

DISCUSSION PAPER SERIES

IZA DP No. 10987

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ABSTRACT

What Determines Preferences for an Electoral System? Evidence from a Binding Referendum*

Much has been written about politicians' preferences for electoral systems, yet little is known about the preferences of voters. In 1993, New Zealand had a binding electoral referendum on the same day as the general election where voters chose between keeping a single plurality system (First Past the Post) or introducing a pure proportional one (Mixed Member Proportional). This paper merges data from all nationwide polling stations to Census data on local voters to examine what drives citizens' preferences for an electoral system. We find that strategic partisan interest was a key driver; voters overwhelmingly preferred the system that most benefited their favorite party. However, socioeconomic characteristics and social values also mattered; people who held more progressive values, were outside the dominant religion and lived in urban areas were much more likely to vote to change to a proportional system. Survey data show that these findings hold at the individual level and further that individuals who were angry with the economy were much more likely to vote against the status quo, regardless of their background, party preferences or social values. This behavior is likely to have ultimately balanced the result in favor of Mixed Member Proportional.

JEL Classification: D72, D73, H11

Keywords: elections, electoral systems, voting behavior, referendum, New Zealand

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1 Introduction

A country’s electoral system is a key determinant of many of its political outcomes. How politicians are elected has been shown to matter for the degree of female representation (Duverger, 1955; Norris, 1985; Matland and Studlar, 1996), the level of redistribution (Iversen and Soskice, 2006; Persson et al., 2007), the level of corruption (Persson et al., 2003), party dynamics (Duverger, 1951; Kedar et al., 2016), public spending (Milesi-Ferretti et al., 2002; Lizzeri and Persico, 2001) and a wide range of policy outcomes (Morelli, 2004).¹ Given the impact that this choice has on policy outcomes and hence welfare, it is critical to understand how countries end up with different electoral systems out of a wide range of possible alternatives. The existing literature on this topic has mainly focused on politicians’ preferences, likely because they are the most visible actors in the process of choosing an electoral system. So far, a key actor who has been generally overlooked is the electorate.

This paper aims to fill this gap in the literature. One of the reasons why citizens’ preferences have likely been overlooked is the relative scarcity of past electoral system changes that included mechanisms for popular participation. Between 1961 and 2011, there were only twenty-four relatively serious attempts to change electoral systems in OECD democracies with only nine changes being made (Bol, 2016). In this paper, we focus on one of these serious attempts which also happened to be a successful one. Specifically, in 1993, New Zealanders faced a binary choice between keeping a long established First Past The Post (FPTP henceforth) system or changing to a pure proportional system known as Mixed Member Proportional (MMP). This binding referendum was held alongside a general election (still under FPTP rule) and hence had very high turnout (85 percent of the eligible electorate voted). In the end, 54 percent of voters chose MMP and the electoral system was changed starting with the next general election in 1996.

Our main analysis uses data from *all* 4,273 polling stations in New Zealand which we geocoded and merged with Census data on the socioeconomic characteristics of voters at each station to examine the relationship between voting outcomes and voter characteristics. Because the general election was held at the same time as the referendum, for each station, we know both which parties individuals voted for and the proportion who voted to change to MMP. This allows us to examine the role of partisanship as well as socioeconomic characteristics in determining citizens’ preferences for an electoral system. The

¹See (Carey and Hix, 2013) and (Grofman, 2016) for a comprehensive summary.

average station has only 450 voters, hence our analysis is undertaken at a very low level of aggregation and we are able to control for a wide range of location specific characteristics.

We also perform two additional analyzes to support out main findings. First, a small subset of 150 urban polling stations had polling booths for two or even three nearby electoral districts. In these cases, the socioeconomic characteristics of the electorate in each district should be nearly the same, but for historical reasons, often the preferred party in these neighboring districts differs. This allows us to estimate polling station fixed effects models which allow us to examine the relationship between past party voting patterns and referendum voting controlling for all unobservable socioeconomic characteristics. Second, we use survey data from the 1993 New Zealand Election Study (NZES) to examine the relationship between self-reported referendum voting, socioeconomic characteristics and self-reported party voting and party support. This data allows us to examine individual level relationships and to control for a wider range of individual preferences and opinions. However, unlike in our main analysis, here the key variables are self-reported and could potentially suffer from justification bias.

We find robust evidence that partisan preferences drove voters' choices; people supported the system that was thought to benefit their preferred party the most. This is the case when examining the full cross-section of polling stations, when examining only polling stations where people could vote in more than one electorate and controlling in addition for station fixed effects, and when using the NZES to examine individual voting behavior. Here, our results are robust to controlling for socioeconomic characteristics, where people place themselves on a left-right ideological scale and their support for different political parties; even with these controls, for which party an individual voted for in the previous election strongly determines how they voted in the referendum.

However, instrumental, partisan preferences do not fully explain electoral system choice. Socioeconomic characteristics and social values also matter; people who hold more progressive values, are more educated, are outside the dominant religion, are male, and live in urban areas were much more likely to support changing to a proportional system. Survey data show that these findings hold at the individual level and further that individuals who were angry with the economy were much more likely to vote against the status quo, regardless of their background, party preferences or social values. Importantly, these preferences cannot result from a distaste for malapportionment or gerrymandering, which are both non-existent in New Zealand. It is most likely that these patterns reveal

an intrinsic preference for particular democratic processes. Supporting this, we also find that individuals who put intrinsic value on characteristics usually associated with proportional systems, such as coalition governments and a fair mapping from votes to seats, are also much more likely to support MMP.

The main contribution of our paper is that, to the best of our knowledge, it is the first to use field data from a binding referendum to examine individual determinants of electoral system choice. The referendum we examine is particularly relevant for understanding individual preferences because: (i) *all* adult residents of New Zealand were eligible to vote; (ii) the issue of electoral system reform was salient, in particular because there had been a non-binding referendum in the previous year; and (iii) individuals were deciding on whether to change a system that had been in place for over a century (140 years to be precise). The few studies that have previously examined individual preferences for electoral systems have mainly relied on hypothetical choices made in surveys and experiments by participants in contexts where an electoral reform was not on the agenda (Blais et al., 2015; Aldrich et al., 2014; Wenzel et al., 2000). Despite the strengths of these papers, they all have in common that the set of respondents was answering questions regarding a relatively abstract and unlikely event.² Lack of saliency has been shown to be a problem in survey-based studies, since it results in satisficing and socially desirable answers Krosnick (1999).

