

An explanation of the continuing federal government mandate of single-member congressional districts

Stephen Calabrese

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Abstract A formal rational expectation model is developed to explain why congressional single-member districts (SMD's) were mandated in 1842 and why that mandate has repeatedly been re-affirmed. The tendency of voters to moderate the dominant party in the federal government combined with the single-party sweep effect of multi-member districts (MMD's) creates the incentives for the strongest party to support a SMD mandate. This model performs empirically much better than alternative theories. The model's prediction that the current SMD mandate is permanent is an example of how an institutional change can endure even if it no longer reflects voter preferences.

1. Introduction

All the members of the U.S. House of Representatives are currently elected in single-member districts. This means that states are divided into geographically defined districts and the residents of each district are permitted to elect one representative. The U.S. Constitution, though, does not require any particular electoral method for electing House members. This raises questions about how and why single-member districts (SMD's) became the nationwide electoral method.

The Constitution does require that Congress apportion to each state seats in the House of Representatives based on population. To satisfy this requirement, Congress passes apportionment acts after each census that prescribe the number of seats that are allocated to each state. Since the Constitution does not stipulate a specific system for determining the allocation of the seats, the actual size of the House, or guidelines for creating congressional districts, Congress has at times used the apportionment acts to deal with these issues. However, the first five federal apportionment laws (1792–1832), simply indicated the specific number of representatives for each state without providing any direction concerning congressional districting. The number of congressional districts and the method of election in each state were left to each

S. Calabrese
University of South Florida and Carnegie Mellon University-Qatar Campus
e-mail: scalabre@cas.usf.edu

state's respective legislature to determine. Many states chose to elect their representatives in multi-member district (MMD) elections. Multi-member districts are districts with two or more representatives.

Whether there should be single-member districts in all states was an ongoing controversy in the early 19th century. At least thirty-four bills and proposed constitutional amendments to abolish multi-member districts were introduced in Congress from 1800 to 1826 alone.¹ A combination of various reasons may explain why all these measures failed. The Constitution was deliberately vague about the method for electing representatives because the consensus among the Framers was that state legislators could best decide the most appropriate method for their respective states. Hence, many congressmen in the early part of the 19th century, and before the consequences of MMD's became fully apparent, opposed mandating SMD's because they thought it was contrary to the intent of the Framers. Also, between 1789 and 1842, at least 31 percent of the total House membership came from states that elected congressmen in MMD's.² These congressmen, although not a majority, may have in general opposed a change in the status quo. In addition, one of the perceived major drawbacks of MMD elections was that one party almost always won all the seats. Thus, as this paper posits below, it was likely that prohibiting MMD's in 1842 was driven by party partisan politics. However, in the early part of the 19th century parties were still developing and were not as strong as they would become by the mid 1800's.³ Hence, party loyalties, discipline, and party line voting may not have been strong enough before 1842 to eliminate MMD's when congressmen had ulterior motives for permitting MMD's. For instance, and the most likely reason why MMD's were not prohibited before 1842, there was a bias among congressmen from small states for MMDs because their respective state delegations would likely be more politically unified and vote as a bloc, and thus counterbalance the power of the larger states in the House. The Senate, where the small states had their greatest strength, exercised effective veto power over any proposal to eliminate MMD's.⁴

The movement for nationwide single-member district elections gained considerable momentum in 1842.⁵ In 1841, Alabama's Democratic controlled state legislature switched from single-member district elections to a general ticket election. Democrats won all five of the delegation's seats. The losing Whig party argued that this was the first step in a national movement towards MMD's.⁶ This led to an amendment tacked on to the Apportionment Act of 1842 mandating single-member districts. It stated that representatives "should be elected by districts composed of contiguous territory equal in number to the number of representatives to which said state may be entitled, no one district electing more than one representative." Thus single-member districts were officially instituted by Congress. Subsequent Apportionment Acts re-affirmed the SMD mandate. The Uniform Congressional District Act of 1967 permanently mandated SMD's.

The main purpose of this paper is to explain why in the 1842 Apportionment Act Congress prohibited multi-member congressional house districts (MMD's), the president signed it, and why this mandate endures to the present. I do this in the context of a formal electoral voting model. This model illustrates why and how the outcome of a congressional election

¹Zagarri, p. 128.

²Zagarri, p. 129.

³Aldrich, p. 97.

⁴Zagarri, pp. 125–131.

⁵*Congressional Quarterly's Guide to US Elections*, p. 973.

⁶Zagarri, p. 130.

depends upon the type of district. Thus, the model formally shows how Congress is capable of influencing the outcomes of house district elections by implicitly or explicitly permitting or prohibiting certain types of congressional districts and methods of election.

In this model, the outcome of a congressional election from the perspective of a particular district's electorate is a general policy position that is a function of the position(s) of the district's representative(s), the preferences of the executive, and the relative strength of the two parties in Congress. Voters can use their congressional votes to moderate the existing presidential and congressional policy positions. This moderating behavior is consistent with the empirical observations of massive split-ticket voting in the U.S. electorate and the presidential midterm electoral cycle. It is also part of the catalyst that motivated the initial SMD mandate in 1842 and drives the model's prediction that this mandate is permanent. The other factor that motivated the initial SMD mandate and induces the permanence of the 1967 law is the prediction that one party sweeps all the seats in an MMD election even when there is split-ticket voting. The electorate's tendency to moderate the party with the greatest representation in the federal government coupled with the MMD single party sweep effect, provided the motivation throughout history for the strongest party in the federal government to consistently push through and ultimately permanently mandate SMD's. This result is a concrete demonstration of how an institutional constraint can be adopted and then become essentially irreversible even though the constraint does not necessarily reflect voter preferences.

