

# Political Polarization and Multi-Member Districts: An Analysis of the New Zealand 1993 Referendum

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## Abstract

Polarization is an increasingly alarming issue in United States politics. Citizens and politicians alike are unwilling to work with those on the “other side.” One issue exacerbating polarization trends in the US is citizens’ perception that their voices are not being heard—that their democracy is unrepresentative. This is partly due to the first-past-the-post electoral system employed in the US. In this paper, I first explore a potential remedy to this issue: multi-member districts (MMD). I review MMDs and the various electoral systems to pair with them both in the US and abroad, contrasting benefits and drawbacks to each model, including the racial, electoral, and gender implications of MMDs on the elected body. I then turn to the case of New Zealand, which reformed to MMDs and proportional representation in 1996 following a 1993 binding referendum. By conducting a synthetic control analysis, I conclude the New Zealand MMD reform resulted in lower polarization over the preceding elections. I finish the article with a recommendation to adopt a similar reform in the United States.

## 1. Introduction

Political polarization is at an all-time high in the United States.<sup>1</sup> Americans’ esteem for their self-identified political party is increasing,<sup>2</sup> and, importantly, their distrust of the opposite party is increasing as well.<sup>3</sup> A rise in negative

1. Abramowitz, Alan L., and Kyle L. Saunders. “Is Polarization a Myth?” *The Journal of Politics* 70, no. 2 (April 1, 2008): 342–55. <https://doi.org/10.1017/S002238160800493>.
2. Abramowitz, Alan, and Jennifer McGoy. “United States: Racial Resentment, Negative Partisanship, and Polarization in Trump’s America.” *The ANNALS of the American Academy of Political and Social Science* 681, no. 1 (January 1, 2019): 137–56. <https://doi.org/10.1177/0002716218811309>.
3. Helzel, Gordon, and Kristin Laurin. “Polarization in America: Two Possible Futures.” *Current Opinion in Behavioral Sciences*, Political Ideologies, 34 (August 1, 2020): 179–84. <https://doi.org/10.1016/j.cobeha.2020.03.008>.
4. Schwabbe, Michael C., Geoffrey L. Cohen, and Lee D. Ross. “The Objectivity Illusion and Voter Polarization in the 2016 Presidential Election.” *Proceedings of the National Academy of Sciences* 117, no. 35 (September 1, 2020): 21218–29. <https://doi.org/10.1073/pnas.1912301117>.
5. Duverger, Maurice. *Political Parties: Their Organization and Activity in the Modern State*. London: Methuen, 1964. <http://archive.org/details/politicalparties0000duve>.

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partisanship was especially pronounced in the presidential election of 2016.<sup>4</sup> The result of this increased polarization is a Congress made up of Democratic representatives that are increasingly left-of-center and Republican representatives that are increasingly right-of-center with fewer moderates in the middle to facilitate cooperation and bipartisanship. Polarization can lead to legislative gridlock and should be viewed as a grave threat to democracy.

One explanation for the cause of such increased polarization lies within the electoral system of the United States. Westminster-style democracies (such as those seen in the UK and its former colonies) employ single-member districts (SMD) with first-past-the-post (FPTP) plurality elections. This type of electoral system incentivizes voters and parties towards a two-party state and makes third-party candidates largely nonviable.<sup>5</sup> Candidates and parties with similar, but not identical, values must merge, or they will fail in the face of a united opposition. As a result, parties continue to coalesce until the two strongest parties remain, a trend Duverger termed “polarization.”<sup>6</sup>

With only two parties, it is much easier for voters to adopt an “Us versus Them” mentality leading voters to sort themselves into homogenous districts of co-partisans.<sup>7</sup> The number of swing districts in the House of Representatives decreased from over 180 in 1996 to less than eighty in 2020.<sup>8-9</sup> This segregation increases demonization and extreme distrust of the out-group.<sup>10</sup> Consequently, partisan “tribalism,” or the tendency to favor in-groups at the expense of out-groups, is also rising.<sup>11</sup> As one apparent root cause of such polarization, the American electoral system is arguably in need of reform.