In general, our results are consistent with this previous literature which also finds that voters are usually self-interested in hypothetical situations (Aldrich et al., 2014; Wenzel et al., 2000)³. In this light, our results confirm that hypothetical choice experiments are a reasonable way to collect information about individual’s preferences for different electoral system and that saliency does not appear to change the underlying importance of partisanship in determining people’s choices. However, we are first paper to show that social values are also important determinant individual’s preferences for electoral systems, and in particular, that voter anger was an important determinant of the referendum outcome.⁴ This type of sentiment is obviously difficult to capture in hypothetical situations and, as

²The only exceptions we know of are (Aimer and Miller, 2002) which also examines the New Zealand referendum but using just the NZES in a descriptive manner and (Fournier et al., 2011) which examines a sample of citizens who chose to be part of a long-term deliberative process (one year, 20+ meetings), which has obvious self-selection issues.

³(Fournier et al., 2011) is an exception but relied on self-selected participants who were all member of local assemblies in the Netherlands, Ontario and British Columbia

⁴Voter anger was particular relevant at the time of this referendum because in the late 1980s New Zealand underwent a massive free-market de-regularization where campaign promises had been repeatedly broken by both major parties (Roper and Leitch, 1995)

the evidence from the Brexit referendum and last US Presidential election suggest, in pre-election polling. Taken together, the results in this paper suggest that governments should not hold referendums in times of a crisis, or, more generally, of wide economic or political alienation, if they want the results to reflect the true underlying preferences of individuals.

2 New Zealand context

2.1 Events leading to the referendum: 1978 - 1993

New Zealand was throughout most of the 19th century “a perfect example of the Westminster model of democracy” (Lijphart, 1984). Government was (and still is) elected by the Parliament, which is the only legislative chamber in the country. Up to and including the 1993 election, all MPs were selected from Single Member Plurality (SMP) districts. Due to an electoral law that strictly bound the electoral commission against malapportionment by mapping district size to the population in the South Island, the number of districts incremented regularly throughout the years, from 80 in the immediate post Second World War, to 99 in 1993. Conservative National and leftist Labour were the only two parties in office since 1938, winning nearly all MPs in each election.

Both the 1978 and 1981 elections ended up with National in office with Labour however winning the plurality of votes. This resulted in a Labour pledge to establish a Royal Commission of non-partisan individuals to reappraise the electoral law. The Commission’s report suggested that the best possible system for New Zealand was a proportional system known as Mixed Member Proportional (MMP). Perhaps unsurprisingly, “[h]orrified politicians of both major parties (then) attempted to put the genie of reform back in the bottle” (Nagel (2004), page 534). This effort was successful until David Lange, the Labour candidate in the 1987 elections, promised a binding referendum during a TV debate if Labour won the elections. This promise has been widely regarded as a political gaffe.⁵

Despite a Labour victory in 1987, the referendum was never set. Given the rising concerns about fairness and representation among large sectors of the population, the National party, in an attempt to shame Labour, promised a binding referendum in case they won the 1990 elections, to which Labour followed suit. Party elites mostly opposed

⁵It was “made in a context of ongoing pressure for a referendum on the electoral system, increasing public dissatisfaction with the political process and intensifying concern about the government’s willingness to override public opinion” (Vowles (2008), page 24).

the referendum, yet realized it was politically perilous to do so publicly (Vowles, 2008). National then won the 1990 elections and proceeded to set a two-stage process for deciding the electoral system. A first referendum, held in 1992, was non-binding; it asked citizens whether they would prefer to remove FPTP, and, if so, to choose which was the best possible alternative among four suggested.⁶ If voters in the first referendum supported change, there would then be a second binding referendum in 1993 asking voters to choose between FPTP and the highest ranked alternative from the first referendum.

Not surprisingly, given its non-binding nature, participation was relatively low in the 1992 referendum (55.2%). However, an overwhelming majority voted to replace FPTP (84.7%) and among the four candidates to replace it, MMP was the most preferred, with seven in ten voters supporting it as the best alternative. The stage was now set for the binding referendum to be held at the same time as the 1993 general election. Few members of the National Party now supported change. Senior Labour politicians were giving cues to vote against MMP, whereas those closer to the voters (such as key activists and less tenured candidates) generally supported MMP (Vowles, 2008). Smaller parties, like Alliance or New Zealand First (NZF), were unambiguously supportive of MMP. In a last minute attempt to prevent MMP, a group of business leaders stepped into the breach left by demoralized politicians, by launching a lavishly funded, sophisticated advertising blitz in support of FPTP, called ‘Campaign for Better Government’ (Roper and Leitch, 1995). Panel B of Table 1 summarizes the vote shares and seats won by the major parties in the general election, as well as their position with regard to the referendum.

The 1993 referendum saw a sharp increase in participation (85.2%) and a much closer result; MMP was preferred by 53.9% of voters (referendum official results are summarized in Panel A of Table 1). The new electoral law established MMP for the 1996 general election and required it to be used for at least two consecutive elections before any serious evaluation could be made.⁷ Overall, the process that culminated in this referendum has been described as “driven by chance” (Benoit, 2007), “serendipity” (Nagel, 2004), or even “accidental” (Vowles, 2008).

⁶The four possible alternatives were Single Transferable Vote (STV), Supplementary Member (SM), Alternative Vote (AV) and Mixed Member Proportional (MMP).

⁷A non-binding referendum was held in 2011, in which 57% of the population voted to keep MMP.

2.2 Mixed Member Proportional: a brief summary

The Electoral Commission proposal for MMP (which is what was implemented after the referendum) is very similar to the electoral system that prevails in Germany. The country is divided into electoral districts with the number of districts determined by total population; it was 65 in 1996, right after the implementation of MMP, and is currently 71, all nearly equal in population. The number of MPs is however fixed at 120.⁸ On election day, citizens cast two votes: the ‘party vote’ and the ‘electorate vote’. All nationwide party votes are tallied together (i.e., as if one district). Vote shares from the party vote determine the share of votes that a party will get in parliament. The electoral formula chosen was Sainte-Lagué, which means that the translation from party vote shares to seat shares in parliament is nearly exact.⁹ The electorate vote, on the other hand only serves to decide who is the representative at the local level; here plurality rule still abides.¹⁰

2.3 Other relevant aspects of the New Zealand electoral system

One peculiarity of the New Zealand system is the existence of a parallel electoral system for native New Zealanders, Māori. These special electorates were introduced in 1867 under the Māori Representation Act. As a consequence, every area in New Zealand is covered by both a General and a Māori electorate. By law, Māori citizens (around one sixth of the total population) can choose whether to register in a General district, or in a district in which only Māori can enroll (and vote). All non-Māori citizens must enroll in the General roll. From 1896 to 1993, the number of Māori seats was fixed at four.