In Section 2 of this paper I develop a general model of multi-member districts elections with sincere voting among the electorate. The model developed in Section 2 is applied in Section 3 to explain why Congress mandated single-member districts (SMD's) in 1842. In Section 4 I discuss predictions of the model. I also describe alternative hypotheses for the SMD mandate. One of these alternative hypotheses is that a representative's vote on mandating SMD's depended on whether he was elected in a SMD or a MMD. Another alternative hypothesis is that single member districts are incumbency protection devices (Crain, 1977; Greene, 1993) and that members with the least seniority needed the most protection and therefore were more likely to vote for mandating SMD's. The other alternative hypotheses predict that a representative's vote depended on either the representative's region of the country or the size of his state. I test all the alternative theories by empirically analyzing the vote in Congress on the 1842 mandate. I show that the hypothesis that is based on the model in this paper explains most of the voting on the 1842 SMD mandate. The other hypotheses are shown to contribute very little, if anything, to explaining the vote on the mandate. In Section 5, I further test the theories by examining congressional voting on subsequent Apportionment acts involving SMD mandates. In this section I demonstrate the incentives captured by the model are the best among the extant explanations for why SMD's were not only first mandated, but also why the SMD mandate has persisted throughout history and has become permanent.

2. A model of multi-member district (MMD) elections

The model embodies a two party system, with a Democratic and a Republican party in which the parties have different policy positions or platforms in a unidimensional policy space.⁷ (Wittman, 1977, 1990; Calvert, 1985; Alesina, 1987, 1988; Alesina & Rosenthal, 1989; Alesina, Londregan, & Rosenthal, 1989). The platforms of both parties are fixed and known

⁷This framework is a generalization of the model developed in Calabrese (2000), which assumes that voters perceive members of the same party as having the same policy position. As detailed below, voters in the model developed here take into consideration the policy position of the president and the strength of the parties in Congress.

by the voters. A Congressional House district is a multi-member district if more than one representative is elected from the district. If $s > 1$ represents the number of House seats in a multi-member district, it is assumed each party nominates s candidates and each voter in the district casts s votes and is permitted to vote only once for any candidate. This setup is consistent with almost all the multi-member district House elections in the past.

Voters have symmetric, single peaked, concave utility functions in the unidimensional policy space.⁸ All utility functions are identical except for the ideal point, which is indexed by i for each voter. The density function of the voter's ideal points, $f(i)$, is continuous and, without loss of generality, normalized on the $[0, 1]$ interval. The median voter's ideal point is i_m .

In this Congressional multi-member district elections model the district voters vote sincerely⁹ over possible policy outcomes that are a weighted average of the positions of a voter's district delegation, the Democratic party position and relative strength in Congress, the Republican party position and relative strength in Congress, and the position of the President. Thus, when voters vote for multiple candidates in a multi-member district house election, they take into consideration the policy position of the president and the strength of the parties in Congress. Voters are able to use their respective congressional house elections to counterbalance the president and the dominant party in Congress. From the perspective of a particular district population, the policy outcome of an election is represented on the $[0, 1]$ interval by the following function:

$$\text{Policy Outcome} = qH^d + kr + jd + (1 - q - k - j)P, \quad (1)$$

where H^d = position of the district delegation, r = position of the Republican party, d = position of the Democrat party, $r > d$, P = position of the president and equals d or r , and q , k , and $j \in [0, 1]$ where $q + k + j < 1$. The value of the weighting parameter q is the measure the voters place on the relative strength of the district's house delegation in influencing policy impacting the particular district. This value may depend on such variables as the leadership positions held by district delegation members, the influence of the delegation on policy that directly impacts the district, and the size of the delegation relative to the size of the House.¹⁰ The weighting parameters k and j are measures of the relative strengths of the two parties in Congress excluding the members of the particular house district's delegation. The measure of the President's strength in influencing policy is $(1 - q - k - j)$.

Even if voters had complete current information, they could not know with certainty all the possible policy outcomes that could result from a multi-member district congressional election. This is because some variables that affect policy outcomes independent of a district's delegation are not determined until after an election. For instance, currently all congressional district elections happen simultaneously and the exact makeup of Congress is unknown to the

⁸The validity of assuming a unidimensional policy space for congressional elections was empirically verified in Calabrese (2000).

⁹Calabrese (2000) provides strong evidence for the sincere-voting assumption. In addition, he has developed two alternative "sophisticated voting" models that prove to be unsatisfactory. In the "highly" sophisticated voting model voters are able to coordinate their voting over both outcomes and candidates. This model predicts that one party sweeps only if the median voter's most preferred outcome is a sweep. Thus, sweeps would be relatively rare, which is inconsistent with the fact that sweeps occurred in over 90% of MMD elections. In the "less" sophisticated voting model voters are able to coordinate their voting over outcomes but not candidates. However, it can be shown that an equilibrium does not exist in this model.

¹⁰In some cases in the 18th and 19th century, members of a single multi-member district delegation constituted over 10% of the total house membership.

voters when they vote for their representatives.¹¹ Thus, voters cannot place with complete certainty values on q , k and j when they vote in an election. However, voters will have expectations on these values. One variable that these expected values will be a function of is the expected strength of the President, which may depend on numerous factors. For example, in a presidential election year with a close presidential election, the perceived expected strength of the president in affecting future policy may be less than if the election is expected to be a landslide victory with a clear popular mandate for the victor. Another example is that the expected strength of the presidency in affecting future policy may generally be greater in a Presidential midterm year congressional election than in a Presidential election year congressional election due to presidential experience or the consolidation of presidential influence and power. Also, a lame-duck president in his last term may be willing to be more aggressive in pursuing his agenda. In any case, the greater the relative expected strength of the President, the lower are the expected values of q , k , and/or j .