One former Westminster-style democracy decided to do away with FPTP elections altogether. In 1993, New Zealand held a binding referendum to replace FPTP with multi-member districts elected in a mixed-member proportional electoral system. Multi-member districts (MMDs) present an interesting policy alternative to Westminster-style SMDs as they promise to better achieve proportional results. MMDs are not a new idea in the US (the Senate provides an example of two-member districts in each state). However, their implementation has not delivered the desired results.

In this paper, I provide an overview of MMDs with special attention paid to their potential application in the United States as a remedy for heightened political polarization. I cover the history of MMDs in the US and why they have increased, rather than decreased, disproportionality. Next, I explore the various electoral systems to pair with them and the electoral, gender, and race implications they have on the electorate. Then, I examine the New Zealand

6. Duverger, Maurice. “Factors in a Two-Party and Multiparty System.” *Party Politics and Pressure Groups*, 1972, 23–32.
7. Cho, Wendy K. Tam, James G. Gimpel, and Iris S. Hui. “Voter Migration and the Geographic Sorting of the American Electorate.” *Annals of the Association of American Geographers* 103, no. 4 (July 1, 2013): 836–70. <https://doi.org/10.1080/00045608.2012.720229>.
8. Skelley, Geoffrey. “Changing How Primaries Work Probably Won’t Make Politics Less Divisive.” *Five Thirty Eight* (blog), July 19, 2021. <https://fivethirtyeight.com/features/changing-how-primaries-work-probably-wont-make-politics-less-divisive/>.
9. Defined as an average margin of difference of how a district votes and how the country overall votes within 10 points. For more information: <https://fivethirtyeight.com/methodology/how-fivethirtyeight-houses-and-senate-models-work/>.
10. Warner, Benjamin R., and Astrid Villamil. “A Test of Imagined Contact as a Means to Improve Cross-Partisan Feelings and Reduce Attribution of Malevolence and Acceptance of Political Violence.” *Communication Monographs* 84, no. 4 (October 2, 2017): 447–63. <https://doi.org/10.1080/105637751.2017.1336779>.
11. Defined as an average margin of difference of how a district votes and how the country overall votes within 10 points. For more information: <https://fivethirtyeight.com/methodology/how-fivethirtyeight-houses-and-senate-models-work/>.

reform to MMDs and proportional representation with a synthetic control design evaluating political polarization before and after the reform. I conclude with policy recommendations for future MMD and electoral reform in the United States.

**2.1 MMD ELECTORAL SYSTEMS**

MMDs can theoretically be paired with many different types of electoral systems, demonstrated by the wide variety of electoral systems seen in MMDs in different countries around the world. Electoral system design has important implications on the outcome of elections in terms of proportionality and optimal electoral systems used with MMDs and the countries or states that are currently implementing them.

**2.1.1 MULTIPLE NON-TRANSFERABLE VOTE**

Of the ten US state legislatures with MMDs, eight (AZ, MD<sup>17</sup>, NH, NJ, ND, SD<sup>18</sup>, VT, and WV) elect their representatives using multiple non-transferable voting (MNTV), also known as block voting). In MNTV, voters get as many votes as there are seats in the MMD. The candidates with the highest vote totals are elected. MNTV is not proportional and tends to produce landslide victories for the majority party.<sup>19</sup> Parties are incentivized to run as many “clones” of the most popular candidate as there are seats, often resulting in a complete sweep of all seats in the MMD.<sup>20</sup>

**2.1.2 POST VOTING**

The other two state legislatures using MMDs (ID and WA) and the US Senate elect their candidates using post voting, which divides the MMD into separate seats. Instead of running in a pool, candidates run for a specific seat, much like they would in a SMD. For most purposes, MMDs with post voting behave very similarly to SMDs with FPTP as both result in a

**2.1.5 PARTY-LIST PROPORTIONAL REPRESENTATION**

In party-list proportional representation (PLP) voting, political parties publicly post lists of their candidates on the ballot. When voters go to the polls, they vote for their preferred party rather than candidate. Seats are then allocated to the parties proportionally using various statistical methods. The parties fill the seats granted to them with the candidates on their list. PLP offers nearly perfect proportionality, but voters do not get to vote for their candidates directly and, in some cases, do not have any control over the candidates on the party list. PLP is especially popular throughout Europe and Latin America.<sup>27</sup>

