Congressional Apportionment and the Fourteenth Amendment*

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September 3, 2020

Abstract

This paper examines the coalitional stability of apportionment rules considered as part of the Fourteenth Amendment, assuming Congress limited itself to the eleven rules proposed by its members. Using each state's vote share as a measure of preference for various apportionment schemes, we find that the stability of legislative apportionment depended upon which states were seated in Congress as well as the voting threshold — majority, two-thirds, or three-fourths. Among all states, all eleven apportionment rules were in a top cycle under majority rule. A population-based apportionment, initially proposed by Representative James Blaine, made it out of committee and through both chambers of Congress largely because it was not voted upon against other proposals. Many of these rules provided greater vote shares for a majority of members than Blaine's and could have defeated that status quo just as easily. Our analysis raises questions about majority support for a portion of the Fourteenth Amendment in 1866.

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1 Introduction

Majority rule can be unstable. Unless certain stylized conditions are met, majority rule should produce unstable coalitions and majority cycles (McKelvey 1976; Plott 1967; Schofield 1978).[1] Riker (1988) made a powerful case against popular decision making based on these insights.

Such theoretical findings create a puzzle for the creation of the Fourteenth Amendment. The Fourteenth Amendment was the most important constitutional change in U.S. history after the Bill of Rights. Its first section declared that all persons born or naturalized in the United States were citizens (except Native Americans) and it prevented the states from depriving any person of life, liberty, or property without due process of law, or equal protection of the laws. However, its second section was much more controversial when it was created in 1866:

> Representatives shall be apportioned among the several States according to their respective numbers, counting the whole number of persons in each State, excluding Indians not taxed. But when the right to vote at any election for the choice of electors for President and Vice-President of the United States, Representatives in Congress, the Executive and Judicial officers of a State, or the members of the Legislature thereof, is denied to any of the male inhabitants of such State, being twenty-one years of age, and citizens of the United States, or in any way abridged, except for participation in rebellion, or other crime, the basis of representation therein shall be reduced in the proportion which the number of such male citizens shall bear to the whole number of male citizens twenty-one years of age in such State.

[1] An outcome is coalitionally unstable if there exists another outcome that a majority of voters prefer to it. A majority cycle exists if the group's preferences for alternatives are intransitive. For example, if a majority of individuals preferred x to y, y to z, and z to x, then there would be a majority cycle.

Section 2 replaced the infamous Three-Fifths Clause with a population-based apportionment reduced by the number of males at least 21 years old who were disenfranchised by the state.[2] If the states enfranchised all citizens, Section 2 would give each state an apportionment equal to their proportion of the national population. Did the apportionment rule proposed by the 39th Congress reflect the will of a majority of its members? Was it in a majority cycle?

This paper analyzes each state's vote shares under the eleven rules of apportionment considered by the 39th Congress for the Fourteenth Amendment. We have two goals. First, we want to evaluate the stability of coalitions and presence of majority cycles over the issue of legislative apportionment during a period dubbed the "Second Founding" (Foner 2019). We do this using each state's vote share (i.e., proportion of seats) as a measure of state interest. This provides an example of majority cycling for a literature struggling to find examples (Mackie 2003; Regenwetter et al. 2006). Second, we provide new insights into why Congress proposed and adopted the second clause of the Fourteenth Amendment.

Our analysis assumes delegates limited themselves to the eleven distinct rules of apportionment proposed by members of the 39th Congress 1865-1866, rather than all possible division. It then compares apportionment rules in terms of dominance relationships. For the purposes of this article, apportionment rule A strictly dominates apportionment rule B if and only if a majority of states receive a greater vote share from A than from B. Constitutional amendments are created and modified in Congress using majority rule, then passed to the states using two-thirds rule. Later in the paper, we will also consider dominance relationships using larger voting thresholds, such as two-thirds rule (required for proposing constitutional amendments to the states) and three-fourths rule (required for ratification).

In 1866 there were 37 states in the United States, but due to the rebellion only 26 Northern and Border states were seated in Congress. We find that among all 37 states,

[2] A rule of apportionment is a criterion for dividing legislative seats, such as the relative population of a state or the relative value of its property. Balinski and Young (2010) use the term differently to address the question of how to translate proportions (rational numbers) into seats (integers).

the apportionment rules proposed by the 39th Congresses were in a top cycle.[3] For every apportionment proposed, a majority of states attained larger votes shares from another apportionment. Furthermore, among members of the House and Senate, the apportionment rule in Section 2 did not dominate all other proposals. In fact, two other apportionment rules were the Condorcet winner in the House and Senate, respectively.[4] The reason that the rule in Section 2 was adopted was because the issue of apportionment was assigned to the Joint Committee on Reconstruction, which entertained five different proposals. Population-based apportionment (the basis of Section 2) made it out of committee because of the lack of pairwise comparison among the alternatives and a subtle strategic vote. Limited head-to-head voting in both chambers prevented members of the House and Senate from realizing that another alternative was a Condorcet winner, helping to keep population-based apportionment alive. Since a population-based apportionment dominated the status quo, members eventually coalesced around the proposal. Without support from former Confederate states, the Fourteenth Amendment would not attain enough support for ratification. Hence, its supporters made ratification of the Fourteenth Amendment a condition for Southern states to regain their seats in Congress.

We begin with a brief examination of the literature then review the theory of coalitional instability and introduce an example of cycling over the apportionment rules proposed by the 39th Congress. Next we introduce the eleven apportionment rules proposed, calculate each state's vote share under each rule, and use the resulting incentive structure to describe why a population-based apportionment managed to get through the Joint Committee on Reconstruction, both chambers of Congerss, and ultimately ratification by the states. We conclude with a few thoughts about the implications of our research for majoritarianism and the legitimacy of the Fourteenth Amendment.

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[3] Alternatives in the set X are in a top cycle if all elements of X are in a cycle (of any length) and there does not exist another alternative y not in X that dominates all elements of X (Austen-Smith and Banks 2000, 169).

[4] A Condorcet winner is an apportionment rule that dominates all other apportionment rules.

2 Literature

Historians and legal scholars have debated the intent of the first section of the Fourteenth Amendment in great detail. For originalists, the Fourteenth Amendment was never intended as a vehicle for applying the Bill of Rights to the states (Epps 2004; Presser 2002; Rice 2003). For living constitutionalists, members of the 39th Congress created the Fourteenth Amendment to nationalize rights and enforce them against the states (Curtis 1986; Amar 1992, 1998; Aynes 2015). Zuckert (1992) insists that both arguments have merit, while Whittington (2005) points out that historical interpretations have led to criticisms and questions of judicial overreach.