Changing to MMP had a particularly large impact for Māori. It was decided that if MMP was implemented the number of Māori seats would no longer be fixed at four. Instead, they would now depend upon the number of Māori registered in the Māori Roll (following the same population rules as the electorates in the General Roll). Importantly,

⁸Unless there is an ‘overhang’, a situation in which the number of MPs may increase in very small numbers. Overhang situations arise when a party wins more districts than the number of MPs designated via the party vote.

⁹Parties are required to get greater than five percent of the overall party vote or win an electoral seat to get their full allocation of seats in parliament.

¹⁰As an example, suppose that a party wins 35% of the party votes and wins in 20 of the 71 electorates with the ‘electorate vote’. Given that 35% of 120 is 42, this party gains 42 MPs. The first 20 MPs are those who have won the local race via the electorate vote. The other 22 are the first 22 members of the nationwide party list. On the other hand, if a party wins more electorates than the MPs allocated with its share of the party vote, then a situation of an overhang arises. For example, if a party wins 6% of the party votes (which translates into 7 MPs) and 9 electorates, then the number of total MPs rises to 122, and the party gets to keep all its 9 locally elected MPs.

this would mean that the number of Māori-only districts could dramatically increase in the long run if more Māori chose to register in the Māori Roll (“Electoral Act, 1993”).¹¹ Currently, there are seven Māori seats.¹²

Important for the interpretation of some of our findings, New Zealand has strong rules against malapportionment. Specifically, the Electoral Amendment Law of 1945 states that the registered population in any given district could not be more or less than 500 people of the established quota, which was later modified in 1950 to deviate by at most $\pm 7.5\%$ and in 1956 by at most $\pm 5\%$, where it has stayed ever since.¹³ Hence, redistricting is an uncommon phenomena driven entirely by population change. Generally speaking because of the fixed number of Māori seats, Māori are the only group in New Zealand who ‘lost out’ under FPTP because of the how the electoral map was drawn.

Another important detail relevant for our empirical strategy is that while voters in New Zealand can vote in any polling station within their electorate, historically nearly all have chosen to cast their votes on election day at the closest polling station.¹⁴ While it is possible to vote in another electorate on election day if an individual is traveling, this requires a ‘special’ vote and is relatively costly in terms of paperwork. Hence, the sociodemographic characteristics of individuals living in the area near a polling station can be thought of a very accurate representation of the preferences of the voters at that station.

3 Data and empirical strategy

3.1 Data

Our main analysis relies on data that we combined from two different datasets that cover the whole country: (i) election and referendum results at the polling station level and (ii) the general Census. The general election and referendum results dataset contains information from all 4,273 polling stations, with an average of 449 votes cast in each. In

¹¹The “Electoral Act (1993)”, reprinted as of July 1, 2017, can be found at <http://www.legislation.govt.nz/act/public/1993/0087/latest/DLM307519.html>.

¹²Labour traditionally won all of the Māori seats which may be an additional reason why many party members were supportive of changing to MMP.

¹³*Electoral Amendment Act, 1945*, Nov. 12, No. 10; *Electoral Amendment Act, 1950*, Oct. 6, No. 32; *Electoral Amendment Act, 1956*, Oct. 26, No. 107.

¹⁴According to the ‘Voter and non-Voter Survey Report’ issued by the Electoral Commission, 93% voted in a polling station closest to their home in 2008, whereas 92% did so in 2011. There is no data available for previous elections, but there is no reason to suspect that patterns have recently changed in any particular direction.

order to infer the sociodemographic characteristics of voters of each polling station, we geolocate them and merge comprehensive information on individuals living in the area of the polling station from the 1996 Census.¹⁵ Since 1996, Statistics New Zealand has released comprehensive sociodemographic information at the “Area Unit” level. There are nearly 2,000 area units in New Zealand, which are generally suburbs in urban areas, small towns or district rural areas, and have on average 1,884 usual residents. Most area units (73%) have one or at most two polling stations in them. Hence, the characteristics of individuals living in the area unit of a polling station should be quite representative of the voters at that station.¹⁶ We also use separate information at the area unit level on the proportion of Māori registered in the General Roll versus the Māori Roll.¹⁷

We drop all “special vote polling stations” which includes hospital votes, ordinary votes and special votes before polling day, special votes on polling day and overseas votes.¹⁸ We do so because we do not have information on the sociodemographic characteristics of these voters which is critical to our empirical strategy. Given the potential bias in preferences among Māori driven by the “Electoral Act (1993)” (see Section 2.3 above), we also exclude polling stations from the Māori Roll. Our analysis sample hence includes data from 1,637,117 voters at 3,244 polling stations, which covers 85.4% of the total number of votes cast in the election. Table 2 shows basic information on these polling stations for the full sample and our analysis sample. There is no apparent bias in terms of party or electoral system preferences in our restricted analysis sample of polling stations. In the Supplementary Materials, we show that all our results hold when we include polling stations in Māori districts.

Finally, in Section 4.3, we use survey data from the 1993 New Zealand Election Study (NZES). This was a post-election survey that was administered through a self-completion questionnaire. 2,251 individuals responded (around 70% of the initially targeted). This survey included questions on referendum choice and party choice for the elections, as well as the usual battery of questions on sociodemographics, party preferences, political attitudes, social values, etc. As discussed above, we use the NZES to test whether our

¹⁵We are able to geolocate all but seven polling stations which we exclude from our analysis.

¹⁶The few area units that have three or more polling stations are generally large ones in rural areas. In the Supplementary Materials we show that when we cluster standard errors at the area unit level all results hold.

¹⁷This dataset is not publicly available and was obtained directly from the Electoral Commission. It contains data from 1998. Since the changes in roll composition were minor from 1993 to 1998, we take this as an adequate proxy for the 1993 roll composition.