Other variables that the expected values of q , k , and j depend on may include the expected relative strength of the opposing party's leaders in Congress and the percentage of the members of Congress in each party before the election adjusted by a random shock variable. The potential significance of this last factor is due to congressional incumbents winning re-election 95% of the time.

In addition, although the value of P is known with certainty in Presidential midterm congressional elections, its value is uncertain in Presidential election years. The expected value of P in Presidential elections years could be function of incumbency and polling. Thus, the values of q , k , j , and P when voters vote in an election and before the outcome is known are properly interpreted as follows:

$$q = E(q_t|I_{t-1}), k = E(k_t|I_{t-1}), j = E(j_t|I_{t-1}), \text{ and}$$

$$P = E(P_t|I_{t-1}) \text{ in Presidential Election Years and}$$

$$P = r \text{ or } d \text{ with certainty in Presidential Midterm Election Years,}$$

where t = time of the election, $E(\bullet)$ is the mathematical expectation operator, and I_{t-1} is the information set available in time period $(t - 1)$. It is assumed that voters in a particular district have common knowledge and expectations on the values of q , k and j and on the value of P in Presidential election year congressional elections.

Following Calabrese (2000), a district's house delegation policy position, H^d , is determined by the average of the positions of the members of the district delegation. Let s represent the number of House seats of a particular district. Since voters perceive members of the same party as having the same policy position, then there are $s + 1$ possible policy outcomes the voters choose among. These possible policy outcomes are listed below in Table 1 as they are ordered from left to right on the $[0, 1]$ interval.

In a multi-member district House election voters who prefer one of the intermediate outcomes from the list above must cast a proportion of his/her votes for candidates of both parties. These split-ticket voters must choose the candidates of each party for whom they will vote.¹² It is assumed if a split-ticket voter does not have a preference among candidates of the same party, he/she randomizes among candidates of the same party. Among

¹¹ A common national general election day has not always been the case in the past, especially prior to the ratification of the 20th (lame-duck) Amendment to the Constitution.

¹² The fact that voters were able to split their vote between parties and that split-ticket voting did and does occur is empirically verified in Calabrese (2000).

Table 1 Policy outcomes voters in a district vote over in a multi-member district house election

	$qd + kr + jd + (1 - q - k - j)P,$
	$q \left[\frac{(s-1)d+r}{s} \right] + kr + jd + (1 - q - k - j)P,$
	$q \left[\frac{(s-2)d+2r}{s} \right] + kr + jd + (1 - q - k - j)P,$
	$q \left[\frac{(s-3)d+3r}{s} \right] + kr + jd + (1 - q - k - j)P,$
	”
	”
	”
	$q \left[\frac{d+(s-1)r}{s} \right] + kr + jd + (1 - q - k - j)P,$
	$qr + kr + jd + (1 - q - k - j)P.$

split-ticket voters who do have individual rankings of candidates of the same party, it is assumed that there is not a common or widespread systematic method of ranking the candidates (based on reputation, experience, or any other criteria).¹³ As an illustrative example, assume there are 2 seats in a given district, thus (based on the way MMD elections were generally held) there are 2 candidates from each party and each voter has 2 votes. Since all voters have the same given expectations about the party of the president and the power of the two parties in Congress, there are 3 policy outcomes the voters choose over in this example; (1) 2 Democrats, (2) 1 Democrat and 1 Republican, and (3) 2 Republicans. However, the voters who prefer the 1 Democrat and 1 Republican outcome also choose which Democratic and Republican candidate for whom they will vote. As mentioned, if a split-ticket voter doesn't have a preference among candidates of the same party, he/she just randomizes. If the voter does have a preference ranking, then he/she votes for his/her most preferred Republican and Democrat. However, among the split-ticket voters who have preference rankings for same party candidates, there is not a widespread systematic method of ranking candidates. The implication of this assumption is that in the limit the aggregate voting result will be the same as if all the split-ticket voters were randomizing over same party candidates.

Because the voters' utility functions are characterized by a symmetric, single peaked, concave function, it is a well-known result that a particular voter will prefer the policy outcome closest to his/her ideal point. Since voters vote sincerely, there are $s + 1$ types of voters and each type is grouped in a partition of the voter population.

Proposition 1 below provides the result that even if there is split-ticket voting among the electorate, one party will still win all the seats in a MMD election if split-ticket voters vote sincerely and there is not a widespread common system of ranking same party candidates. As is explained later in this paper, this single-party sweep effect of MMD's is a key reason the SMD mandate endures.

Proposition 1. *If voters vote sincerely and among split-ticket voters there is not a common systematic method of ranking candidates of the same party, then one party sweeps all the seats in a MMD House Election.*¹⁴

¹³The validity of this assumption receives strong empirical support in Calabrese (2000).

¹⁴Proof of Proposition I will be provided by the author upon request.

Proposition 1 indicates that one party will sweep all the seats. The relative accuracy of the model is supported by the fact that almost 90% of all multi-member district House elections resulted in one party winning all the seats.¹⁵ The basic logic of the proof of Proposition 1 is that since voters are voting over policy outcomes, and because there is not a common systematic method of ranking the candidates among split-ticket voters, candidates of the same party will receive approximately the same percentage of total votes if the number of voters is sufficiently large.