Political scientists have examined antebellum politics in Congress (Wawro 2005; Wirls 2011), explored the post-Reconstruction era (Jenkins and Nokken 2008), and examined the history of women's suffrage (Harvey 1997; Carpenter et al. 2018). Riker (1984; 1986) illustrated the theory of coalitional stability using historical examples. Others, such as Eguia (2013) and Ballingrud and Dougherty (2019), have applied these theories to historical problems in depth. To the best of our knowledge, however, no one has applied the theory of coalitional stability to the process of creating the Fourteenth Amendment.

Most works on the Fourteenth Amendment, particularly Section 2, are historical narratives. Foner (2014, 2019) provides a thorough account of the creation of all three Civil War amendments and responses from various regions. Smith (1970) uses sectional demographics to argue that Republicans used Section 2 to create a dilemma for Southern states: enfranchise former slaves and increase Republican ranks, or keep former slaves disenfranchised and reduce opposition to the Republicans in the House and Electoral College. Maltz (2015) enriches Smith's account by probing deeper into the debates. He offers a detailed account of how Section 2 was created and the various groups affected by the versions considered. While Maltz (2015, 150) assumes that Section 2 "had almost no discernible impact on the post-Reconstruction world," because its caveats were rendered moot by the Fifteenth Amendment, others have argued that it protected a freestanding Thirteenth Amendment

(Graber 2012), or that it influenced the Fifteenth Amendment, contemporary voting rights, and legal matters stemming from the postwar amendments (Pino and Witt 2020; Chin 2004; Tolson 2014).

While much can be said about the implications of the Fourteenth Amendment, the lack of theoretical contributions on the political development of its most controversial part is lacking. The literature does not recognize that a multiplicity of majority coalitions could have formed around different rules of apportionment. There is no reason to believe that the language of Section 2 was somehow inevitable or that a preponderance of states wanted it. As we shall see, a majority of states, and a majority of representatives in both houses of Congress, would have received greater vote shares from something else. If almost any of the other versions had passed, the language of Section 2 would have had a very discernible impact with or without the Fifteenth Amendment.

3 Theory

Voting on apportionment is a zero-sum game, like a high-stakes version of a divide-the-dollar game. Consider a legislature with three players, $\{1, 2, 3\}$, attempting to divide a scarce resource, like the allocation of seats in a national legislature. Players take turns proposing a distribution of seats until a majority of players settle on a distribution that 1) allocates at least one seat to each player (which we will temporarily model as $a_i \geq 0.01$), and 2) defeats all other feasible distributions. The feasible distributions for this game are:

$$S_1 = S_2 = S_3 = \{(a_1, a_2, a_3) \in \Re^3 : a_1 + a_2 + a_3 = 1; a_1 > 0.01, a_2 > 0.01, a_3 > 0.01\}$$

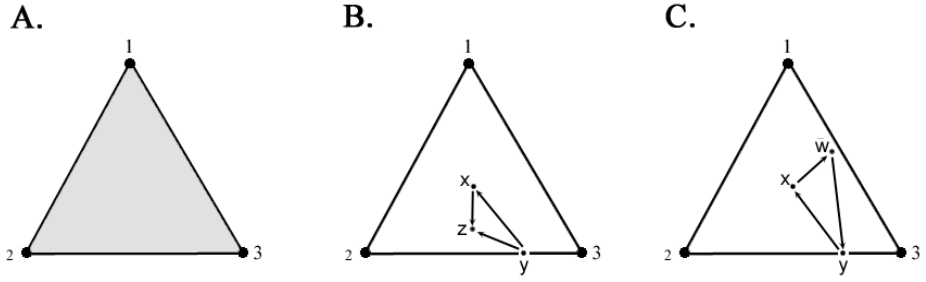
All distributions from such a game are coalitionally unstable, i.e. for each distribution there is another distribution that a majority of players prefer. Note that Player 1 might propose the equitable distribution $(0.\overline{33}, 0.\overline{33}, 0.\overline{33})$. However, Player 2 might propose $(.01, .50, .49)$, which would make her and Player 3 better off, defeating $(0.\overline{33}, 0.\overline{33}, 0.\overline{33})$ by a majority. Of

course, $(.01, .50, .49)$ would not be coalitionally stable either because Player 1 could propose $(.49, .01, .50)$ to gain the support of Player 3. For any distribution of the resource, a player could always propose a new distribution that makes a majority of players better off. No distribution is coalitionally stable, i.e., there is no equilibrium. This is true even if there are more than three players and minimum allocations are greater than $a_i = .01$.

The result is fairly general (Ward 1961). If all allocations are possible and the preferences of players are unrestricted, then a top cycle is likely to encompass the entire set of divisions, similar to McKelvey and (1976) Schofield's (1978) so called "chaos theorem."

Instability is affected by 1) the preferences of players, 2) the set of feasible divisions, and the 3) voting rule. To see the second point, consider Figure 1, frame A. Here players $\{1, 2, 3\}$ can chose any division of the dollar which is equivalent to choosing a shaded point in or on the triangle. Locations closer to a player's ideal point indicate a greater proportion of the division for that player. For every division (i.e., point in the triangle), there is another division (i.e., another point in the triangle) that a majority of the players prefer to the original division. In this sense, majority rule is unstable.

Figure 1: A Modified Divide the Dollar Game



However, if the set of feasible divisions is limited to the three divisions $\{x, y, z\}$ in frame B, then the story changes. In frame B, division x is preferred to division y by a majority of voters (players 1 and 2), division z is preferred to division y by a majority of voters (players 1 and 2 again), and division z is preferred to division x by a majority of voters (players 1 and

3). For these three particular divisions, majority rule produces the ordered chain $z \succ x \succ y$, where $z \succ x$ indicates that z dominates x. There is no cycle.

However, the stability is not entirely the result of limiting options to three alternatives. A different set of alternatives can produce a cycle, as they do in Frame C. Frame C is identical to frame B, except division z is replaced by division w. This single change alters the result quite a bit. A majority of players still prefer x to y, but a majority of players prefer w to x (players 1 and 3) and a majority prefer y to w (players 2 and 3), creating the cycle $y \succ w \succ x \succ y$. With a limited set of divisions, majority rule can produce an ordering or a cycle, depending upon the set of feasible divisions.

We will assume a cycle exists whenever a voting rule, such as majority rule, produces a cycle in the dominance relationship. An example from the 39th Congress is presented in Table 1. The table includes the vote shares of the 37 states of the union from three different methods of apportioning the House — each of which were considered by Congress in 1866. In the fifth column, a 1 underneath C21b $\succ_i$ Q indicates that the state receives a greater vote share from the apportionment on the left (C21b) than from the apportionment on the right (Q). A -1 underneath C21b $\succ_i$ Q indicates that the state receives a greater voter share from the apportionment on the right (Q) than from the apportionment on the left (C21b). And a 0 indicates that there is no difference in the two vote shares at 1×10^{-3}. We will assume that any difference less than 1×10^{-3} makes a state indifferent. Similar relationships are marked in column six and seven, for Q $\succ_i$ H2 and H2 $\succ_i$ C21b respectively. A positive total indicates that a majority of states prefers the apportionment on the left to the apportionment on the right. As shown, more states received larger vote shares from C21b than from Q, and more states received larger vote shares from Q than H2. One might think that if C21b dominates Q and Q dominates H2, then C21b dominates H2. However, this is not the case. As shown in the last column, more states received larger vote shares from H2 than from C21b, creating a majority cycle. In such cases, the social ordering of apportionments is inconsistent. Different majorities would attain greater vote shares from another division.