¹⁸A special vote is a vote made by an elector who is unable to visit a polling place in their own electorate on election day, or is not on the electoral roll on election day.

main results hold up when examining individual voting behavior and to examine the importance of additional characteristics that can only be captured in a survey for voting decisions.

3.2 Empirical strategy

Our main unit of observation is the polling station matched to the sociodemographic characteristics of voters in the Area Unit in which the station is located. Our main regression specification is as follows:

$$(1) \quad \%MMP_i = X_{ia}\beta + \sum_P (\delta_P \%P_i + \gamma_P \%P_i^2) + \varepsilon_{ia},$$

where $\%MMP_i$ is the percentage of votes for MMP in polling station i ; X_{ia} is a vector of sociodemographic characteristics of Area Unit a in which polling station i is located; and $\%P_i$ is the share of votes for party P in polling station i .¹⁹ We include the vote share in a quadratic form because, as will be shown below, there appears to be a non-linear relationship between vote shares and voting for MMP. Because there are multiple polling stations in the same electorate, we cluster all standard errors at this level. We weigh all results by number of votes at the polling station, so that our results indicate the relationship for the average voter as opposed to the average polling station.

4 Results

4.1 Main results

Figure 2 shows the distribution of results at the electorate and polling station levels. There was a wide distribution of voting in the referendum; in some polling stations less than 20% of people supported changing to MMP while in others over 80% of voters supported change. Table 3 reports the OLS results of regressing the share of votes for MMP on sociodemographic characteristics (i.e., expression (1) above without party shares). Some patterns stand out: urban areas and areas with higher proportion of residents born abroad strongly supported MMP; similarly, the higher educated and those who were more dependent on the state subsidies for income were more supportive of MMP. Māori and

¹⁹Appendix Table 1 shows descriptive statistics for the sociodemographic characteristics we include in the regression.

women seemed also more supportive of MMP, although these results are not robust to all specifications. Finally, the relationship between income and referendum choice is unclear: whereas relatively richer areas (as measured by median income) were *less* likely to support MMP, areas with greater proportion of people with annual income below \$20,000 were *less* supportive of MMP.²⁰

Next, we examine the correlation between partisan support and electoral system choice. Figure 3 shows the geographical distribution of support for MMP (Panel *a*) and for the three biggest parties (Panels *b* – *d*). These figures suggest a strong correlation between party support and electoral system choice: whereas National strongholds were more supportive of FPTP, areas where Alliance and Labour were predominant showed a stronger support for MMP. Figure 4 further inquires on this by plotting the unconditional relationship between party support and support for MMP. While support for MMP linearly decreases with support for National, the relationship between support for Labour or Alliance and support for MMP seems non-linear: after a certain threshold, support for MMP does not seem to increase, however extreme the support for either of these parties.

Table 4 reports the OLS results of regressing the share of votes for MMP on sociodemographic characteristics and party shares (i.e., expression (1) above).²¹ All patterns just discussed hold: controlling for all sorts of socioeconomic characteristics, National supporters prefer FPTP, Labour strongholds seem to moderately support FPTP, and supporters of Alliance strongly prefer MMP. Figure 5 shows the magnitude of these effects by plotting predicted support for MMP from results in (6) in Table 4. The non-linearities become more apparent: MMP wins by a small margin in polling stations where National and Labour have equal support. However, whereas deviations in favor of Labour barely increase predicted support for MMP, as we increase the share of National, support for MMP rapidly decreases. When it comes to Alliance, the pattern of predicted support is unambiguously increasing in vote shares for the party.

4.2 Matched Polling Stations

There are 150 mainly urban polling stations that have polling booths for two or even three electoral districts. As discussed above, we focus on these stations only for one of

²⁰Table III in the Supplementary Materials shows that results are robust to including all polling stations from Māori electorates.

²¹Table V in the Supplementary Materials show that all results hold when including Māori and votes in polling stations that are not located geographically (i.e., “special” votes).

our robustness tests. Here we illustrate our approach with examples from three of these stations, (Forrest Hill Church Hall, K.C.E.P.B. Depot, and King George Hall), whereas Figure 6 shows one in a map.

District	Votes for MMP	Share votes MMP (Polling station level)	%National – %Labour (Electorate level, 1990)
(i) Polling station: Forrest Hill, Forrest Hill Road, Presbyterian Church Hall			
Glenfield	110	44.50%	14.30%
North Shore	437	56.50%	28.30%
(ii) Polling station: Te Peka Street, K.C.E.P.B. Depot			
King Country	39	36.10%	45.08%
Tongariro	89	51.10%	6.21%
(iii) Polling station: Petane Road, No. 58, King George Hall			
Waikaremoana	185	54.50%	36.76%
Napier	434	61.30%	-6.98%

The three examples shown reveal that differences in results across ballot boxes *within the same polling station* can be striking. We use this to set a pairwise matching strategy. Given that the vast majority of citizens vote in the closest polling station, all voters in any such polling station i can be safely assumed to share the same socioeconomic characteristics, regardless of the electoral district booth they effectively cast their vote in. Hence, differences in partisan support and electoral system choice across voting booths in the same polling station must be driven by unobservables at the electorate level, like MP quality or pork barreling. Since we have general election results for 1990 at the electorate level, we use them as a proxy for such unobservables.²²

To be precise, our identification strategy works as follows: let MMP_{ig}^{93} be the share of votes for MMP in polling station i , electorate g . Also define the difference in party support in 1990 between National and Labour in electorate g as Δ_g^{90} (we cannot use any results for Alliance, since it did not run prior to the 1993 election). We run the following regression:

$$(2) \quad \%MMP_{i,g}^{93} = \Delta_g^{90} + \delta_i + \varepsilon_i$$

Since we assume that those who vote in polling station i electoral district g and those

²²Ideally, one would use as a proxy the 1990 results at the polling station level, but these are not available.

who vote in polling station i electoral district h are observationally equivalent in their socioeconomic characteristics, in essence, what we are doing is check whether 1990 election results have explanatory power on 1993 referendum choices over and above socioeconomic characteristics.

Results from estimating equation (2) are shown in Table 5. Panel A uses the results from the 1990 elections as discussed above. Panel B uses results from the 1981 general election as a further robustness check. Results are strikingly similar in both cases: they further confirm party preferences as a key driver for electoral system choice – the larger the margin in favor of National in previous elections, the smaller the share for MMP in 1993. Furthermore, when we add controls that serve as a proxy for how rural the area is, the results shown above are also confirmed: residents of relatively more rural electorates tend to support FPTP over and above party considerations, even when controlling for their voting location.