Proposition 1 does not provide any prediction or information about which party will sweep. Proposition 2 below provides a prediction about which party will sweep if it is assumed that the density function of the voter's ideal points, $f(i)$, is also symmetric on the $[0, 1]$ interval. This means median voter's ideal point is $i_m = 0.5$.

Proposition 2. *If the distribution of voter ideal points is symmetric, the party that sweeps a MMD House Election is the party the median voter prefers to sweep.*¹⁶

The proof of Proposition 2 applies the result of Proposition 1, that one party will sweep a multi-member district congressional election, and the implication of this result that there are only two possible outcomes of this type of election. Assuming $r > d$, these two possible outcomes as they are ordered left to right on the $[0, 1]$ interval are:

$$\text{Policy outcome if Democrats sweep} = qd + kr + jd + (1 - q - k - j)P$$

$$\text{Policy outcome if Republicans sweep} = qr + kr + jd + (1 - q - k - j)P.$$

Proposition 2 then extends Proposition 1 by imposing the restriction on the distribution of voters' ideal points to a symmetric distribution and showing under this restriction that of the two possible policy outcomes, the one that is closest to the ideal point of the median voter will be the outcome of the election.

A numerical example that can be solved computationally can be used to illustrate the results of Propositions 1 and 2. In this example, it is assumed that there are seven seats in a House district, each party nominates seven candidates, the district has seven million voters with seven votes each, and the voters' ideal points are distributed uniformly on the $[0, 1]$ interval. The weighting parameters k and j are each set to 0 to simplify the computations. The Republican Party's position, r , is arbitrarily set to 0.7. Also, it is arbitrarily assumed the median voter most prefers an outcome of 5 Democrats and 2 Republicans. Given these values for k , j , and r , the median voter would most prefer an outcome of 5 Democrats and 2 Republicans only if the Democrat Party's position is within an approximate range of 0.39 to 0.44. If the Democrat's position is at the upper end of this range at 0.44, then each Democratic candidate would receive approximately 3,990,000 votes and each Republican candidate would receive approximately 3,010,000 votes. If the Democrat's position is at the lower end of this range at 0.39, then each Democrat candidate would receive approximately

¹⁵The model may not be a perfect predictor because it relies on the assumption that among voters there is not a common method of ranking candidates of the same party. When this assumption does not hold and some candidates are substantially more prominent than others, a single party will not usually sweep. However, in Calabrese (2000) it was shown with a high level of statistical confidence that in almost all MMD congressional elections voters did not have a common systematic method of ranking candidates of the same party. Thus, MMD congressional elections in which some candidates of a party were substantially more prominent than others were relatively rare.

¹⁶Proof of Proposition 2 will be provided by the author upon request.

3,815,000 votes and each Republican candidate would receive approximately 3,185,000 votes. Therefore, even though the median voter most prefers an outcome of 5 Democrats and 2 Republicans, the Democrats will sweep all the district's seats. This result is consistent with Proposition 2 since the median voter prefers a Democrat sweep to a Republican sweep because the Democrat's position, which is within the range of $[0.39, 0.44]$, is closer to the median voter's ideal point, $i_m = 0.5$, than the Republican's position.

3. A model explaining why the national legislature mandated single-member districts

The Apportionment Act of 1842 was the first federal act to mandate single-member geographically defined congressional districts as the standard nationwide unit of election for members of the United States House of Representatives. When the federal government did not mandate SMD's, the unit of election in each state was determined by the state legislature. In this section, I apply the model developed above to explain why the national legislature in 1842 had an incentive to mandate single-member districts. It is not necessary to assume the density function of ideal points is symmetric to show these results.

In Proposition 3 below, I prove a result I refer to as the "opposite party of the President advantage" hypothesis. It means that in MMD elections a party receives a higher percentage of the total votes if the President is of the opposite party than if the President belongs to the same party.

Proposition 3. *The percentage of the total votes a party receives in a MMD House election is greater if the party does not control the presidency than if the party controls the Presidency, ceteris paribus.*¹⁷

A corollary to Proposition 3 is the stronger the President, that is the greater is $(1 - q - k - j)$, the greater is the advantage in MMD elections to the opposite party of the president. This means the stronger the President's influence on policy, the higher the percentage of the total votes the opposite party of the president is expected to receive, everything else remaining constant. Proposition 4 proves a related result; the more dominate a party is in Congress, the greater is the advantage to the opposing party in a MMD election.

Proposition 4. *A party will receive a greater percent of the total votes in a particular MMD House election the weaker the party is expected to be in the full Congress relative to the other party, ceteris paribus.*¹⁸

Propositions 3 and 4 are related to the Alesina-Rosenthal (1989) and Alesina-Londregan-Rosenthal (1993) moderating elections concept and the Presidential mid-term congressional electoral cycle. Since voters vote over policy outcomes that are weighted average of the positions of a voter's district delegation, the President's position, and the two parties' respective strengths in Congress, voters are able to use their respective congressional house elections to counterbalance the president and the dominant party in Congress. Hence, split-ticket voters will change their voting behavior depending on which party controls the Congress and the

¹⁷ Proof of Proposition 3 will be provided by the author upon request.

¹⁸ Proof of Proposition 4 will be provided by the author upon request.

Presidency and on the relative strengths of these two branches of government in affecting policy. For instance, in a district with two house seats, a percentage of voters who vote for 1 Democrat and 1 Republican when the President is a Democrat, will vote for 2 Democrats if the President is a Republican with the same ability to influence policy and with the same party controlling Congress. This “moderating” of government policy occurs regardless of where the median voter is located relative the Democrat’s and Republican’s positions.