To determine dominance relationships more generally, we compare all eleven apportionment rules pairwise using an R script created by one of the authors. The script uses each state's vote share from the eleven apportionment rules as input and makes pairwise comparisons between the vote shares to create an adjacency matrix, which records all direct dominance relationships. The script also employs a Floyd-Warshall algorithm to find the shortest path from one rule of apportionment to another, and it identifies majority cycles.

Table 1: A Cycle Among States

State	male citizens 21 and up (C21b)	status quo (Q)	one rep. for every 100,000 male citizens (H2)	C21b $\succ_i$ Q	Q $\succ_i$ H2	H2 $\succ_i$ C21b
AL	0.013	0.026	0.027	-1	-1	1
AR	0.009	0.013	0.014	-1	-1	1
CA	0.020	0.015	0.014	1	1	-1
CT	0.018	0.014	0.014	1	0	-1
DE	0.003	0.003	0.014	0	-1	1
FL	0.002	0.005	0.014	-1	-1	1
GA	0.017	0.031	0.027	-1	1	1
IL	0.074	0.067	0.068	1	-1	-1
IN	0.049	0.044	0.041	1	1	-1
IA	0.035	0.031	0.027	1	1	-1
KS	0.013	0.010	0.014	1	-1	1
KY	0.030	0.035	0.027	-1	1	-1
LA	0.011	0.019	0.014	-1	1	1
ME	0.022	0.016	0.014	1	1	-1
MD	0.019	0.020	0.014	-1	1	-1
MA	0.045	0.038	0.041	1	-1	-1
MI	0.039	0.031	0.027	1	1	-1
MN	0.010	0.012	0.014	-1	-1	1
MS	0.012	0.022	0.014	-1	1	1
MO	0.048	0.045	0.041	1	1	-1
NE	0.005	0.003	0.014	1	-1	1
NV	0.003	0.001	0.014	1	-1	1
NH	0.012	0.008	0.014	1	-1	1
NJ	0.027	0.024	0.014	1	1	-1
NY	0.134	0.115	0.122	1	-1	-1
NC	0.017	0.028	0.027	-1	1	1
OH	0.081	0.070	0.068	1	1	-1
OR	0.004	0.002	0.014	1	-1	1
PA	0.104	0.092	0.095	1	-1	-1
RI	0.006	0.006	0.014	0	-1	1
SC	0.009	0.019	0.014	-1	1	1
TN	0.023	0.033	0.027	-1	1	1
TX	0.016	0.021	0.014	-1	1	-1
VT	0.011	0.009	0.014	1	-1	1
VA	0.021	0.032	0.027	-1	1	1
WV	0.011	0.012	0.014	-1	-1	1
WI	0.028	0.028	0.027	0	1	-1
Total	1.000	1.000	1.000	4	2	3

Notes: In the last three columns marked x $\succ_i$ y, a 1 in the column indicates x $\succ_i$ y, a -1 indicates y $\succ_i$ x, and a 0 indicates the state is indifferent between the two alternatives at 1×10^{-3}. As the sums indicate, C21b dominates Q, Q dominates H2, and H2 dominates C21b.

The cycles we have been discussing are entirely in terms of the dominance relationship. To relate dominance to human behavior, we need only two assumptions.

1. Individuals from state i vote for the apportionment rule that gives their state a larger vote share.

2. Individuals measure vote shares using the figures we present in our analysis.

The first assumption seems reasonable because individuals rarely have personal interests in vote shares that differ from their state's interests. Furthermore, members of Congress, particularly the Senate, are elected to represent their state. The second assumption is more controversial, but it provides a minimal amount of coherence needed for an analysis of preferences. Without it, or a similar assumption, it would be impossible to compare individual valuations of different apportionments.

We do not expect both assumptions to be true in every case. Instead, we simply assume that members of Congress prefer to increase their state's vote share without distraction from other motivations. This establishes baseline utility. Deviations from that utility might be considered interesting cases, worthy of further explanation. The assumptions will also simply the exposition.

4 Coalitional Stability

The Thirteenth Amendment freed the slaves, but it also increased the South's representation in Congress regardless of whether the South chose to enfranchise its former slaves. "This [literally meant] that the South would be entitled to an *increase* in membership in the House of Representatives and the Electoral College as a result of *losing* the war" (Smith 1970, 832). Rewarding former slave states with additional seats did not sit well with Republicans (Free 2015; Maltz 2014; Foner 2019). As Burton Cook (IL) pointed out, "The reward of treason will be an increase representation in this House" (Globe c. 39, s. 2, 410).

One solution was to leave the basis of representation the same but to require former confederate states to enfranchise former slaves and racial minorities (Maltz 2015). The approach would have worked for many Republicans, but it also required Northern states to enfranchise free Blacks, which many Northern representatives were not ready to support. Furthermore, it directly confronted states rights since states had previously defined qualifications for suffrage. Seeing the potential problem, House Republicans took a different tack. They considered several proposals that apportioned the House on a reasonable basis with penalties for any state that chose not to fully enfranchise its racial minorities. That partly addressed the states rights issue because it gave states a choice between enfranchising their racial minorities to increase their vote shares or to leave racial minorities disenfranchised and forgo potential seats.

Table 2: Apportionments Proposed in the 39th Congress

Date	Label	Basis of Apportionment	Proposer	Source
1865	Q	population (status quo)		
Dec 5	E	electors	Stevens (PA)	10
Jan 8	P1	population minus those disenfranchised due to race	Blaine (ME)	136
Jan 9	C21	citizens at least 21 years of age	Stevens (PA)	K, 41
Jan 9	C21a	male citizens at least 21	Conkling (NY)	K, 41
Jan 9	C21b	male citizens at least 21 who can read and write	Morrill (VT)	K, 41
Jan 15	H1	one rep. for every 125,000 male electors at least 21	Orth (IN)	235
Jan 24	H2	one rep. for every 100,000 male citizens over 21	Schenck (OH)	404
Mar 12	P2	population reduced by the ratio of those disenfranchised to males at least 21	Grimes (IA)	1320
Mar 12	R	one rep. for every 100,000 male citizens at least 21, with participants in the rebellion disenfranchised	Wilson (MA)	1321
Jun 4	3f	three-fifths clause (after slaves freed)	Hendricks (IN)	2942

Notes: Apportionments are presented in the order in which they were proposed in the 39^{th} Congress (1865-1866). Sources with a K indicate page numbers from Kendrick (1914). All other sources refer to page numbers from the Congressional Globe, 39^{th} Congress, Session 1.