4.3 Results using survey data

To further check for the robustness of results displayed thus far, we use data from the 1993 New Zealand Election Study. The original data set consists of 2,251 post-election respondents. Due to missing data issues, we can only use 1,296 subjects for our analysis. Table VII in the Supplementary materials shows the descriptive statistics: there seems to be no observable patterns for missing data. The survey contains the usual battery of questions on socioeconomic background and political attitudes. The following is our main regression specification:

$$(3) \quad MMP_i = \alpha + X_i\beta + POL_i\gamma + \varepsilon_i,$$

where i refers to an individual respondent, X_i is a vector of individual socioeconomic characteristics, and POL_i is a vector of political preferences, attitudes, and values. All results throughout are clustered at the electorate level. We include only those respondents who voted in the referendum.

Table 6 shows the results. In column (1), we show that, as with field data, there is a strong relationship between which party an individual voted for in the 1990 election and whether they support FPTP or MMP in the referendum. In particular, those who voted for Labour are more likely to support MMP relative to those that voted for National and

this difference is even larger for people who voted for other parties in 1990 and for those who did not vote. In column 2, we show that these results are robust to adding controls for a wide-range of characteristics including each individual’s ideological position on the left-right scale. In column 3, we including additional information on individual support for National, Labour and Alliance where these are not mutually exclusive. Interestingly, this has added information beyond voting behavior in the prior election with those that support National more likely to vote for FPTP, those that support Alliance more likely to vote for MMP and those that support Labour slightly more likely to support MMP.

Examining individual characteristics, we find that, on average, men, Māori, highly educated, leftist, and middle aged people were more likely to support MMP.²³ We find that, on the contrary, protestants, the main religious group in New Zealand, were more likely to support FPTP (unfortunately the Census does not provide religious breakdown, so we can only rely on survey data to study religion effects). The correlates of social values and electoral system support are striking. We find that holding more progressive values is clearly associated with having voted for MMP; rejecting death penalty, being in favor of employing homosexuals, and being more open to immigrants is positively correlated with having chosen MMP.

Results also reveal that respondents who claimed to be ‘often’ or ‘always’ angry with the economy were more likely to support MMP. In particular, column (5) shows that being angry with the economy was a key driver of support for MMP among voters to the right of the political spectrum. Finally, perhaps unsurprisingly, people who support the basic tenants of MMP, such as coalition governments and a fair mapping from votes to seats, were in addition much more likely to support MMP.

5 Preference intensity

Lastly, we can check whether and how intensity of preferences mattered. Voting was not compulsory in either of the contests. Turnout for the general election was slightly higher than for the referendum; 1,922,796 votes were cast for the general election which was 4,963 more votes than for the referendum. Figure 7 shows the distribution of votes cast at each contest at the polling station level. Only 30% of polling stations had the

²³Most specifications show that Māori are significantly more likely to support MMP. Nonetheless, Māori are highly underrepresented in the 1993 sample. Hence, given the small number of observations, we prefer to take this result with a grain of salt.

exact same number of votes in both contests. We use this variability to infer what drove preferences for one contest over the other one.

To that avail, we estimate the following regression specification:

$$(4) \quad \textit{Turnout Referendum}_i(\%) - \textit{Turnout Gral. Election}_i(\%) = X_{ia} + \sum_P \delta_P \%P_i + \varepsilon_{ia},$$

where the dependent variable captures the differential turnout between both elections at polling station i ;²⁴ X_{ia} is a vector of sociodemographic characteristics of the Area Unit a in which polling station i is located; and $\%P_i$ is the share of votes for party P in polling station i . In the analysis, we cluster all standard errors at the electoral district level. Table 7 shows the results. A few patterns emerge: (i) the highly educated, those born in New Zealand, and those in rural areas were more likely to vote in the referendum; and (ii) supporters of National and Alliance seemed more eager to participate in the referendum. This is consistent with an argument that suggested that voters choose the system that most benefited their favorite party: since both Alliance and National had more at stake than Labour, their supporters were more likely to participate in the referendum.²⁵

6 Discussion

We find consistent evidence that voters rationally supported the electoral system that benefited their favorite party the most. The majority of National supporters voted to keep FPTP, whereas Alliance supporters voted for a switch to MMP, as both party elites would have encouraged. Remarkably, all our results are less clear with regards to Labour supporters, which is very much in line with the ambiguous behavior of its party elites. Whereas, on average, Labour supporters were more favorable towards MMP, Labour strongholds did not massively vote for MMP as much as National strongholds did for FPTP, as Figure 5 clearly shows. In terms of effect size, controlling for all possible individual characteristics, voting for Labour increased the probability of voting for MMP only half as much as voting for Alliance (13% vs. 23%).

Since the Second World War, Labour and National had typically gathered 80% of the popular vote and virtually all seats in all elections: National had secured government in

²⁴ $100 \times (\# \text{ votes referendum} - \# \text{ votes gral. election}) / (\# \text{ votes referendum} + \# \text{ votes gral. election})$.

²⁵We do the same analysis using NZES data. However, only 77 respondents (less than 3% of the whole sample) voted in only one of the contests and hence there is not enough variation to find any significant results.

11 out of the 16 general elections, whereas Labour won the other five. Up to 1993, most, if not all, smaller parties were left-leaning. In the eyes of many National supporters, this meant that, should voting patterns stay the same after the referendum, the introduction of a proportional system would probably result in Labour and smaller leftist parties easily gaining the majority of parliamentary seats in every election. This is likely to have led a pro-status quo vote among most instrumental National supporters.

The rational approach in the partisan dimension of the average voter is confirmed by behavior at the intensive margin, too. Our analysis on turnout point out that Alliance and National voters were more likely to vote in the referendum than Labour voters (or, framed differently, Labour supporters were more likely to abstain in the referendum). This is consistent with the fact that both parties were the ones which had, according to their own elites, more to lose should the undesired system win. Larger participation in rural areas, combined with an unambiguous preference for FPTP, may further reflect a stronger desire to keep a system where direct accountability to local electors was key.

