeachment, from the legislature, whereas the reverse is true in parliamentary systems. Other characteristics of presidential systems have been the centralization of executive power in a single official, the “president,” the union of the roles of head of state and head of government in the presidency, and the direct election of the president for a fixed term of office. In parliamentary systems, on the other hand, the head of state and head of government are separate, with the head of state having little or no effective political power, and a government that can be dismissed by a routine vote in the legislature, meaning that the government is “responsible” or “accountable” to it.

The definition of semi-presidentialism, encompassing regimes with elements of both presidentialism and parliamentarism, has attracted considerable debate, in

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contrast to the relative consensus on the other definitions. As originally defined by Duverger (1980), a semi-presidential system possesses both a powerful head of state independent of the legislature and a ministry responsible to the legislature. However, the first part of this definition has increasingly come under criticism, with many political scientists preferring to substitute the presence of a popularly-elected head of state for the “considerable power” criterion used by Duverger. Elgie (1998), a prominent proponent of this definition, identifies two main problems with Duverger’s definition and other similar classifications. First, they tend to reference both dispositional (i.e. properties independent of relationships like how an official is elected) and relational (i.e. specific power relationships) characteristics, which in Elgie’s view can create considerable conceptual ambiguity. Second, the countries classified as semi-presidential “var[y] from one writer to another” because the definition of a “strong president” is inherently subjective. As a result of these criticisms, subsequent classifications have tended to either use some variation of Elgie’s definition or formulate more meaningful alternatives to semi-presidentialism.

Nonetheless, I believe that the more subjective approach in line with Duverger’s analysis is more appropriate for this analytical context. I believe Elgie is correct that many existing definitions have created unnecessary ambiguity by

224 E.g. José Cheibub et al.
conflating dispositional and relational characteristics. Defining political systems in terms of presidential powers can create significant ambiguity if the powers are not explicitly identified as *de facto* or *de jure*. Having “quite considerable powers” is not the same thing as possessing “quite considerable power,” i.e. the ability to actually exercise those powers in practice. That being said, Elgie does not adequately justify his claim that dispositional and relational characteristics cannot be used in the same categorization provided they are clearly separated and identified as such.

My own classification, consisting of four primary categories and two sets of exceptional cases, is based on a total of six dichotomous characteristics: five dispositional and one relational (whether or not the head of state is powerful). While the power relationship between the head of state and head of government is significantly more difficult to operationalize than how those officials are elected, the prior is far more relevant to this analysis than the latter. Whether or not a head of state is popularly elected is easy to identify, but as Siaroff (2003) observes, the rationale for using it as the feature distinguishing presidential and semi-presidential systems from parliamentary ones is “at best implicit,” sometimes but not always a signifier of political power and thus a meaningful distinction regarding the executive’s independence from the legislature. As this relationship is the main reason why the form of government may be relevant to legislature size, a more subjective categorization with political power as one of its criteria is more useful than one that is more consistently reproducible based on how the head of state is elected.

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226 Ibid., 291.
Appendix C: Static Analysis

Regressions

Table C.1 contains the results of ordinary least squares (OLS) regressions for all six measures of legislature size in all 193 UN member states: actual/statutory lower house size, actual/statutory upper house size, and actual/statutory legislature size. For convenience, the regressions for the “statutory” measures (regressions A, B, and C) appear on the left side of the table and those for the “actual” measures (regressions D, E, and F) appear on the right. For each dependent variable, the (1) model is a simple bivariate model with only population, the (2) model includes all available variables for that size measure, and the (3) model includes only variables with at least one coefficient statistically significant at the 5% level.

The measures of legislature size, along with the quantitative variables population and GDP per capita, are logarithmic. The coefficients should therefore be interpreted as components of this equation:

\[ S = 10^a + b + c \cdots \times P^x \times G^y \]

The intercept and coefficients for categorical variables like whether or not the chamber has a majoritarian electoral system are the series of variables that sum to the exponent of the 10 while \( x \) and \( y \) are the coefficients of the population (\( P \)) and GDP per capita (\( G \)) variables respectively.
Table C.1: OLS Regressions for All Measures of Legislature Size