This led Republicans to pursue a plan for Reconstruction that would ease sectional tensions, safeguard their own political power, and dismember "the whole fabric of southern

society" (Bond 1997).[5] The eleven rules of apportionment that they, or a Democratic member, considered are summarized in the order in which they were first presented in Table 2. We measure vote shares using each state's electoral laws in 1866 and data from the 1870 census. See Appendix A for a table of vote the shares from each apportionment and a description of how each was constructed. See Appendix B for the House seats that would result using the Webster method.

4.1 A Majority of States

The dominance relationships among the eleven apportionment rules are displayed in Table 3. Values within the matrix indicate the minimum number of dominance comparisons needed to reach one apportionment rule from another apportionment rule in 1866 for all 37 states (a combination of the Union and former Confederacy). A 1 appears in the table if the rule in column j dominates the rule in row i directly (i.e., in a single step). For example, the 1 in row Q column E indicates that E (apportionment based on state electors) directly dominates Q (the status quo after the Thirteenth Amendment). Values greater than one indicate the shortest number of steps from the apportionment listed in row i to the apportionment listed in column j. For example, P1 does not dominate Q directly, nor in two steps. The shortest chain from Q to P1 is P1 $\succ$ C21a $\succ$ H1 $\succ$ Q, indicating that the shortest path from Q to P1 is three steps.

Each row of the table has a number at least as great as 1, indicating that each apportionment rule is directly dominated by another apportionment rule. None are coalitionally stable. The domination of each apportionment rule is similar to the result of the divide-the-dollar game, which shows that a stable coalition should not be expected with an infinite set

[5]Stevens, Thaddeus. 1865. "Reconstruction," *Bedford Inquirer*, September 22. Stevens gives the speech before citizens in Lancaster, Pennsylvania on September 6, 1865. The *Bedford Inquirer* (Bedford, PA) offers a reprint.

Table 3: Reachability among All 37 States

	Q	E	P1	C21	C21a	C21b	H1	H2	P2	R	3f
Q	0	1	3	2	2	1	1	2	1	3	1
E	2	0	2	2	2	1	2	1	1	2	1
P1	2	1	0	1	2	1	2	2	1	1	2
C21	1	1	3	0	2	1	1	2	1	1	2
C21a	1	1	1	1	0	1	2	1	2	2	2
C21b	2	2	2	3	2	0	1	1	2	2	2
H1	2	1	2	2	1	2	0	2	1	3	1
H2	1	2	1	2	2	2	1	0	2	1	1
P2	2	3	2	3	3	3	2	1	0	2	2
R	2	1	2	2	1	1	1	2	1	0	1
3f	2	2	2	1	1	1	2	2	1	2	0

Note: The table lists the shortest number of steps in the dominance relationship from an apportionment in row i to an apportionment in column j among all 37 states of the union.

of apportionments. Our result is somewhat surprising because the same instability exists with only eleven apportionment rules.

There is also a top cycle among the eleven apportionment rules. This includes a House apportioned according to population without adjustments for states' disenfranchisement of races (Q, the status quo after the Thirteenth Amendment) and a House apportioned according to the states' population adjusted for disenfranchisement (P1, the apportionment rule in Section 2). A top cycle means that we could move from one apportionment rule to another using a series of pairwise comparisons. Within that top cycle are several cycles of length three, including (C21b $\succ$ Q $\succ$ H2 $\succ$ C21b), (E $\succ$ P1 $\succ$ H2 $\succ$ E), and (C21a $\succ$ 3f $\succ$ Q $\succ$ C21a) — the first of which is displayed in Table 1.

If each state had the same number of votes (as in the Senate) and representatives voted to increase their state's apportionment, a majority of states would prefer a House apportioned by electors (E) to a House apportioned by population (P1). A different majority would prefer P1 to Schenck's proposal of one representative for every 100,000 male citizens over twenty-one (H2). Meanwhile, a third majority would prefer H2 to E. Such cycles make it

difficult for the nation to coalesce around a single proposal and leaves the outcome largely the result of institutional rules and manipulation of agenda setters (Riker 1988; Ingham 2019).

Table 3 also depicts a more forceful relationship. A majority of states did not receive larger vote shares from P1 than from Q. Nevertheless, P1 ended up defeating Q and becoming the language of the Fourteenth Amendment. The natural question is: "How did this happen?" How did an apportionment rule that did not provide larger vote share for a majority of states than the status quo get adopted? As we will see, Congress represented a subset of all states. Its institutional rules allowed a subset of Congress to set the agenda. Failure to vote on many of the proposals pairwise, and at least one subtle and perhaps unconscious act of strategic voting, allowed P1 to be adopted. The story of that adoption starts with the Joint Committee on Reconstruction.

4.2 The Joint Committee on Reconstruction

In early December 1865, Republican Representative Thaddeus Stevens of Pennsylvania proposed a joint committee of fifteen members to consider apportionment and other issues related to reconstruction. Stevens and Republican Senator William Fessenden of Maine acted as co-chairs. Before the joint committee started its work, members of the House proposed two ideas: that electors (E) be the basis of representation (Globe, c. 39, s. 1, 10) and that P1 be the basis of representation. P1 was each state's "respective numbers" minus those whose "political rights or privileges are denied or abridged by the constitution or laws of any State on account of race or color" (Globe, c. 39, s. 1, 136). Representative James Blaine (ME), who proposed P1, claimed that there would be a substantial difference between the two ideas. Under the current population-based apportionment, both California and Vermont had three representatives. But with "voters as the basis of apportionment," Blaine claimed "Vermont [would have] three Representatives, [while] California would be entitled to eight" (Globe, C. 29, s. 1, 141). That would more than double California's apportionment. The

House did not vote on either idea, leaving the Joint Committee on Reconstruction to set its own agenda.

On January 9th, Stevens made the first proposal in the committee. He suggested that the House base its apportionment on citizens of the United States at least 21 years of age (C21). Representative Conkling (NY) quickly proposed to amend it to "male" citizens at least 21 years of age (C21a), which passed. Representative Morrill (VT) further suggested male citizens at least 21 years of age "who could read or write" (C21b). The literacy requirement did not pass, leaving C21a as the dominant idea on the floor. After these first few votes, however, pairwise voting became much less frequent. For example, C21a was never considered in a final passage vote (C21a versus Q).