Nonetheless, our results further show that a model of electoral system choice purely based on partisan preferences would clearly be flawed. There are many other factors that drove people's choices over and above party allegiances. Three socioeconomic characteristics are strongly correlated with support for a pure proportional system in all specifications; residing in urban areas, having higher levels of formal education, and placing oneself to the left of the political spectrum. Results on formal education are remarkable; once controlling for party preferences, vote at the general election, and all sorts of social values and political attitudes, having *any* degree higher than a primary school degree increases the probability of supporting a pure proportional system by around 10–15%. This suggests that those with higher levels of formal education place some intrinsic value in a proportional system beyond the instrumental partisan value they may see in it. Given the lack of malapportionment, support of urban citizens for MMP cannot have derived from an urge to increase the weight of their own individual votes, hence support of 'urbanites' and 'leftists' for MMP seems more likely to derive from the tendency of these subsets of the population to antagonize National.

We also find religion to be a driver of electoral preferences. Followers of the main religion in New Zealand (Protestantism) were much more supportive of maintaining FPTP than their Catholic or agnostic counterparts. As far as we know, there is nothing intrinsic in the Protestant set of beliefs that would favor a majoritarian system. We believe the

rationale to be similar to that in [Braun \(2016\)](#), who finds that, during the Second World War, Jews were more likely to be helped by Protestants in areas in which Protestants were a minority, and more likely to be helped by Catholics where Catholics were a minority. That is, nothing intrinsic in each religion drove protection, but a sense of local historical grievance and the resultant strength of the networks built therein. In New Zealand, as part of the majoritarian religious group, Protestants may have seen little need to alter the status quo.

Results for income are mixed when using field data. On the one hand, median income in the area unit is positively correlated with supporting FPTP. However, on the other, larger proportions of lower-income are also correlated with more support for FPTP, whereas larger proportions of people earning rents and dividends is associated with stronger support for MMP. Survey data does not shed any further light on the issue. Regarding age, older people seemed to have preferred a conservative choice (FPTP). Both field and survey results point in the same direction, although these results are not robust to all specifications.

Gender results are also mixed, but overall point in the direction that women were on average more supportive of the status quo than men: survey results show that women were 5–10% more likely to support FPTP than men. We find the differential effect to be specially pronounced among conservative voters. [Pino \(2017\)](#) uses Chilean elections data and finds that women vote in a more conservative manner than men. We also find that Māori overwhelmingly supported MMP. We believe the answer for this lies on the fact that, as discussed above, an increase to the number of Māori seats was linked to a switch in electoral regime. This gave an incentive to Māori who wanted to increase the number of Māori-only districts, beyond any particular considerations on electoral system *per se*.

Finally, we find that values and attitudes have an impact on electoral preferences over and above party preferences and socioeconomic characteristics. We use respondents attitudes towards immigration, the death penalty and homosexuals to measure values. We find that being more progressive made respondents more likely to support a proportional system. The effects are not trivial; someone who strongly supports progressive values was around 25 percentage points more likely to support MMP than someone who strongly supports conservative values.

There are two reasons why less conservative individuals could be more supportive of a proportional system: (a) by principle, should they believe that a proportional system

is intrinsically more valuable than a majoritarian one; or (b) instrumental, should they believe it is more conducive to bringing about progressive political outcomes. Unfortunately, given our data, we cannot disentangle the actual effect of each of these rationales. We suggest future research to bring insights on this issue.

There is one final remarkable result: respondents who are ‘often’ or ‘always’ angry with the economy (34% of the total) are more likely to support MMP. This result holds in particular for strong supporters of National: within this group, respondents who were angry with the economy most of the time were seven percentage points more likely to support MMP. This result has strong implications for referenda in general. The context in New Zealand in the late 80s was of great disengagement with politics and politicians. This was a result of a sudden and strong bulk of free market and liberalization measures that were started out by a Labour government breaking its campaign promises and continued by the National government (Roper and Leitch, 1995). Therefore, it is most likely that ‘angry’ respondents did not support MMP because of its intrinsic characteristics or because of its potential for long term particular policy outcomes. On the contrary, they may have supported MMP because it entailed *change*, and, furthermore, it was a vote against the “out of touch” (Vowles, 2008) elites of both National and Labour. This has remarkable similarities with recent elections like the *Brexit* referendum (2016) or the US and Philippines presidential elections of 2016, where it is believed that many voters cast uninformed votes and based their choices on anti-establishment sentiments and a sense of economic disenfranchisement (Hobolt, 2016; Leonard, 2017).

7 Concluding remarks

This paper uses a novel strategy in order to ascertain what drives voters’ preferences for electoral systems. It is the first one to use results from a binding referendum to that avail (New Zealand, 1993). We find that voters preferences are mostly driven by partisan self-interest: they support the system that most benefits their favorite party. However, this paper further shows that a purely partisan instrumental model does not suffice to explain voters choices: preferences towards particular democratic processes are also a key factor. In other words, voters place an intrinsic value to processes and mechanisms implied by the different electoral systems, beyond the particular policy outcomes that they may deliver. In particular, we find that people with more progressive values overwhelmingly favor a

proportional rule.

Notably, we find that, regardless of socioeconomic status or party allegiances, people who were upset with the economic situation were more likely to vote against the status quo. At the margin, the size of the effect was not negligible in New Zealand: in a close race as the 1993 referendum, those who seemingly used the referendum to send a signal to party elites may have critically secured a victory for the new proportional system. This has notable implications for referenda overall: electors may be tempted to use them to send a signal to politicians, regardless of what the particular issue the referendum may be addressing. Hence, results in this paper would suggest not to hold a referendum in times of a crisis, or, more generally, of wide economic or political upset.

Also, this paper uncovers another dimension of the rural-urban duality: the former prefer majoritarian system, whereas the latter prefer a proportional one. Results suggest that this duality is not driven by a preference or distaste for malapportionment. Further research should serve to confirm if there is a preference for accountability in distant from political power rural areas, and a preference for representativity in urban areas.

Other issues also merit further inquiry: we find that religion is strongly correlated with electoral system preferences. We conjecture that this reveals a preference for status quo among religious groups which are majoritarian and relatively well-off in economic terms. Finally, we find that women are much more supportive of FPTP than men. Whereas similar gender biases have been previously found in the literature, we cannot provide any framework that accounts for such a difference. We hope that further research will shed more light on the issues that have been left partially answered here.