**2.1.6 MIXED-MEMBER PROPORTIONAL REPRESENTATION**

Mixed-member proportional representation (MMP) is a hybrid system where voters get two votes. The first vote is cast for a candidate running in an SMD. These votes are summed and the candidate with a plurality of votes is elected for that district, as in FPTP voting. The second vote cast is for a party list, as in PLP. The party list votes are used to allocate seats in a compensatory manner to the parties that did not win many seats in the first vote. MMP achieves proportional representation with the compensatory party list votes while also retaining the direct link between voter and representative as in traditional SMDs. MMP is currently utilized in Germany, New Zealand, and Bolivia.<sup>28</sup>

**2.2 MMDs IN THE USA**

Today, all 435 members of the House of Representatives represent SMDs. However, SMDs have not always been the norm. For many years, Representatives were elected in MMDs. The US Constitution does not stipulate how states must design their electoral districts; thus, all

guidance on the issue has come from Congress. Starting with the 1842 Apportionment Bill, Congress began to outlaw MMDs, mandating geographically defined SMDs in the House.<sup>29</sup> MMDs continued under various exceptions until 1967, when Congress passed the Uniform Congressional District Act, finally ending MMDs in the House.

The Supreme Court has weighed in on MMDs in multiple cases. The Court established the precedent that congressional and state legislative districts must be roughly equal in population in *Wesberry v. Sanders* (1964) and *Reynolds v. Sims* (1964), respectively. Following these decisions, the Court ruled in *Fortson v. Dorsey* (1965) that MMDs do not violate the Equal Protection Clause with the logic that MMDs do not disenfranchise voters if there is ‘substantial equality of population’ as established prior. In *Burns v. Richardson* (1966), the Court reiterated that there was no requirement for legislative districts to be single member given the MMDs were not designed to disenfranchise any groups. However, in 1971, the Court held in *Connor v. Johnson* (1971) that “single-member districts are generally preferable to large multi-member districts.”

While slowly declining in prevalence, MMDs continue to see usage in state legislatures. In the early 1960s, over half of state legislature representatives came from MMDs. This began to change during the 1960s, and by 1984 only 26 percent of state house representatives and 7.5 percent of state senators were elected from MMDs.<sup>30</sup> Today, ten states elect representatives from MMDs in at least one legislative chamber: Arizona, Idaho, Maryland, New Hampshire, New Jersey, North Dakota, South Dakota, Vermont, Washington, and West Virginia, with West Virginia set to eliminate them in the 2020 redistricting cycle.<sup>31</sup>

18 Districts 26 and 28 are elected using post voting  
 19 Calabrese, Stephen. “Multi-member District Congressional Elections.” *Legislative Studies Quarterly* 23, no. 4 (2000): 611–43. <https://doi.org/10.2307/440437>.  
 20 Elkand, Edith, Piotr Faliszewski, and Arkadii Shliko. “Cloning in Elections.” Proceedings of the AAAI Conference on Artificial Intelligence 24, no. 1 July 4, 2010: 768–73.  
 21 Cox, Gary W. “Strategic Electoral Choice in Multi-Member Districts: Approval Voting in Practice.” *American Journal of Political Science* 26, no. 4 (1984): 722–36. <https://doi.org/10.2307/2110996>.  
 22 Lipshart, Arond, and Bernard Groffman. “Electoral Laws and Their Political Consequences.” 1986. <https://www.socsci.uci.edu/~bjgroffman/R21%20UGrefman%20hand%20liphart%201986%20litrep%20to%20%20Electoral%20Laws..pdf>  
 23 Fujimura, Naotomi. “Running Multiple Candidates, Dividing the Vote Under the Single Nontransferable Vote System: Evidence From Japan’s Upper House Elections.” *Asian Politics & Policy* 9, no. 3 July 1, 2017: 402–26. <https://doi.org/10.1111/aspp.12331>.  
 24 Tideman, Nicholas. “The Single Transferable Vote.” *Journal of Economic Perspectives* 9, no. 1 (March 1995): 27–38. <https://doi.org/10.1257/jep.9.1.27>.