After some debate, representative Morrill (VT) proposed to apportion the House based on respective numbers with deductions for races that were denied the right to vote (P1). After which Senator Williams (OR), Representative Conkling (NY), and Representative Boutwell (MA) all gave notice that they would propose similar language at the appropriate time. Clearly, those four committee members were signaling their preference for P1 over C21a. In a vote of 13 to 1, with 1 not voting, the committee resolved that "the apportionment of representation in Congress, as now provided by the Constitution ought to be changed" (Kendrick 1914, 45). However, they did not vote on the content of that new apportionment. Representative Johnson (MD) then proposed an apportionment based on electors (E).

At this point, C21, C21a, C21b, P1, and E had all been proposed, but none had been voted upon against the status quo. Only C21, C21a, and C21b had been partly paired against each other. Instead, the committee treated C21, C21a, C21b, P1, and E as possible apportionments for the committee to consider.

If members of the committee voted for the apportionment that gave their state the largest vote share, any one of these proposals could have defeated the status quo (Q). Similarly, a majority of the states represented by members of the committee would have received larger vote shares from each of these proposals than they would have from Q. Q was the Condorcet

loser among the six alternatives for members of the committee and C21b was the Condorcet winner.[6] Clearly, change would come, but in what way?

The committee then voted on E versus Q. E was defeated in a 6 to 8 vote with 1 not voting. Some members appear to have withheld their support for E strategically in an attempt to get a more preferred proposal tabled. Of the four men who had announced their support for P1, all of them represented states that would receive a larger vote share from E than from Q. Nevertheless, all four voted for Q. The same was true for Stevens, who was one of the committee chairs. That subtle bit of strategic voting may have prevented the committee from sending E to the House and Senate, which a majority of both chambers preferred to P1. The discord lead Morrill to propose a subcommittee of five members, headed by Fessenden and Stevens, which passed (Kendrick, 1914, 45-46).[7].

While the subcommittee was working on its report, Representative Conkling introduced C21 in the House on January 15 (Globe, c. 39, s. 1, 233). He then moved that his proposal be referred to the joint committee. The motion was committed, but it was not endorsed by a floor vote. The committee ignored the referral and waited for the subcommittee's report instead. Five days later, the subcommittee reported two versions of P1. Stevens, as both co-chair of the subcommittee and of the committee, moved to adopt the second version, which the Joint Committee on Reconstruction adopted in a 11 to 3 vote with 1 member not voting.

What is interesting is that the committee never considered C21a or C21b against the status quo and never considered various proposals head to head. If they had, they may have found that a majority of members preferred E, C21b, and C21 to P1. All three produced larger vote shares for a majority of the states represented on the Joint Committee on Reconstruction. Instead, members introduced several proposals, got one idea out of a

[6] For members of the committee, the Condorcet ordering among the six alternatives was $C21b \succ E \succ C21 \succ P1 \succ C21a \succ Q$.

[7] The names of the three other members of the subcommittee were omitted from the journal of the Joint Committee on Reconstruction

subcommittee, and adopted that idea before discovering that a majority wanted something else. The early adoption of P1 set the agenda and largely determined what happened on the floor.

4.3 The House of Representatives

Because none of the former Confederate states were seated and states had different numbers of representatives in the House, the dominance relationships in Table 3 differed for a majority of House members. There would be no cycles. E would be the Condorcet winner and Q would be the Condorcet loser.[8] That means that E would dominate all other proposals and that all proposals would dominate Q. Interestingly, any proposal listed in Table 2, with the exception of C21a and Q, could have beaten P1 (the proposal of the Joint Committee on Reconstruction) in the House.

On January 15th, Representative Orth (IN) proposed that the House consider H1 as the method of apportionment. Namely, he wanted the House apportioned by "the number of male citizens over twenty-one years of age, having the qualifications requisite for electors ... [with the] number of Representatives not to exceed 1 for every one hundred and twenty-five thousand inhabitants" (Globe, c. 39, s. 1, 235). With the right sized House, an apportionment based on integers would have avoided some of the problems raised by Balinski and Young (2010). Orth did not ask for his proposal to be committed. As a result, the House took no further action on his proposal.

The report of the joint committee was then read in the House on January 22nd, spawning a lengthy debate. During the debate, Representative Sloan (WI) proposed a version of E (Globe, c. 39, s. 1, 352), and representative Orth proposed H1 again, stating "if I had time, I could run through these census tables and show that the white males under the age of twenty-one largely predominate in my State and throughout the West" (Orth, Globe, c. 39,

[8] For members of the House, the Condorcet ordering would be $E \succ C21b \succ P2 \succ H1 \succ R \succ 3f \succ H2 \succ C21 \succ P1 \succ C21a \succ Q$.

s. 1, 380). The next day, Representative Shellabarger (OH) proposed C21a (Globe, c. 39, s. 1, 377), and Representative Schenck (OH) introduced H2, similar to Orth's proposition. Schenck's idea was that representatives should be apportioned "according to the number of male citizens over twenty-one years of age" with the number of representatives not exceeding "one for every 100,000 of actual population" (Globe, c. 39, s. 1, 404).

None of these proposals were paired against the status quo, and none were voted upon against each other or the joint committee's proposal of P1. If the House had voted on the proposals against P1, they would have found that a majority of its members represented states with larger shares from E, H1, and H2 than from P1. That might have lead to a different version of Section 2 of the Fourteenth Amendment.

Instead, the House simply sent the report back to the committee for revision. The committee separated taxation from the apportionment rule, but it made no other changes. It then made its second report on January 31st with the apportionment of taxation removed (Globe, c. 39, s. 1, 535). After Stevens read the report in the House, he yielded the floor to Schenck who introduced C21a as a substitute, but Stevens immediately called for a vote on final passage of P1 (P1 versus Q). When Hill (IN) attempted to make an additional substitution for Schenck's proposal, Stevens said, "I cannot yield for any more proposals" (Globe, c. 39, s. 1, 535). After some debate and last-minute remarks by Stevens, the House voted on Schenck's substitute (C21a versus P1), which failed 29 to 131 with 23 not voting (Globe, c. 39, s. 1, 538). Even though C21 and C21b gave more members greater vote shares than P1, P1 dominated C21a among members of the House, consistent with the outcome of the vote.

The proposal of the Joint Committee on Reconstruction was then read a third time and passed by a two-thirds majority, 120 to 46, with 16 not voting (Globe, c. 39, s. 1, 538). P1 had defeated Q, largely because opponents to the status quo needed to coalesce around something. Nevertheless, many other proposals dominated Q, especially the eight proposals that gave larger vote shares to a majority of the House than to P1.