4. Empirical test of the model and alternative hypotheses

Propositions 3 and 4 indicate that if a party controls both the Presidency and Congress it would definitely be to its advantage to mandate single-member districts. This is because in MMD elections a single party almost always wins all the state’s seats, and if a party controls both the Presidency and the Congress, the opposite party consequently gains an advantage in a House election. Hence, there is a higher probability that the opposite party would sweep all the state’s seats if the state had one MMD than if the state was divided into multiple single-member districts. Also, as mentioned above as a corollary to Proposition 3, the level of moderation of the President that occurs is related to the strength of the President. Again, this means the greater the value of $(1 - q - k - j)$, the greater the number of voters that will vote for the opposite party of the president in congressional elections. Also mentioned above is that the perceived power of the presidency in affecting future policy may generally be greater in Presidential midterm year congressional elections. If so, the model predicts that in midterm elections the party of the President loses votes relative to the preceding congressional elections. This prediction is consistent with the empirical observation that the President’s party always loses votes in midterm elections.¹⁹ Hence, the incentive for a party to mandate SMD’s may be greater in midterm congressional elections than in Presidential year congressional elections, *ceteris paribus*.

These various predictions of the model are strongly supported by the voting behavior of the two major parties, the Whigs and the Democrats, in both houses of the 27th Congress on the amendment to the Apportionment Act of 1842 which mandated single-member districts. In 1842 John Tyler, a Whig, was President. He ascended to office after the death of William Henry Harrison. His term was to run to March 4, 1845. The Whigs also controlled both houses of Congress. The Presidential Midterm Congressional elections in 1842 and 1843 for the 28th Congress would be subject to the SMD mandate.²⁰ My model would predict that in general the Whigs would support the amendment, while the Democrats would oppose it. The vote in the House on the amendment to the Apportionment Act took place on May 3, 1842. As the model predicts, almost all the Democrats voted against the amendment and almost all Whigs voted for it. In total, 97.7% of the voting House Democrats voted no and 86.8% of the voting House Whigs voted yes. On June 9, 1842 the Senate voted whether to expunge the amendment mandating SMD’s from the apportionment act passed by the House. Consistent with the model, all 27 Whig Senators that voted were against expunging the amendment from the House Bill, and all 19 Democratic Senators that voted were in favor.

¹⁹ Alesina and Rosenthal (1989), p. 379.

²⁰ Although a few states deliberately ignored the mandate in the Congressional elections for the 28th Congress in 1842 and 1843. Mostly on the grounds that it was unconstitutional. These states were New Hampshire, Georgia, Mississippi, and Missouri.

There are various alternative hypotheses for this voting behavior that involve incentives that are not captured by the model.²¹ One is that a representative's vote on whether to mandate SMD's was dependent upon the method in which he was elected. A representative elected in an SMD would have an incentive to support an SMD mandate in order to guarantee his incumbency advantage in the next election. Moreover, a representative elected from an MMD would lose some, or all, incumbency advantage if SMD's were mandated and the representative had to run in a newly formed SMD. Thus, it is plausible that House members elected in SMD elections were more likely to vote for mandating SMD's than members elected in MMD's, independent of party affiliation. This hypothesis is referred to as the "Incumbency Advantage Hypothesis."

Another hypothesis related to the above "Incumbency Advantage Hypothesis" is a hypothesis developed by Crain (1977). Crain showed that incumbents to state legislatures are less likely to win re-election the greater the proportion of MMD's there are in the state.²² Crain hypothesized that this is due to incumbents having to run against each other in MMD's, and thus there are less collusive agreements among incumbents to increase each other's electoral support and the probability of winning re-election.²³ Hence, single member districts act as incumbency protection devices. Legislative members with the least seniority need the most protection, and therefore are more likely to support a SMD mandate.

A third hypothesis is that representatives from smaller states were more partial to MMD's because its sweep effect enabled these states to send more politically unified delegations to Congress.²⁴ Although the larger states held a much higher number of seats in the House, their district elections caused their delegations to be divided along party lines. Conversely, multimember elections fostered partisan cohesion that helped the small states overcome their numerical disadvantage.²⁵ Thus, this hypothesis would predict that representatives from small states would be less likely to support the SMD mandate.

The final hypothesis is related to the regional and sectional strife between the North and South that was tied in with states' rights advocacy and slavery. Besides slavery and its expansion into the territories, other issues that were dividing the North and South included the National Bank, taxes on imports, and the fugitive slave act. The fear in the southern states of an omnipotent federal government controlled by the North remained quite pervasive in 1842 and many southern states strongly protected their relative autonomy from federal encroachment. The southern states' rights advocates argued that in mandating SMD's Congress was encroaching upon states' rights in a domain where it did not have the recognized power to do so. They felt Congress was clearly intruding upon a traditionally exclusive state activity, and, while Article I of the Constitution gives the federal government authority over Congressional

²¹ Flores, Chapter 3.

²² Greene (1993) extended Crain's empirical work by including variables measuring legislative salaries, the degree of opportunity for higher office, the nearness of the last reapportionment, and the size of the public sector, as well as examining data over many years as opposed to only the one year (1974) that Crain examined. Greene found, though, that there was only a very small, if any, significant increase in incumbency advantage as the proportion of MMD's in a state legislature increased.

²³ Examples of these collusive measures that Crain delineates include: the passage of legislation providing expense accounts for travel to the home district or for mailing privileges, direct access to media coverage, and influence over appointed positions.