## 2. Multi-member districts

Multi-member districts are legislative districts with multiple representatives elected to serve the same geographical area. This can also be referred to as having a “district magnitude” greater than one. This is in contrast with the SMD structure that is most prevalent in the United States, the United Kingdom, and their former colonies where one legislator represents each district.<sup>12-13</sup> District magnitude can vary widely. Some countries, such as South Africa, maximize district magnitude, electing all representatives from one country-wide district.<sup>14</sup> In this case, each elected official represents the country’s entire population. Others vary district magnitude between districts, as is seen in the lower house of Ireland, which elects representatives from three, four, and five-member districts.<sup>15</sup>

Proponents of MMDs claim MMDs better achieve proportional representation than SMDs, facilitate minority parties, and reduce the need for redistricting and gerrymandering as population changes can simply be reflected in a change in the district magnitude. These benefits, however, come at the cost of a decreased link between voter and candidate, and a potential lack of accountability in the elected representative, as they are not solely beholden to their constituents.<sup>16</sup>

## 3. Electoral implications of MMD

Studies have shown the electoral advantage to incumbent candidates is weaker in MMDs than SMDs.<sup>32</sup> This indicates candidates in MMDs are more vulnerable to losing their reelection bid and suggests higher amounts of turnover in legislative chambers represented by MMDs. MMDs have also been shown to encourage coalition-building between representatives and report higher levels of collaboration. Representatives from the same geographic area in an MMD are likely to have shared values and a shared incentive to perform positive actions for their district, even if they are members of opposing parties. The coordinated efforts between MMD representatives from the same district are mutually beneficial as they positively affect their shared constituents.<sup>33</sup>

MMDs in the United States have traditionally tended to be more ideologically diverse. Studies done comparing the Arizona State House (two-member MMDs) and Senate (SMD) and the Illinois House (MMD) and Senate (SMD) have consistently shown a more ideologically extreme partisan makeup in the MMD chamber.<sup>34</sup> In the Illinois case, this difference was lost when the House transitioned to SMDs.<sup>35</sup>

## 4. Gender implications of MMD

One highly cited feature of MMDs is their tendency to elect more female representatives than traditional SMDs.<sup>36</sup> States of varying size, partisan lean, levels of urbanization, and culture have shown this effect, with the common thread among these states being that they use MMDs.<sup>37</sup> Additionally, research has shown MMDs to increase women’s “substantive representation” in state legislatures, meaning more issues that disproportionately affect women are addressed than in traditional SMD chambers.<sup>38</sup> However, the link between female representation and MMDs is disputed. Some researchers have found the connection to be small and statistically insignificant.<sup>39</sup> Other studies have found the electoral system used did not have any significant effect on women’s representation in the elected body.<sup>40</sup> It has been theorized that the correlation between MMDs and women’s representation is spurious and simply comes down to the fact that more women run in MMDs; thus, more women are elected.<sup>41</sup>

## 5. Racial implications of MMD

The main impetus behind the decline of MMDs in the United States during the Civil Rights Movement of the 1960s was the perceived effect of US MMDs on minority voters. MMDs (with MNTV voting) were thought to dilute minority votes and prevent the election of minority candidates. During this time, the Uniform Congressional District Act of 1967 was passed, formally ending MMDs in the House of Representatives. Additionally, the Supreme Court ruled against the MMDs of North Carolina as racially gerrymandered in *Thornburg v. Gingles* (1986), stating the MMD maps “impair the ability of ... cohesive groups of Black voters to participate equally in the political process and to elect candidates of their choice.”

This perception of racial inequality in MMDs in the United States is supported by research. Researchers have found MMDs with MNTV voting to reduce the likelihood of minority electoral success<sup>42</sup> and to result in less diverse delegations than SMDs.<sup>43</sup> They have found legislatures with these types of MMDs to have significantly less substantive representation of minorities in the form of less generous welfare policies.<sup>44</sup> Furthermore, transitioning from these MMDs to SMDs has been shown to lead to gains in Black representation<sup>45</sup> with one paper stating, “the effect of changing to [single-member] districts is unequivocally toward greater equity.”<sup>46</sup> This effect has been shown to be beneficial for Latinos as well.<sup>47</sup>

However, the cause of racial discrimination in MMDs was not due to the MMDs themselves, but to the prevalence of underlying racism in the states which have had MMDs, particularly in the Deep South.<sup>48</sup> Moreover, MMDs with proportional representation have been shown to have better representation for racial

32 Cox, Gary W., and Scott Morgenstern. “The Incumbency Advantage in Multimember Districts: Evidence from the U. S. States.” *Legislative Studies Quarterly* 20, no. 3 (1995): 329–49. <https://doi.org/10.2307/440224>.