4.4 The Senate

With only Northern and Border states seated in the Senate, the dominance relationships in the Senate differed from Table 3 as well. In the Senate, C21b was the Condorcet winner and Q was the Condorcet loser again. P1 was dominated by all of the apportionments proposed, except Q and C21a.[9]

Seven days after the House passed P1 by a two-thirds majority, the Senate took up the second report of the Joint Committee on Reconstruction. Senator Doolittle (WI) immediately proposed E as a substitute for the committee's proposal, which sparked a lengthy debate that continued for weeks. On March 9th, the Senate voted on the resolution of the joint committee (P1) against the status quo (Q), which passed by a narrow majority of 25 to 22 with 3 absent. That majority fell short of the two-thirds needed to send the amendment to the states for ratification, and allowed the Senate to entertain other ideas. Senator Sherman (OH) proposed a substitute of E, which he later rephrased as C21a. Senator Wilson (MA) proposed the more radical idea of R, apportioning the House based on the number of male citizens over twenty one but disenfranchising anyone who participated in the rebellion (Globe, c. 39, s. 1, 1321), and Senator Sumner (MA) proposed a substitute to the committee's proposal (P2) that based apportionment on the respective numbers in each state reduced in "proportion" to "the whole number of male citizens of the US over the age of twenty-one years in such State" (Globe, c. 39, s. 1, 1321).

Again, none of these proposals (E, C21a, R, or P2) were paired against P1. Had the votes been taken, the Senate may have discovered that a majority of Senators represented states that received larger votes shares from E, R, and P2 than from P1. All of these proposals, as well as others made in the House, would have provided greater vote shares for a majority of the states represented in the Senate than the status quo. There was nothing special about P1 in terms of vote share. Many proposals could pass.

[9]Because we are treating differences smaller than 1×10^{-3} as indifferent, C21a did not dominate P1 and P1 did not dominate C21a. Furthermore, a strict Condorcet ordering does not exist.

The Senate later re-committed the proposal to the Joint Committee on Reconstruction, which created a third version. For our purposes, the third version changed Section 2 mildly. Rather than reduce the representation of any state that excluded nonwhites from voting, the proposal reduced representation whenever an adult male citizens was denied access to the ballot (Maltz 2015, 171). The joint committee reported their third version to the House and Senate on April 30th, which the House passed on May 10th by a vote of 128 to 37 with 19 not voting (Globe, c. 39, s. 1, 2545).

The Senate considered more proposals in the last weeks of May and first weeks of June. One of the more radical ideas came from Senator Hendricks (IN) who wanted to modify P1 to 3f so that the apportionment excluded "all two-fifths of such persons as having been discharged from involuntary servitude by any proclamation of the president or Constitution since 1861" (Globe, c. 39, s. 1, 2942). The effect "would be to leave the representation of the southern State just where it was before the war" (Ibid.). The idea was rejected before it could be voted upon, like most of the proposals had been treated before.

After the Joint Committee on Reconstruction made minor changes to Sections 1, 2, and 3, the Senate passed the Fourteenth Amendment by a two-thirds vote, 33 to 11, on June 8th with 5 not voting (Globe, c. 39, s. 1, 3042). Five days later, the House passed the Senate's version 120 to 32 with 32 not voting (Globe, c. 39, s. 1, 3149).

4.5 Ratification

Three-quarters of all 37 states would not get a larger vote share from P1 than from Q.[10] If individuals voted to maximize their state's vote share, we would not expect P1 to be ratified. The same would be true if the South was excluded from the Union.

Several Republicans recognized their predicament. In the middle of developing the Fourteenth Amendment, Robert Dale Owen, a former member of the House, introduced a plan

[10]Increasing the majority threshold from a majority to two-thirds and three-fourths of the states makes it more difficult to pass proposals (Caplin and Nalebuff 1988; Dougherty and Edward 2011). A priori we know that any apportionment rule would be more stable with larger k-majority thresholds.

that made state support for ratification of the Fourteenth Amendment a precondition for a former Confederate state to be readmitted to Congress. As Ackerman (2000) points out, the Plan created several constitutional dilemmas, including questions about the legitimacy of the Fourteenth Amendment. Clearly, Southern states would not give their "consent" if they made the decision to ratify was made under duress. For Republicans, however, it may have been the only way to get the Fourteenth Amendment ratified.

On June 16, 1866, Secretary Seward sent the Fourteenth Amendment to the states for ratification. With the exception of Tennessee, the legislature of every former Confederate state refused to ratify it. This refusal led to the passage of the Reconstruction Acts, which imposed military governments in the South until new civil governments were established and the Fourteenth Amendment was ratified. It also prompted Congress to pass the part of the Owen plan on March 2, 1867 that required former Confederate states to ratify the Fourteenth Amendment before they would be seated in Congress. Shortly thereafter, all of the former Confederate states ratified the Fourteenth Amendment, and it was adopted on July 9, 1868.

P1 defeated Q in Congress. Ironically, however, the wording of the Fourteenth Amendment allowed individual states to chose whether they would enfranchise former slaves and racial minorities or leave them disenfranchised and reduce their representation in the House. If all states enfranchised, then the apportionment of the House would revert back to Q again. Of course the Fifteenth Amendment, which was adopted two years after the Fourteenth Amendment, changed all that. It prevented the states from denying individuals the right to vote "on account of race, color, or previous condition of servitude" removing all distinctions between Q and P1 in Section 2.

5 Conclusion

The Fourteenth Amendment was one of the most important constitutional changes in U.S. history. It established a national definition of citizenship, it guaranteed due process and equal protection of the laws for all Americans, and it became the mechanism for applying the Bill of Rights to the states. These tenets have been repeatedly subjected it to legal review as parties use it to assert individual rights over the states. Ironically, however, the most controversial aspect of the Fourteenth Amendment, at the time it was written, was the second section on apportionment. This section may have determined the fate of the Fourteenth Amendment, but it appears to have also been adopted in undemocratic ways.

It is easy to imagine that a majority of states welcomed population, reduced by those disenfranchised in a state, as the basis of apportionment. However, this was simply not the case. Among all states in the Union, a majority of states would have attained larger vote shares from an apportionment based on electors, total or male citizens at least age 21, population reduced by the ratio of disenfranchised to citizens, or even ideas such as Wilson's proposal to disenfranchise former Confederates. Furthermore, other apportionment rules produced larger vote shares for a majority of states than the status quo, including apportionments based on electors, male citizens at least 21, population reduced by the ratio of disenfranchised to citizens, one representative for every 125,000 male electors, and Hendrick's plan to reinstitute the Three-Fifths Clause. Although one might think there must have been one apportionment that advantaged a majority of states above all others, the nation was caught in a top cycle with no clear winner among the eleven ideas introduced in the 39th Congress.

The apportionment rule the Congress managed to place in the Fourteenth Amendment, passed by hook and by crook. That does not mean members of Congress cheated. It means that institutional rules sent the decision to a subset of voters, and those voters managed to pass the rule by failing to vote on a variety of proposals pairwise. On at least one occasion, they held out strategically for something they preferred more. The Joint Committee on Re-

construction entertained a variety of proposals that would have provided greater vote shares for a majority of the committee. Any one of these could have gotten out of committee. Furthermore, a majority of members would have preferred electors, citizens, or male citizens to what the joint committee actually proposed. Without voting on those alternatives pairwise, the supporters of P1 passed their idea to the House and Senate.