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Form of Government:
- Semi-presidential: 0.0697* (0.0347), 0.0754* (0.0335), 0.0716* (0.0344), 0.0793* (0.0333)
- Parliamentary: 0.0539 (0.0367), 0.0533 (0.0362), 0.0662+ (0.0364), 0.0660+ (0.0359)
- Parliamentary-presidential: 0.1306* (0.0608), 0.1302* (0.0599), 0.1413* (0.0602), 0.1420* (0.0595)
- One-party: 0.3560*** (0.0784), 0.3833*** (0.0692), 0.3709*** (0.0777), 0.3921*** (0.0687)
- Transitional: 0.0389 (0.1198), 0.0278 (0.1144), 0.0218 (0.1188), <10^-4 (0.1136)

Residual Standard Error: 0.1864, 0.1582, 0.1567, 0.1873, 0.1568, 0.1556
Adjusted R^2: 0.7963, 0.8533, 0.856, 0.7958, 0.856, 0.859
Observations: 193, 193, 193, 193, 193, 193

B: Log10 (Statutory Upper House Size)
- Intercept: -0.3938+ (0.2201), -0.7304+ (0.4061), -1.0499** (0.3434), -0.4006+ (0.2219), -0.8120+ (0.3989), -1.1074** (0.3376)
- log(Population): 0.3100*** (0.0309), 0.2961*** (0.0367), 0.3159*** (0.0332), 0.3098*** (0.0311), 0.2980*** (0.0361), 0.3156*** (0.0327)

E: Log10 (Actual Upper House Size)
- Intercept: 0.1389 (0.0856), 0.1723* (0.0823), 0.1533+ (0.0841), 0.1890* (0.0809)
- log(Population): -0.0166 (0.0677), -0.0122 (0.0623), -0.0044 (0.0665), -0.0048 (0.0615)
- Electoral System:
  - Unelected: 0.1889+ (0.0975), 0.1981* (0.0926), 0.1942* (0.0958), 0.1977* (0.0910)
  - Majoritarian: 0.144 (0.0713), 0.2211 (0.1629), 0.2075 (0.1683), 0.2457 (0.1602)
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C: Log10 (Statutory Legislature Size)  F: Log10 (Actual Legislature Size)
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Note: The dependent variable, one of six different measures of legislature size, is identified at the top of each panel following an identifying letter A-F. Robust standard errors are in parentheses below each coefficient. All R² figures are statistically significant at the 5% level.

+ Significant at the 10% level
* Significant at the 5% level
** Significant at the 1% level
*** Significant at the 0.1% level
Bibliography


Act for the Admission of the State of California into the Union. 9 Stat. 452. 1850, United States.
An Act fixing the Number of the House of Representatives from and after the third March, eighteen hundred and sixty-three. 12 Stat. 353. 1862, United States.
An Act for apportioning Representatives among the several States, according to the first enumeration. 1 Stat. 253. 1792, United States.
An Act for apportioning the representatives in the seventeenth Congress, to be elected in the state of Massachusetts and Maine, and for other purposes. 3 Stat. 555. 1820, United States.
An Act for the Admission of Oregon into the Union. 11 Stat. 383. 1859, United States.
An Act for the Admission of the State of "West Virginia" into the Union, and for other Purposes. 12 Stat. 633. 1862, United States.
An Act for the admission of the State of Arkansas into the Union, and to provide for the due execution of the laws of the United States, within the same, and for other purposes. 5 Stat. 50. 1836, United States.
An Act for the Admission of the State of Kansas into the Union. 11 Stat. 269. 1858, United States.
An Act for the admission of the State of Louisiana into the Union, and to extend the laws of the United States to the said state. 2 Stat. 701. 1812, United States.
An Act for the Admission of the State of Minnesota into the Union. 11 Stat. 285. 1858, United States.
An Act for the admission of the State of Tennessee into the Union. 1 Stat. 491. 1796, United States.
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An Act for the admission of the States of Iowa and Florida into the Union. 5 Stat. 742. 1845, United States.
An Act for the apportionment of Representatives among the several States according to the sixth census. 5 Stat. 491. 1842, United States.
An Act for the apportionment of representatives among the several states, according to the fifth census. 4 Stat. 516. 1832, United States.
An Act for the apportionment of representatives among the several states, according to the fourth census. 3 Stat. 651. 1822, United States.
An Act for the apportionment of Representatives among the several States, according to the second enumeration. 2 Stat. 128. 1802, United States.
An Act for the apportionment of Representatives among the several States, according to the third enumeration. 2 Stat. 669. 1811, United States.

An Act for the apportionment of Representatives in Congress among the several States under the Thirteenth Census. 37 Stat. 13. 1911, United States.