33 Kirkland, Justin H. “Multimember Districts: Effect on Collaboration between U.S. State Legislators.” *Legislative Studies Quarterly* 37, no. 3 (2012): 329–53. <https://doi.org/10.1111/j.1939-9102.2012.00500.x>.

34 Berrelli, Anthony M., and Lillard Richardson. “Ideological Extremism, Branding, and Electoral Design: Multimember versus Single-Member Districts.” SSRN Scholarly Paper, Rochester, NY: Social Science Research Network, 2008. <https://papers.ssrn.com/abstract=1143474>.

35 Adams, Greg D. “Legislative Effects of Single-Member Vs. Multi-Member Districts.” *American Journal of Political Science* 40, no. 1 (1996): 129–44. <https://doi.org/10.2307/1211197>.

36 Schweidt-Bayer, Leslie A., and William Mishler. “An Integrated Model of Women’s Representation.” *Journal of Politics* 67, no. 2 (2005): 407–28. <https://doi.org/10.1111/j.1468-2508.2005.00523.x>.

25 Gallagher, Michael. “Ireland: The Archetypal Single-Transferable Vote System (1997) —.” 1997. <https://acproject.org/regions-en/countries-and-territories/IE/cases-studies/ireland-the-archetypal-single-transferable-vote-system-1997>.

26 NYC Board of Elections. “Ranked Choice Voting.” 2021. <https://vote.nyc.gov/ranked-choice-voting>.

27 Dindar, Hayrullah, Gilbert Lafford, and Jean Laine. “Referendum Paradox for Party-List Proportional Representation.” *Group Decision and Negotiation* 30, no. 1 (February 1, 2021): 191–220. <https://doi.org/10.1007/s10726-020-09713-y>.

28 Gallagher, Michael, and Paul Mitchell. *The Politics of Electoral Systems*. OUP Oxford, 2005.

29 Galbarrés, Stephen. “Multimember District Congressional Elections.” *Legislative Studies Quarterly* 25, no. 4 (2000): 611–43. <https://doi.org/10.2307/440437>.

30 Berrelli, Anthony M., and Lillard Richardson. “Ideological Extremism, Branding, and Electoral Design: Multimember versus Single-Member Districts.” SSRN Scholarly Paper, Rochester, NY: Social Science Research Network, 2008. <https://papers.ssrn.com/abstract=1143474>.

31 Russell, Charles R. “Creating Single-Member House Districts in West Virginia.” *West Virginia Law Review* 120 (2018 2017): 185.

minorities.<sup>49</sup> This indicates that the racial equity shortcomings of MMPs in the US were not due to the MMP themselves, but rather the electoral system attached to them.

## 6. MMP reform in New Zealand

From the meeting of the first Parliament in 1854 during the colonial era until very recently, New Zealand employed the typical Westminster electoral system of SMDs with FPTP plurality voting. Owing to this system, New Zealand experienced a period of two-party dominance from the 1930s to the 1990s. The National and Labour parties formed every government during the period. Only the minor Social Credit party gained seats otherwise, although never more than two in one Parliament. This two-party system echoed the Conservative-Labour and Democrat-Republican systems still seen in the UK and US, respectively.<sup>50</sup>

Uneasiness with the two-party system began when National won two successive elections, in 1978 and 1981, without a plurality of the national vote share.<sup>51</sup> In the next election, in 1984, Labour ran on an electoral reform campaign. When elected to power, Labour created a Royal Commission on the Electoral System, which recommended reform to MMP.<sup>52</sup> However, neither major party was incentivized to change the status quo. In 1990, the National Party came into government with its largest majority ever, winning sixty-seven of ninety-seven seats (69 percent) while only garnering 48 percent of the votes cast.<sup>53</sup> Meanwhile, a collection of small parties (New Labour, Greens, and Christian Heritage) won 17.1 percent of the vote and only 1 percent of seats.<sup>54</sup>