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8 Tables

Table 1: Referenda and general election results

Panel A: Referenda results				
	Keep FPTP	Change system	Total	Turnout
1992	186,087 15.28%	1,031,257 84.72%	1,217,284	55%
	FPTP	MMP		
1993	884,964 46.14%	1,032,919 53.86%	1,917,833	85.2%

Panel B: General election results			
Party	% Votes	Seats	Position referendum
National	35.05	50	Pro FPTP
Labour	34.68	45	Ambiguous
Alliance	18.21	2	Pro MMP
NZF	8.40	2	Pro MMP

Official results from the referendum held on September 19, 1992, and general elections and referendum simultaneously held on November 6, 1993. Available at <http://www.elections.org.nz>.

Table 2: Summary statistics by polling station (General Roll only)

	Mean	St. Dev.	Min	Max
Panel A: all polling stations, $N = 3719$				
# Referendum votes	498.8	454.7	0	3094
% Votes for MMP	50.14%	12.73%	2.30%	84.0%
# (REF. – GE) votes	-1.14	7.6	-142	106
# Gal. Election votes	499.9	454.8	0	3097
% National	40.40%	17.75%	0.72%	96.07%
% Labour	30.93%	16.03%	0%	88.88%
% Alliance	17.31%	8.67%	0%	71.57%
Panel B: all standard polling stations (sample used in the remainder), $N = 3244$				
# Referendum votes	504.66	447.83	0	3094
% Votes for MMP	50.12%	13.00%	2.30%	84.00%
# (REF. – GE) votes	-0.08	3.92	-24	106
# Gal. Election votes	504.74	447.83	0	3097
% National	40.51%	18.40%	0.72%	96.07%
% Labour	30.63%	16.40%	0%	88.88%
% Alliance	17.59%	8.80%	0%	71.57%

†: Panel B excludes hospital votes, special votes in district before polling day, special votes on polling day, overseas special votes including service personnel votes and ordinary votes in district before polling day. # (REF. – GE) votes = Votes in Referendum – Votes in General Election.

Table 3: Support for MMP at the Polling Station. General Roll only.

	(1)	(2)	(3)	(4)
Mean MB Area within AU	-112.3** (46.21)	-91.93** (39.36)	-94.83** (41.22)	-45.91** (21.71)
Pop. Density	1.147*** (0.389)	0.743* (0.378)	0.544 (0.381)	-0.241 (0.335)
% Women	0.339 (0.209)	0.210 (0.200)	0.404* (0.203)	0.154 (0.131)
% Born in NZ	-0.281*** (0.0550)	-0.249*** (0.0538)	-0.265*** (0.0531)	-0.156*** (0.0444)
% Maori	0.116** (0.0455)	0.0158 (0.0460)	0.0564 (0.0501)	0.156*** (0.0396)
% > 64 y.o.	0.0009 (0.0789)	-0.214** (0.105)	-0.196 (0.126)	-0.0664 (0.0869)
% College degree	0.401*** (0.0675)	0.328*** (0.0707)	0.315*** (0.0766)	0.313*** (0.0726)
% < NZD 20,000	-0.0880 (0.0657)	-0.333*** (0.0852)	-0.247** (0.104)	-0.007 (0.088)
Median income in \$(000)	-0.386*** (0.0497)	-0.309*** (0.0615)	-0.286*** (0.0613)	-0.151*** (0.0376)
% receives <i>some</i> benefit		0.496*** (0.111)	0.554*** (0.120)	0.0541 (0.0960)
% Maori in Maori Roll (as in 1998)			-0.0292 (0.0210)	-0.0188 (0.0165)
% earns rents or dividends			-0.0365 (0.150)	0.362*** (0.114)
% full employment			0.229* (0.128)	0.200* (0.104)
Party controls	NO	NO	NO	YES
R ²	0.316	0.339	0.351	0.660
Observations	3,104	3,104	2,961	2,960

*** Significant at 1% level; **at 5% level; *at 10% level.

Dependent variable: Percentage of votes for MMP at the Polling Station. All variables refer to *Area Unit* level data. Population density: (People per km^2)/1,000. Party controls: share of votes for Labour, for National, and for Alliance (i.e., column (4) here is equivalent to column (4) in Table 4). Standard errors clustered at the electoral district level. Regressions are weighted, where weights given by number of votes at the polling station: '#referendum votes at the polling station/# total referendum votes'.

Table 4: Support for MMP at the Polling Station, by party support, with sociodemographic controls (General Roll only)

	(1)	(2)	(3)	(4)	(5)	(6)
% Labour	0.1038*** (0.0442)	0.6219*** (0.1410)	-0.1712*** (0.0377)	-0.1122*** (0.0404)	0.0539 (0.0866)	
% Labour × % Labour		-0.0073*** (0.0016)			-0.0025** (0.0011)	
% National			-0.5979*** (0.0467)	-0.5365*** (0.0487)	-0.1474 (0.0945)	
% National × % National					-0.0049*** (0.0009)	
% Alliance				0.1163* (0.0649)	0.2382** (0.1095)	0.5023*** (0.1399)
% Alliance × % Alliance					-0.0029* (0.0016)	-0.0037* (0.0020)
% National – % Labour						-0.1704*** (0.0142)
(% National – % Labour) ²						-0.0025*** (0.0003)
Controls	YES	YES	YES	YES	YES	YES
R ²	0.365	0.402	0.654	0.660	0.701	0.650
Observations	2,961	2,961	2,961	2,960	2,960	2,960

*** Significant at 1% level; ** at 5% level; * at 10% level.

Dependent variable: Percentage of votes for MMP at the Polling Station. Controls used (all refer to Area Unit level): mean meshblock area, population density, % women, % born in NZ, % Māori, % college degree, % > 64 y.o., % < NZD 20,000, median income, % Māori in Māori Roll, % earns rents or dividends, % receives *some* benefit, % full employment. Standard errors clustered at the electoral district level. Regressions are weighted, where weights given by number of votes at the polling station: ‘#referendum votes at the polling station/# total referendum votes’.