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An Act regulating the number of Representatives to be chosen by the States of Kentucky and Vermont. 1 Stat. 191. 1791, United States.

An Act supplemental to an Act entitled "An Act for the Apportionment of Representatives to Congress among the several States according to the ninth Census". 17 Stat. 192. 1872, United States.

An Act supplementary to "An Act providing for the taking of the seventh and subsequent Censuses of the United States, and to fix the Number of the Members of the House of Representatives, and provide for the future Apportionment among the several States," approved twenty-third May, eighteen hundred and fifty. 10 Stat. 25. 1852, United States.

An Act to allow the State of California an additional Representative in the thirty-seventh Congress. 12 Stat. 411. 1862, United States.

An Act to authorize the people of the Missouri territory to form a constitution and state government, and for the admission of such state into the Union on an equal footing with the original states, and to prohibit slavery in certain territories. 3 Stat. 545. 1820, United States.

An Act to define the Boundaries of the State of Iowa and to repeal so much of the Act of the third of March, one thousand eight hundred and forty-five as relates to the boundaries of Iowa. 9 Stat. 52. 1846, United States.

An Act to enable the people of Colorado to form a constitution and State government, and for the admission of the said State into the Union on an equal footing with the original States. 18 Stat. 474. 1875, United States.
An Act to enable the People of Nebraska to form a Constitution and State Government, and for the Admission of such State into the Union on an equal Footing with the original States. 13 Stat. 47. 1864, United States.

An Act to enable the People of Nevada to form a Constitution and State Government, and for the Admission of such State into the Union on an equal Footing with the original States. 13 Stat. 30. 1864, United States.

An Act to enable the people of Oklahoma and of the Indian Territory to form a constitution and State government and be admitted into the Union on an equal footing with the original States; and to enable the people of New Mexico and Arizona to form a constitution and State government and be admitted into the Union on an equal footing with the original States. 34 Stat. 267. 1906, United States.

An Act to enable the people of the Alabama territory to form a constitution and state government, and for the admission of such state into the Union on an equal footing with the original states. 3 Stat. 489. 1819, United States.

An Act to enable the people of the Eastern division of the territory northwest of the river Ohio to form a constitution and state government, and for the admission of such state into the Union on an equal footing with the original States, and for other purposes. 2 Stat. 173. 1802, United States.

An Act to enable the people of the Illinois territory to form a constitution and state government, and for the admission of such state into the Union on an equal footing with the original states. 3 Stat. 428. 1818, United States.

An Act to enable the people of the Indiana Territory to form a constitution and state government, and for the admission of such state into the Union on an equal footing with the original states. 3 Stat. 289. 1816, United States.

An Act to enable the people of the western part of the Mississippi territory to form a constitution and state government, and for the admission of such state into the Union, on an equal footing with the original states. 3 Stat. 348. 1817, United States.

An Act to enable the people of Utah to form a constitution and State government, and to be admitted into the Union on an equal footing with the original States. 28 Stat. 107. 1894, United States.

An Act to enable the people of Wisconsin Territory to form a Constitution and State Government, and for the Admission of such State into the Union. 9 Stat. 56. 1846, United States.

An Act to establish the northern boundary line of the State of Ohio and to provide for the admission of the State of Michigan into the Union upon the condition therein expressed. 5 Stat. 49. 1836, United States.

An Act to provide for apportioning Representatives in Congress among the several States by the equal proportions method. 55 Stat. 761. 1941, United States.

An Act to provide for the admission of the State of Alaska into the Union. 72 Stat. 339. 1958, United States.

An Act to provide for the admission of the State of Hawaii into the Union. 73 Stat. 4. 1959, United States.

An Act to provide for the admission of the State of Idaho into the Union. 26 Stat. 215. 1890, United States.
An Act to provide for the admission of the State of Wyoming into the Union, and for other purposes. 26 Stat. 222. 1890, United States.

An Act to provide for the division of Dakota into two States and to enable the people of North Dakota, South Dakota, Montana, and Washington to form constitutions and State governments and to be admitted into the Union on an equal footing with the original States, and to make donations of public lands to such States. 25 Stat. 676. 1889, United States.

An Act to provide for the fifteenth and subsequent decennial censuses and to provide for the apportionment of Representatives in Congress. 46 Stat. 21. 1929, United States.


*Joint Resolution for the Admission of the State of Texas into the Union*. 9 Stat. 108. 1845, United States.


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