Neither major party took the reform to MMP seriously. Instead, the parties capitalized on voter frustration with the increasing disproportionality of the FPTP system and used the promise of reform as a campaign tactic. National made a campaign promise in 1990 to hold a referendum on replacing FPTP, believing the referendum would not pass. However, a strong push from a coalition of third parties, recognizing the current system to only benefit National and Labour, led to the overwhelming success of the 1992 non-binding referendum.<sup>55</sup> The results showed 84.7 percent of voters in favor of moving away from FPTP and 70.5 percent in favor of MMP.<sup>56</sup> This led to a second, binding referendum in 1993, held concurrently with the general election, pitting MMP directly against FPTP. Despite a strong opposition campaign, the referendum passed with 53.86 percent of the vote.<sup>57</sup> A third referendum was held regarding MMP in 2011, with voters again approving the new electoral system.

The new MMP system in New Zealand is typical in that candidates are

37 Mathland, Richard E., and Deborah Dwight Brown. "District Magnitude's Effect on Female Representation in U.S. State Legislatures." *Legislative Studies Quarterly* 17, no. 4 (1992): 469-92. <https://doi.org/10.2307/433862>.

38 Clark, Jennifer Hayes, and Veronica Caro. "Multimember Districts and the Substantive Representation of Women: An Analysis of Legislative Cosponsorship Networks." *Politics & Gender* 3, no. 01 (March 2013): 1-30. <https://doi.org/10.1017/S1743923X12000670>.

39 Welch, Susan, and Donley T. Studlar. "Multi-Member Districts and the Representation of Women: Evidence from Britain and the United States." *The Journal of Politics* 52, no. 2 (May 1, 1990): 391-412. <https://doi.org/10.2307/2131899>.

40 Bullock, Charles S., and Susan A. MacManus. "Municipal Electoral Structure and the Election of Councilwomen." *The Journal of Politics* 53, no. 1 (1991): 75-89. <https://doi.org/10.2307/2131721>.

41 R. Darcy, Welch, Susan, and Clark, Janet. "Women Candidates in Single- and Multi-Member Districts: American State Legislative Races - ProQuest," December 1, 1985. <https://www.proquest.com/openview/426a6cb2a3c82efcaab7c8e920af40/1?pq-origsite=scholar&cid=1816420>.

42 Groffman, Bernard, Michael Migalski, and Nicholas Novello. "Effects of Multimember Districts on Black Representation in State Legislatures." *The Review of Black Political Economy* 14, no. 4 (March 1, 1996): 65-78. <https://doi.org/10.1007/BF02903792>.

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first elected to single-member districts, then compensatory seats are granted from party-list votes to achieve proportionality. Compensatory seats are allocated using the Saint-Lagué method.<sup>36</sup> The New Zealand MMP system requires a party to meet one of two thresholds to gain a seat, either winning a district seat outright or gaining at least 5 percent of the national vote. If a party wins more constituencies than its share of the national vote would otherwise entitle it to, the party receives overhang seats, increasing the size of Parliament to accommodate the extra seat(s).<sup>3610213348336</sup>

The first general election held under MMP took place in 1996. From that election until 2020, no single party held an outright majority of seats, with many smaller parties gaining footholds in Parliament. New Zealanders overall saw significant shifts towards positive attitudes about politics, including an increase in trust in government.<sup>39</sup> This shift was especially pronounced among those who were previously political minorities as they began to see that their votes mattered.<sup>40</sup> Voters reported a significant increase in interest for minor parties as well.<sup>61</sup> In terms of votes cast, MMP saw significant split-ticket voting. In 1996, two-fifths of New Zealand voters supported a candidate from a different party to the party they supported in their last vote.<sup>62</sup> Since the electoral reform, MMP has become a partisan issue in New Zealand, with minor parties supporting the system and National, and formerly Labour, supporting a shift back to FPTP voting.<sup>63</sup>