Lack of pairwise voting in the two chambers of Congress obscured the fact that, in both chambers, other alternatives were Condorcet winners. That is, other apportionment rules could defeat all others proposed: electors in the House and male, voting age citizens who were literate in the Senate. Both could easily defeat P1 in a sincere vote, and both would attain a two-thirds majority over the status quo in the House.

Wanting to get something done, and avoiding several votes that would have made it clear that a majority wanted something else, members of Congress ultimately coalesced around P1. Still, they did not have the votes to get any idea ratified by the states. Instead, they had to demand that the former Confederate states support the Fourteenth Amendment as a condition of being readmitted to Congress.

Forcing Southern states to ratify the Fourteenth Amendment raises questions about its legitimacy (Ackerman 2000). We add to that story by showing that the process of crafting Section 2 was wrought with its own questions of legitimacy. In both the House and Senate, large majorities wanted something else. Men like Thaddeus Stevens got their ideas out early, and then, they managed voting in the committee and on the floor in a way that prevented those ideas from being replaced. In many ways, we should admire their political savvy for finding a solution to the problem of apportionment, but we should also pause to consider whether one of the most important parts of the Constitution did not reflect the will of the majority at the time of its creation.

Appendix A

Table 4: Vote Shares

State	Q	E	P1	C21	C21a	C21b	H1	H2	P2	R	3f
AL	0.026	0.013	0.024	0.025	0.024	0.013	0.015	0.027	0.015	0.014	0.022
AR	0.013	0.01	0.012	0.012	0.012	0.009	0.015	0.014	0.011	0.014	0.012
CA	0.015	0.023	0.014	0.013	0.018	0.02	0.015	0.014	0.014	0.014	0.015
CT	0.014	0.018	0.014	0.016	0.015	0.018	0.015	0.014	0.016	0.014	0.015
DE	0.003	0.003	0.003	0.003	0.003	0.003	0.015	0.014	0.003	0.014	0.003
FL	0.005	0.003	0.005	0.005	0.005	0.002	0.015	0.014	0.003	0.014	0.004
GA	0.031	0.016	0.029	0.03	0.028	0.017	0.015	0.027	0.019	0.014	0.027
IL	0.067	0.078	0.068	0.063	0.065	0.074	0.076	0.068	0.076	0.072	0.07
IN	0.044	0.047	0.045	0.045	0.045	0.049	0.045	0.041	0.05	0.043	0.046
IA	0.031	0.032	0.032	0.029	0.031	0.035	0.03	0.027	0.036	0.029	0.033
KS	0.01	0.013	0.01	0.01	0.012	0.013	0.015	0.014	0.01	0.014	0.01
KY	0.035	0.031	0.034	0.034	0.034	0.03	0.015	0.027	0.033	0.029	0.033
LA	0.019	0.011	0.017	0.019	0.019	0.011	0.015	0.014	0.011	0.014	0.016
ME	0.016	0.019	0.017	0.019	0.018	0.022	0.015	0.014	0.019	0.014	0.017
MD	0.02	0.018	0.02	0.021	0.02	0.019	0.015	0.014	0.018	0.014	0.02
MA	0.038	0.039	0.039	0.04	0.038	0.045	0.03	0.041	0.044	0.043	0.04
MI	0.031	0.039	0.032	0.032	0.033	0.039	0.03	0.027	0.035	0.029	0.033
MN	0.012	0.009	0.012	0.008	0.009	0.01	0.015	0.014	0.013	0.014	0.012
MS	0.022	0.011	0.02	0.021	0.02	0.012	0.015	0.014	0.012	0.014	0.018
MO	0.045	0.048	0.046	0.044	0.046	0.048	0.045	0.041	0.048	0.043	0.045
NE	0.003	0.005	0.003	0.004	0.004	0.005	0.015	0.014	0.004	0.014	0.003
NV	0.001	0.003	0.001	0.001	0.002	0.003	0.015	0.014	0.001	0.014	0.001
NH	0.008	0.011	0.009	0.01	0.01	0.012	0.015	0.014	0.01	0.014	0.009
NJ	0.024	0.024	0.024	0.024	0.023	0.027	0.015	0.014	0.027	0.014	0.025
NY	0.115	0.144	0.118	0.121	0.118	0.134	0.136	0.122	0.131	0.13	0.12
NC	0.028	0.017	0.027	0.028	0.026	0.017	0.015	0.027	0.02	0.014	0.026
OH	0.07	0.078	0.071	0.072	0.071	0.081	0.076	0.068	0.078	0.072	0.073
OR	0.002	0.003	0.002	0.002	0.003	0.004	0.015	0.014	0.002	0.014	0.002
PA	0.092	0.106	0.094	0.095	0.093	0.104	0.091	0.095	0.103	0.101	0.097
RI	0.006	0.005	0.006	0.006	0.005	0.006	0.015	0.014	0.006	0.014	0.006
SC	0.019	0.008	0.017	0.019	0.018	0.009	0.015	0.014	0.009	0.014	0.015
TN	0.033	0.025	0.032	0.032	0.031	0.023	0.015	0.027	0.028	0.014	0.031
TX	0.021	0.017	0.021	0.02	0.02	0.016	0.015	0.014	0.018	0.014	0.02
VT	0.009	0.011	0.009	0.009	0.009	0.011	0.015	0.014	0.01	0.014	0.009
VA	0.032	0.02	0.03	0.034	0.032	0.021	0.015	0.027	0.022	0.014	0.028
WV	0.012	0.01	0.012	0.011	0.011	0.011	0.015	0.014	0.013	0.014	0.012
WI	0.028	0.032	0.028	0.024	0.024	0.028	0.03	0.027	0.031	0.029	0.029

Table 4 lists the vote shares associated with each rule of apportionment presented in Table 2 using data from the 1870 census (Manson et al. 2019) and state electoral laws from 1866 (Thorpe 1909). With the exception of West Virginia, all states required electors to be males at least twenty-one years of age (Keyssar 2009).[11] Taxpaying qualifications remained in five states – Massachusetts, Rhode Island, Pennsylvania, Delaware and North Carolina. We did not adjust for these requirements because their precise effects on the size of the electorate are unknown.[12]

Q is the total population in each state from the 1870 census. Note, the census excludes Native Americans not taxed.

E are the number of individuals eligible to vote in a state, as determined by the state's constitution and electoral laws in 1866. All states enfranchised only males. Figures vary based on citizenship, age, and race from the 1870 census.[13]

P1 is the state's total population minus males of various races that were disenfranchised by the state's 1866 electoral laws.