²⁴ As mentioned in the introduction, this was probably one of the key contributing factors to why Congress did not prohibit MMD's before 1842.

²⁵ Zaggarri, p. 130.

elections, this power was not well-defined and therefore rather suspect.²⁶ This hypothesis would predict that states with strong states' rights sentiment, almost exclusively in the south, would be more likely to vote against the SMD mandate.

In order to test these competing hypotheses, I estimate a logistic regression model that predicts representatives' votes on the amendment to the 1842 Apportionment Act mandating SMD's. This model predicts the probability of voting yes on the mandate as a function of the representative's party, method by which the representative was elected, the representative's seniority measured by the number of terms in the House, the size of representative's state house delegation, and the representative's region of the country. The model specification for the probability of voting yes is:

$$\text{Pr(Yes)} = \frac{\exp(\beta_0 + \beta_1 \text{Party} + \beta_2 \text{DT} + \beta_3 \text{Terms} + \beta_4 \text{Size} + \beta_5 \text{RE})}{1 + \exp(\beta_0 + \beta_1 \text{Party} + \beta_2 \text{DT} + \beta_3 \text{Terms} + \beta_4 \text{Size} + \beta_5 \text{RE})} \quad (2)$$

where Party = 0 if the representative was a Democrat and 1 if a Whig, DT (District Type) = 0 if elected in a MMD and 1 if elected in a SMD, Terms = number of terms in the House, Size = number of members in the representative's state delegation, and RE (Region) = 0 if from a southern state and 1 if from a northern state.

The logistic regression results are presented in Table 2. The Model Chi-Square statistic indicates that the overall model is statistically significant. The competing hypotheses would predict that the coefficients of the logistic regression would all be positive except for the coefficient on the number of terms. As shown in column 1 of Table 2, all the coefficients are consistent with these predictions. However, the coefficients on the size of the representative's state delegation and on the number of terms the representative had been in the House are insignificant. Hence, the hypotheses that a representative was more likely to vote against the SMD mandate the smaller his state and the greater his seniority should both be rejected. Also, even though the coefficients on the region and district type variables are significant, their odds ratios are extremely small compared to the odds ratio for the party variable coefficient. This means party affiliation had by far the strongest influence on voting on the SMD mandate. The overwhelming influence of party affiliation is further illustrated by comparing the logistic regression results when party is the only independent variable, presented in column 2, with the results of the full model, presented in column 1. Adding the district type and region variable to the model only reduces the classification error by 2 percent and only increases the Nagelkerke *R* Square by about 4 percent. These results constitute clear evidence the incentives associated with the "Incumbency Advantage" and the region or states' rights hypotheses were dominated by party affiliation, as would be predicted by the model in this paper.

5. The persistence and the irreversibility of the single-member district mandate

The discussion above presents persuasive evidence supporting the model's prediction that the strongest party in the federal government has a strong incentive to support mandating SMD's. Related to this prediction is the model's prediction that once SMD's are permanently mandated by a law, this method of election is almost certainly locked-in. This is because it is extremely unlikely that a party that controls the federal government would support a law that strikes down a SMD mandate. The dominant party is at a disadvantage in an MMD election,

²⁶ Flores, Chapter 3.

Table 2 Logistic regression results

Variable	(1)	(2)
Constant	-6.034	-3.689
<i>p</i> -value	0.000	0.000
Odds ratio	0.002	0.025
Party (0 = Dem, 1 = Whig)		
Coefficient	5.690	5.340
<i>p</i> -value	0.000	0.000
Odds ratio	295.85	208.41
District type (0 = MMD, 1 = SMD)		
Coefficient	1.312	
<i>p</i> -value	0.042	
Odds ratio	3.713	
Terms (# of terms in House)		
Coefficient	-0.013	
<i>p</i> -value	0.945	
Odds ratio	0.987	
Size (# in state Delegation)		
Coefficient	0.000	
<i>p</i> -value	0.988	
Odds ratio	1.000	
Region (0 = South, 1 = North)		
Coefficient	1.814	
<i>p</i> -value	0.001	
Odds ratio	6.134	
Model chi-square	168.89	154.28
Significance level	0.000	0.000
Nagelkerke <i>R</i> square	0.760	0.717
Percent correctly classified	91.5	89.5

and thus it would never be in its interest to overturn a SMD mandate. This is a compelling example of how an institutional policy once adopted becomes immune to change.

Congressional voting behavior and the provisions of the subsequent Apportionment Acts passed after 1842 provide additional evidence in support of the model's prediction that the strongest party would want to mandate SMD's and the weaker party would oppose such a mandate. Apportionment Acts continued to be passed after each national census up to 1911. These Apportionment Acts expired after ten years. Thus, the nationwide SMD mandate would have to be renewed in each subsequent apportionment act. The issue as to whether to mandate SMD's was always on the agenda. If the model's prediction that the strongest party would support an SMD mandate and the other party would not is correct, then the model would predict that Congress would in general vote along party lines on this issue. Consequently, the model predicts that if one party controlled both Houses of Congress and the Presidency, then SMD's would definitely be mandated. As stated, these predictions are borne out by the congressional voting behavior and the provisions of the subsequent Apportionment Acts passed after 1842. The Republican Party controlled both the Presidency and Congress in five of the seven times Apportionment Acts were voted on after 1842 up to 1911.²⁷ These years were 1862, 1872, 1882, 1891, and 1901. In each of these apportionment acts SMD's were mandated and the votes on the bills were for the most part along party lines. For instance in

²⁷ Martis, 1989 and Guide to U.S. Elections.