A unique aspect of the New Zealand electoral system is the dedication of seats in Parliament to the largest ethnic minority in the country, the Māori. Male Māori have had the ability to vote in New Zealand since 1852. However, since 1867, they have elected MPs in a separate set of Māori-only electoral districts. The Māori were originally allotted seats in Parliament representing only four districts. The number of seats did not change to reflect Māori population changes and there was no redistricting to maintain population parity between the districts over time. Some likened this arrangement to the "separate but equal" doctrine of the Jim Crow era in the United States.<sup>64</sup> After the reform to MMP, Māori voters maintained their dedicated districts with the number of districts allowed to adjust to reflect Māori population changes. As a result, the number of seats immediately increased to five and has since increased to seven. MMP also facilitated the growth of the Māori Party, giving voice to the group in Parliament. Researchers argue Māori political participation in New Zealand is a positive example of a government implementing the 2007 UN Declaration on the Rights of Indigenous Peoples, ensuring indigenous participation in state politics.<sup>65</sup>

43 Calabrese, Stephen. "Multimember District Congressional Elections." *Legislative Studies Quarterly* 25, no. 4 (2000): 611-43. <https://doi.org/10.2307/440437>.

44 Lamer, Christopher W. "The Impact of Multimember State Legislative Districts on Welfare Policy." *State Politics & Policy Quarterly* 5, no. 3 (September 1, 2005): 265-82. <https://doi.org/10.1177/153244000500500894>.

45 Bullock, Charles S., and Ronald Keith Gaddie. "Changing from Multimember to Single-Member Districts: Partisan, Racial, and Gender Consequences." *State & Local Government Review* 25, no. 3 (1993): 155-63.

46 Mundt, Robert J., and Peggy Heilig. "District Representation: Demands and Effects in the Urban South." *The Journal of Politics* 44, no. 4 (1982): 1035-48. <https://doi.org/10.2307/2130672>.

47 Leal, David L., Valerie Martinez-Ebers, and Kenneth J. Meier. "The Politics of Latino Education: The Biases of At-Large Elections." *The Journal of Politics* 66, no. 4 (2004): 1224-44. <https://doi.org/10.1111/j.0022-3816.2004.00297.x>.

48 Derfner, Armand. "Multi-Member Districts and Black Voters." *Black Law Journal* 2 (1972): 120.

49 Richter, Rob, and Steven Hill. "Proportional Representation." *Social Policy* 26, no. 4 (June 22, 1996): 24-38.

## 7. Analyzing the 1993 referendum

### 7.1 DATA AND METHODS

Making use of available data and methodology, I adapted the work of Peterson and Spirling<sup>66</sup> and applied it to the New Zealand House of Representatives before and after the 1996 referendum. Peterson and Spirling measured polarization in the UK House of Commons by training machine learning classifiers on speeches given by members of Parliament with the classification output labels being the speaker's party. Polarization was then measured by assessing the accuracy of the trained classifier. The researchers found when accuracy is high, meaning the classifier learned to identify the speaker's party well, polarization can be assumed to be high and similarly, when accuracy is low, it can be assumed the polarization in the parliament is low. The researchers compared their results to existing qualitative and quantitative measures of polarization in the UK with similar results and other researchers have recommended the method over similar methods to measure polarization using speech data.<sup>67</sup> 37283091041243

The following analysis employs this method using parliamentary speech data from the ParliSpeech V2<sup>68</sup> dataset. This dataset contains 6.3 million parliamentary speeches given in various democratic legislatures between the years 1987-2019 pulled from official government sources. Each speech includes meta-data on the speaker, the speaker's party, and other labels. This analysis utilizes speech data from the included legislatures between the years 1991 and 2001 (five years preceding and following MMP reform).