C21 includes both male citizens at least 21 years of age m, and female citizens at least 21 years of age, f, calculated as $f = (m/a) * b$, where a is the number of males at least 19 years old and b is the number of females at least 19 years old in the 1870 census. Since

[11] The West Virginia constitution of 1861-1863 did not specify an age requirement. Instead, it prohibited "minors" from voting without defining who was a minor. We treat West Virginia as having the same age requirement as all other states. With regard to women, only two territories, Utah and Wyoming, enfranchised women by 1866. The first state to grant universal woman's suffrage was Utah, when it was granted statehood in 1896.

[12] Scholars agreed that property qualifications had a much larger effect on the electorate than taxpaying requirements, but they disagree about how much taxpaying requirements dampened eligible voters. Using a before and after comparison of the electorate in New York in the 1820s, Ratcliffe (2013, 245) argues that it decreased the eligible electorate by 1%, McCormick (1959, 405) by 6%, and Bateman (2013, 80, n. 81) by 8.8%. Their comparison is based on the size of the New York electorate before and after 1826 when New York's taxpaying requirement was eliminated. We could incorporate an average of these percentages for the five states that maintained taxpaying requirements if recommended.

[13] We made no attempt to count the insane, paupers, or criminals who were disenfranchised by some states. DE, NJ, VA (disenfranchised all three); WV (disenfranchised paupers and insane); MS (disenfranchised the insane and criminals); NV (disenfranchised the insane); MA, NH, SC (disenfranchised paupers); and LA (disenfranchised criminals).

many states did not have a citizenship status for women prior to the Fourteenth Amendment, figures should be considered the proportion of citizens at least 21 years of age "if" women were given equal citizenship as men.

C21a were the male citizens at least 21 years of age as reported in the 1870 census.

C21b were the male citizens at least 21 years of age who could both read and write, tabulated from the 100% sample of the 1870 census (Ruggles et al. 2020).

H1 were the male electors at least 21 years of age with representatives not exceeding one for every 125,000, calculated as the number of male electors at least 21 years old divided by 125,000, with each state assigned at least one representative.

H2 was one representative for every 100,000 male citizens over 21 years of age, calculated as C21a divided by 100,000, with each state assigned at least one representative.

P2 is the state's total population times $(1 - (d/m))$, where d is the number of individuals that would have been disenfranchised in 1870 if the state used its 1866 electoral laws, and m is the number of males at least 21.

R is the state's male citizens at least 21 years of age excluding participants in the rebellion, with one representative for every 100,000 people. It was calculated as (C21a minus veterans of the confederacy in the state) divided by 100,000, with each state assigned at least one representative. Confederate veterans were calculated by subtracting the state's confederate casualties (National Parks Service 2015) from the men it furnished to the confederate military (Dyer 1979, 11; Selcer 2006, 213), assuming casualties were uniform across the confederate states.

3f is the proposal to renew the Three-Fifths Clause, calculated as the state's non-slave population in 1870 plus three-fifths of its slave population. The latter was estimated as the proportion of the population that was slave in 1860 times the total population in 1870.

Appendix B

Table 5: House Seats

State	Q	E	P1	C21	C21a	C21b	H2	P2	R	3f
AL	8	4	7	7	7	4	8	4	4	7
AR	4	3	4	3	4	3	4	3	4	3
CA	4	7	4	4	5	6	4	4	4	5
CT	4	5	4	5	4	5	4	5	4	4
DE	1	1	1	1	1	1	4	1	4	1
FL	1	1	1	1	1	1	4	1	4	1
GA	9	5	8	9	8	5	8	6	4	8
IL	20	23	20	18	19	21	19	22	22	20
IN	13	14	13	13	13	14	12	15	13	13
IA	9	9	9	9	9	10	8	10	9	10
KS	3	4	3	3	3	4	4	3	4	3
KY	10	9	10	10	10	9	8	10	9	10
LA	6	3	5	6	6	3	4	3	4	5
ME	5	6	5	5	5	6	4	5	4	5
MD	6	5	6	6	6	6	4	5	4	6
MA	11	11	11	12	11	13	12	13	13	12
MI	9	11	9	9	10	11	8	10	9	10
MN	3	3	3	2	3	3	4	4	4	4
MS	6	3	6	6	6	3	4	3	4	5
MO	13	14	13	13	13	14	12	14	13	13
NE	1	1	1	1	1	1	4	1	4	1
NV	1	1	1	1	1	1	4	1	4	1
NH	2	3	3	3	3	4	4	3	4	3
NJ	7	7	7	7	7	8	4	8	4	7
NY	34	42	35	35	35	39	35	38	39	35
NC	8	5	8	8	8	5	8	6	4	7
OH	20	23	21	21	21	24	19	23	22	21
OR	1	1	1	1	1	1	4	1	4	1
PA	27	31	28	28	27	30	27	30	30	28
RI	2	2	2	2	2	2	4	2	4	2
SC	5	2	5	5	5	3	4	3	4	4
TN	10	7	9	9	9	7	8	8	4	9
TX	6	5	6	6	6	5	4	5	4	6
VT	3	3	3	3	3	3	4	3	4	3
VA	9	6	9	10	9	6	8	6	4	8
WV	3	3	3	3	3	3	4	4	4	3
WI	8	9	8	7	7	8	8	9	9	8

Table 5 lists the number of House seats assigned to each state for each apportionment rule using the Webster Method. We assume there were 292 members — the number of seats in the 42nd House. Clearly, there are notable differences under the different rules of apportionment.

H1 does not appear in the table because it could not be apportioned with 292 seats. It produces the same integer value for 27 of the smallest states. Those states must be assigned the same number of seats. For $J \geq 2$ a divisor of $2 \cdot \sum_{j=1}^{J} 10^{-j} + 3(10)^{-(J+1)}$ produces a quota just less than 4.5 for the 27 states, which rounds down to 4 seats per state and creates a House with 283 seats. A divisor of $2 \cdot \sum_{j=1}^{J} 10^{-j} + 2(10)^{-(J+1)}$ produces a quota of 4.5 for the 27 states, which rounds up to 5 seats per state and creates a House with 313 seats. Presumably, if H1 was ratified, the size of the House would be modified as well.

Congress used both the Hamilton method and the Webster method during this period. The Hamilton method produces the same distribution of seats as displayed in Table 5, with the exception of R which could not be apportioned.[14]

[14] With R, the Hamilton method creates 11 seats to distribute to states with the largest remainders. The first 8 of those seats could be easily distributed, but the remaining 3 would be assigned to any of the next 26 states which all have the same sized fractions in their ideal quotas. Hence, any assignment of these 3 seats would be arbitrary or a modification of Hamilton's method. A similar problem occurs for H1 figures using the Hamilton method.

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