1862 the vote was strongly along party lines, with almost all the Republican Congressmen supporting it and almost all Democrats and Unionists against it. Of course, at this time the Civil War was in progress and Republicans dominated the Union government.

The Apportionment Act of 1872 also contained a provision mandating SMD's. The model would in general predict Republicans would have supported the 1872 SMD mandate and the Democrats would have opposed it. In fact, all Congressional Republicans supported it and 3/4 of the Democrats opposed it. This voting pattern continued in the 1882, 1891 and 1901 votes.²⁸

The federal government was divided when the votes took place on the Apportionment Acts of 1850 and 1911. It was ambiguous in these years as to which party was the strongest party and would be disadvantaged by the MMD's, and, consequently, which party the model would predict would support mandating SMD's. For instance, in 1850 the Democrats controlled both houses of Congress, but the president, Millard Fillmore, was a Whig. A party that controls only one branch of government may or may not be at a disadvantage in MMD elections. For example, if the party controls the Presidency but not Congress, but the President has a very strong influence over policy relative to Congress in that $q + k + j$ is relatively low, then the party of the President would be disadvantaged by MMD elections. On the other hand, if the opposite party of the president is very strong in Congress, then the party of the president is advantaged by MMD elections. Either way, even if the government is divided, the model in this paper would predict that a vote on mandating SMD's would be split along party lines because only one party would still in general benefit by mandating SMD's. Hence, when the government is divided, SMD's will not necessarily be mandated. This is exactly what happened in 1850. The Democrats in Congress forced the district provision of the 1842 law to be dropped from the 1850 law.²⁹ The Apportionment Act of 1850 applied to the Presidential Midterm Congressional Elections of 1850 and 1851. As mentioned above, the President is likely to be perceived to be more powerful in midterm congressional elections than in presidential election year congressional elections. Thus, the Democrats may have sensed that the populace wanted to counterbalance the president and his party and thus the Democrats would gain an advantage by permitting MMD House elections.

When the 1911 Apportionment Act became law on August 8th of that year, the Democrats controlled the House, the Republicans controlled the Senate, and William Taft, a Republican, was President. However, the Democrats were emerging as the strongest national party. In 1910 congressional elections Democrats gained 53 seats in the House of Representatives and became the majority party. The Democrats also added 10 seats in the senate. Also, at this point in time the Progressive (Bull Moose) Party led by former Republican President Theodore Roosevelt was splitting off from the Republican Party, severely weakening it. The Democrats dominated the 1912 elections. Woodrow Wilson won the 1912 Presidential election in a landslide with Roosevelt and Taft splitting the Republican vote. The Democrats also took control of the senate and increased their majority in the house. Since the Democrats were likely anticipated to be the stronger party in the 1912 elections, the model in this paper would predict that before the elections the Democrats would support a SMD mandate and the Republican would be against it. In 1911, the Democratic controlled house passed an Apportionment Bill which mandated SMD's with the vote almost strictly along party lines. However, the Republican controlled senate amended the House bill to require if a state

²⁸ Poole and Rosenthal, 2002.

²⁹ Flores, Chapter 3.

was apportioned an increase in the number of representatives, it must elect the additional representatives at-large, that is without congressional districts, until the state redistricted. The vote on this amendment was strictly along party lines except with one southern Democrat senator supporting it. The Democratic senators then attempted to amend the amended bill by substituting the “requirement” of at-large elections with only Congressional “authorization” of at-large elections for additional representatives. All the Democratic senators supported this change. However, all but one of the Republican senators voted against it. Hence, the amended senate bill requiring at-large elections for additional representatives was passed as a compromise between the House and Senate in order to get the Apportionment Act and its other provisions enacted. The votes on the bills before the compromise was struck were almost strictly along party lines, with the Democrats supporting an SMD mandate, consistent with the prediction of the model.

When the Congress passed the Apportionment Act of 1911, the prevailing notion was that the SMD provision was permanent.³⁰ Congress would not pass an apportionment act after the 1920 Census because there were serious concerns about the accuracy of the census figures.³¹ In 1929 both branches of government were again controlled by the Republicans. In that year Congress passed a combined census-reapportionment bill which established a permanent method for apportioning House seats according to each census. This bill, however, failed to enact any district mandates because it was thought the 1911 requirements were still applicable. The Supreme Court ruled otherwise in 1932 in *Wood v. Broom* deciding that the provisions of each apportionment act affected only the apportionment for which they were written. Thus the SMD requirement, last stated in the act of 1911, expired immediately with the enactment of the subsequent apportionment act. After this decision, Congress did not vote on any districting legislation for the next thirty-five years, mainly due to continuing judicial involvement with a series of court cases on congressional districting controversies up until the early 1960's.³²

In 1967 Congress passed a law, the Uniform Congressional District Act (PL 90–196), permanently prohibiting at-large and other multi-member elections by states with more than one House seat. This law was different than previous acts on mandating SMD's in that it was not part of a decennial Apportionment Act and thus did not expire after ten years. Its purpose was to permanently mandate SMD's. The Democrats controlled both Houses of Congress and the President was Lyndon Johnson, a Democrat. The Democrats had controlled both Houses since 1955. The model would predict that the Democrats as the dominant party would in general support mandating SMD's and the Republicans would in general oppose it. The vote on the Uniform Congressional District Act was strongly in accord with the model's predictions despite the influence of other issues at the time. These other issues included the concern, in the wake of the 1965 Voting Rights Act, that southern states may resort to winner-take-all at-large elections to dilute the voting strength of newly-enfranchised African-Americans in the South. In fact, a contingent of Southern Democrat Representatives did want to permit MMD's and voted against this bill, while some Republican Representatives supported this bill so that the southern states could not implement this strategy. The actually party breakdown of the roll call vote was 89% of the Democrats supporting it, with 96% of the Northern Democrats and only 76% of the Southern Democrats voting yes, and 10% of the Republicans supporting it.