To estimate the causal effect of the 1996 MMP reform, a synthetic control was built from the legislative bodies of Germany, Sweden, and the United Kingdom. These legislatures were largely chosen due to data availability but nonetheless offer a diverse variety of electoral systems and parliamentary models.<sup>69-70</sup>

### 7.2 TEST RESULTS

Figure 1 shows the polarization of all legislatures included in the analysis. Figure 2 shows polarization in New Zealand and an average of all other legislatures. These figures show New Zealand with relatively high polarization pre-reform that steadily decreases over the included years to roughly the same level as the other legislatures. In Figure 3, polarization in New Zealand is compared to that of "Synthetic New Zealand" to test this apparent trend causally. As evidenced by Figure 4 and Figure 5, MMP reform in New Zealand appears to

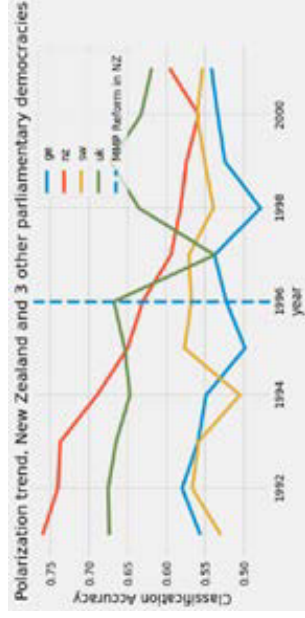


Fig 1. Polarization (as measured by classification accuracy) of Germany, New Zealand, Sweden, and the United Kingdom from 1991-2001. New Zealand 1996 MMP reform indicated by dashed line.

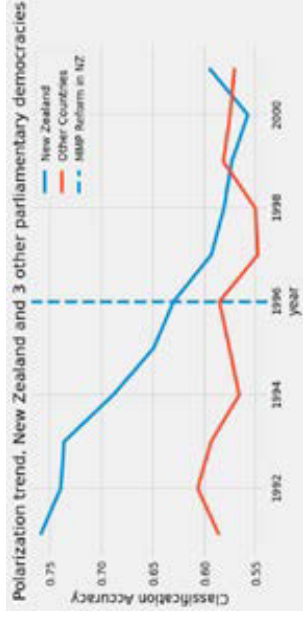


Fig 2. Polarization (as measured by classification accuracy) of New Zealand and mean polarization of other countries (Germany, Sweden, and the United Kingdom) from 1991-2001. New Zealand 1996 MMP reform indicated by dashed line.

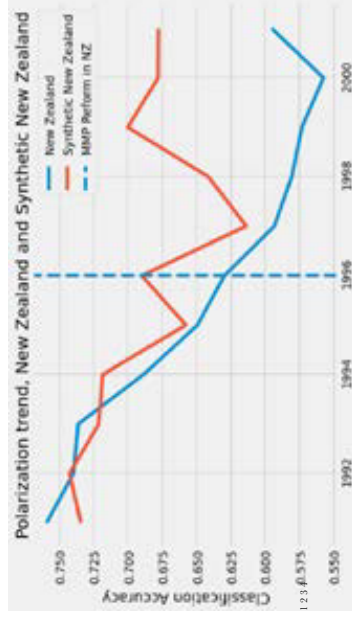


Fig 3. Polarization (as measured by classification accuracy) of New Zealand and Synthetic control from 1991-2001. New Zealand 1996 MMP reform indicated by dashed line.

50 Levine, Stephen, and Nigel S. Roberts. "The New Zealand Electoral Referendum and General Election of 1993." *Electoral Studies* 13, no. 3 (September 1, 1994): 240-53. [https://doi.org/10.1016/0261-3794\(94\)90022-1](https://doi.org/10.1016/0261-3794(94)90022-1).

51 In 1978, Labour won 40.1% of the popular vote to National's 39.82% while Labour held only 40 seats in Parliament to National's 51. In 1981, Labour won 39.01% of the popular vote to National's 38.77% while Labour held only 43 seats in Parliament to National's 47.

52 Report of the Royal Commission on the Electoral System, (Wellington: Government Printer, 1986).

53 Levine, Stephen, and Nigel S. Roberts. "The New Zealand Electoral Referendum and General Election of 1993." *Electoral Studies* 13, no. 3 (September 1, 1994): 240-53. [https://doi.org/10.1016/0261-3794\(94\)90022-1](https://doi.org/10.1016/0261-3794(94)90022-1).

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58 Sains-Lague: calculates a quotient:  $q = \frac{V_i}{V_i + 1}$  for each party where  $V_i$  is the number of votes received and  $s_i$  is the number of seats allocated so far. The party with the highest quotient receives the next seat. The process is repeated until all seats are filled.

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