³⁰ Ibid.

³¹ Celler, p. 271.

³² Flores, Chapter 4.

The historical evidence on congressional voting on mandating SMD's overwhelmingly supports the predictions of the model. The SMD mandate was repeatedly re-affirmed in the apportionment acts after 1842 when a single party controlled both branches of the federal government, and always with the vote along party lines. Even when the federal government was divided and SMD's were either not mandated (1850) or mandated with exceptions as a compromise in order to pass the whole apportionment act (1911), the specific votes on proposed amendments to mandate SMD's were always along party lines with the relatively stronger party in support. Single-member districts were permanently mandated in 1967 when one party controlled the federal government. No law has ever passed striking down the SMD mandate, although such bills have since periodically been introduced in Congress, notably three separate times from 1989 to 2000.³³ Consistent with the model and especially Proposition 4, in each of these three cases a member of the House of Representatives from the minority party in both the House and Senate introduced the bill.

6. Conclusion

The central questions this paper addresses are why single-member congressional districts were first mandated by the Federal Government in 1842, and why this mandate endures to the present. To answer these questions, I develop a formal model of Multi-member District Congressional Elections. It is assumed in this model that in MMD congressional elections voters vote over possible policy outcomes that depend not only on the particular house delegation members' positions, but also on the strength and the political party affiliation of the President, and on the relative strength of the two parties in Congress. Hence, voters can use their congressional votes to moderate the extant strongest branch and political party in the federal government. This means that a congressional candidate that belongs to the opposite of the President will receive more votes than if the candidate belonged to the President's party, *ceteris paribus*. This also means that a congressional candidate that belongs to the minority party in Congress will generally receive more votes than if the candidate had belonged to the majority party, *ceteris paribus*. These predictions are consistent with the prevalence of split-ticket voting and the consistent pattern of the President's party losing votes in presidential midterm congressional elections vis-à-vis the preceding congressional elections.

The model also predicts that if the electorate votes sincerely, one party will sweep all the seats in a MMD House election even if there is split-ticket voting among the electorate. There have been single-party sweeps in 90% of the MMD elections in history. This paper shows that due to both the single-party sweep effect of MMD elections and that the dominant party in the federal government is disadvantaged in congressional elections, it is in the dominant party's interest to mandate SMD's for all congressional elections. This result mostly explains the vote on the initial SMD mandate in the 1842 Apportionment Act. The Whigs controlled both branches of the federal government and pushed through the mandate. A logit regression analysis of the House vote on the amendment to the 1842 Apportionment Act that mandated SMD's indicated that other possible influences affecting this vote, hypotheses related to incumbency advantage and regional interests, were far less significant. This analysis showed that the incentives captured by the model developed in this paper explains much better why this mandate passed compared to other hypothesized reasons.

³³ Library of Congress. Thomas <http://thomas.loc.gov/home/multicongress/multicongress.html>.

All the apportionment acts passed after 1842 expired ten years after each was enacted. In the congressional consideration of these apportionment acts, the issue of mandating SMD's as the nationwide standard was always on the agenda, and usually as an amendment to the act. Consistent with the prediction of the model in this paper, the strongest party during the consideration of each apportionment act was in support of the mandate and the opposite party was opposed. Hence, SMD's were mandated in all of the apportionment acts when one party controlled both houses of Congress and the Presidency. If the neither party controls both houses of Congress and the Presidency, the implication of the model is that a proposed SMD mandate would not necessarily pass. For instance, if the President's party was the strongest party, then the opposite party, which is assumed to control at least one of the houses of Congress, would oppose an SMD mandate. This is what happened in 1850 when the Democrats controlled both houses of Congress and the President was a Whig. A proposed SMD mandate in 1850 failed to make it out of Congress. In 1911 voting on an apportionment act again took place when the government was divided, and only a partial SMD mandate was enacted. This mandate was partial in the sense it permitted significant exceptions. The 1911 partial mandate only passed as part of compromise to pass the whole apportionment act and its other provisions. Before the compromise was made and the vote occurred on the whole apportionment act, the specific votes on proposed amendments mandating SMD's were along party lines.

Unlike the previous SMD mandates that were part of temporary apportionment acts, the 1967 mandate was a law with no expiration date. Again consistent with the predictions of the model, the 1967 Uniform Congressional District Act passed when a single-party controlled both branches of the federal government. Also, the model predicts that since it is never in the interest of the strongest party in the federal government to permit MMD's, the Uniform Congressional District Act will never be overturned. Thus, because this law does not automatically expire, the model projects that SMD elections are the *permanent* standard nationwide method of electing members of the House of Representatives. This case illustrates that institutional change can be, essentially, irreversible. It would be of interest to investigate whether there are other institutional constraints governing state and local governments that have a similar enduring quality.

In addition to investigating whether other irreversible institutional governmental constraints exist, there are other possible extensions to the analysis in this paper. One is to test the results on local and state level politics and possibly on relevant international political systems such as Japan's. Many city councils are elected in at-large elections, which are a type of MMD election. One prediction of my model is that the minority would not be represented in these types of elections. There is vast amount of empirical data that could be used to test this prediction and other predictions of the model. These are promising avenues for further research.

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