Table 5: Support for MMP at the Polling Station, pairwise matching

	(1)	(2)	(3)
Panel A: 1990 general election results			
% Nat. - % Lab. (in electorate, 1990)	-0.232*** (0.0495)	-0.134*** (0.0421)	-0.129*** (0.0428)
# Polling stations in electorate			-0.00153** (0.000603)
Log MB area			-0.0111*** (0.00386)
Fixed Effects	NO	YES	NO
R ²	0.196	0.827	0.298
Observations	282	282	282
Panel B: 1981 general election results			
% Nat. - % Lab. (in electorate, 1981)	-0.224*** (0.0513)	-0.115** (0.0504)	-0.136*** (0.0448)
# Polling stations in electorate			-0.00180*** (0.000587)
Log MB area			-0.00883** (0.00358)
Fixed Effects	NO	YES	NO
R ²	0.220	0.870	0.318
Observations	247	247	247

*** Significant at 1% level; ** at 5% level; * at 10% level.

Dependent variable: Percentage of votes for MMP at the Polling station. ‘% Nat. - % Lab.’: difference in vote shares in the general election between both parties in the electorate polling station i of electorate e (1990 general election in Panel A; 1981 general election in Panel B). Log MB area: \log (area meshblock where polling station is located at). Standard errors clustered at the electorate level (75 in Panel A; 66 in Panel B). Fixed effects: polling station.

Table 6: Support for MMP, New Zealand Election Study, 1993 survey

	(1)	(2)	(3)	(4) [‡]	(5) [†]
Vote 1990 = Labour (base: vote 1990 = National)	0.3675*** (0.0295)	0.2271*** (0.0315)	0.0835** (0.0325)	0.0594 (0.0668)	0.0629 (0.0464)
Vote 1990 = Other	0.4630*** (0.0387)	0.3070*** (0.0377)	0.1194*** (0.0368)	0.1114 (0.0702)	0.1014** (0.0469)
Vote 1990 = None or ineligible	0.3042*** (0.0505)	0.3617*** (0.0676)	0.1511** (0.0599)	0.0751 (0.1293)	0.0958 (0.0729)
Age		0.0123** (0.0050)	0.0065 (0.0045)	0.0074 (0.0099)	0.0101 (0.0065)
Age ² /100		-0.0104* (0.0053)	-0.0042 (0.0047)	-0.0060 (0.0108)	-0.0077 (0.0064)
Female		-0.0680*** (0.0255)	-0.0470** (0.0223)	0.0123 (0.0397)	-0.0941*** (0.0322)
Income in \$(000)		-0.0010 (0.0007)	-0.0006 (0.0006)	0.0015 (0.0012)	-0.0013* (0.0008)
Maori (base: white)		0.1429** (0.0662)	0.1087 (0.0682)	0.1912* (0.1021)	0.1034 (0.0964)
Immigrant		0.0638** (0.0313)	0.0319 (0.0279)	0.0481 (0.0424)	0.0737* (0.0407)
School (base: no qual.)		0.0826** (0.0348)	0.0698** (0.0316)	-0.0185 (0.0816)	0.0794** (0.0395)
Non-univ. degree		0.1527*** (0.0365)	0.1132*** (0.0326)	0.0235 (0.0745)	0.1139** (0.0442)
Univ. Degree		0.1483*** (0.0461)	0.1300*** (0.0398)	0.0787 (0.0777)	0.1292** (0.0497)
Employed (base: retired)		-0.0735 (0.0508)	-0.0372 (0.0443)	-0.0774 (0.1006)	-0.0191 (0.0499)
Catholic (base: not religious)		0.0108 (0.0416)	0.0343 (0.0367)	-0.0028 (0.0645)	0.0347 (0.0484)
Protestant		-0.0812*** (0.0274)	-0.0396 (0.0240)	-0.0664 (0.0402)	-0.0246 (0.0324)
Left-Right		-0.0569*** (0.0124)	0.0024 (0.0110)	0.0200 (0.0346)	0.0106 (0.0180)
Pol. Know.		-0.0132 (0.0310)	-0.0077 (0.0270)	0.0167 (0.0736)	0.0381 (0.0337)
Political participation		0.0461** (0.0225)	0.0443** (0.0206)	-0.0078 (0.0537)	0.0364 (0.0282)
Angry economy		0.1168*** (0.0147)	0.0188 (0.0159)	-0.0226 (0.0286)	0.0427** (0.0172)
Favors conservative policies		-0.0226*** (0.0051)	-0.0097* (0.0051)	-0.0058 (0.0100)	-0.0099 (0.0062)
Support principles of MMP			0.1023*** (0.0082)	0.0645*** (0.0188)	0.1154*** (0.0105)
Support National			-0.0826*** (0.0131)	-0.0255 (0.0362)	-0.0965*** (0.0163)
Support Labour			0.0221* (0.0117)	0.0094 (0.0247)	0.0292* (0.0162)
Support Alliance			0.0609*** (0.0118)	0.0895*** (0.0280)	0.0486*** (0.0156)
R ²	0.1519	0.2942	0.4547	0.3189	0.4827
Observations	1,296	1,286	1,286	250	738

*** Significant at 1% level; ** at 5% level; * at 10% level.

Dependent variable: Vote for MMP in the referendum (dummy). Standard errors clustered at the electorate level.

[‡]: Column (4) only includes leftist respondents (left-right position = {1,2,3}).[†]: Column (5) only includes rightist respondents (left-right position = {5,6,7}).

Pol. know.: knows the name of the local MP. Political participation: # general elections voted in since 1987. Angry economy: "I feel angry about the economy" (1=never; 2=seldom; 3=sometimes; 4=often; 5=always). Support National/Labour/Alliance: 1=Strongly oppose; 5=Strongly support.

Favors conservative policies $\in [-6, 6]$ = Pro-reducing # immigrants ($\in [-2, 2]$) + Against employing homosexuals ($\in [-2, 2]$) + Favors death penalty ($\in [-2, 2]$), where -2=Strongly disagree; 2=Strongly agree.Support principles of MMP $\in [-4, 4]$: This variable is constructed using two questions from the NZES 1993 survey: (i) F1d: "An election should give each party a share of the MPs equal to its share of the vote", Strongly Agree (+2) Agree (+1) Disagree (-1) Strongly disagree (-2); and (ii) F1c: "An election should ensure that one party can form a government", Strongly Agree (+2) Agree (-1) Disagree (+1) Strongly disagree (+2).

Omitted categories: 'Don't know/No Answer' income; 'other' ethnic group; 'other/student' employment status; 'other' religion; 'Don't know/No Answer' self Left-Right position; 'Don't know/No Answer' angry with economy.

Table 7: Determinants of differential turnout across Referendum and General Election

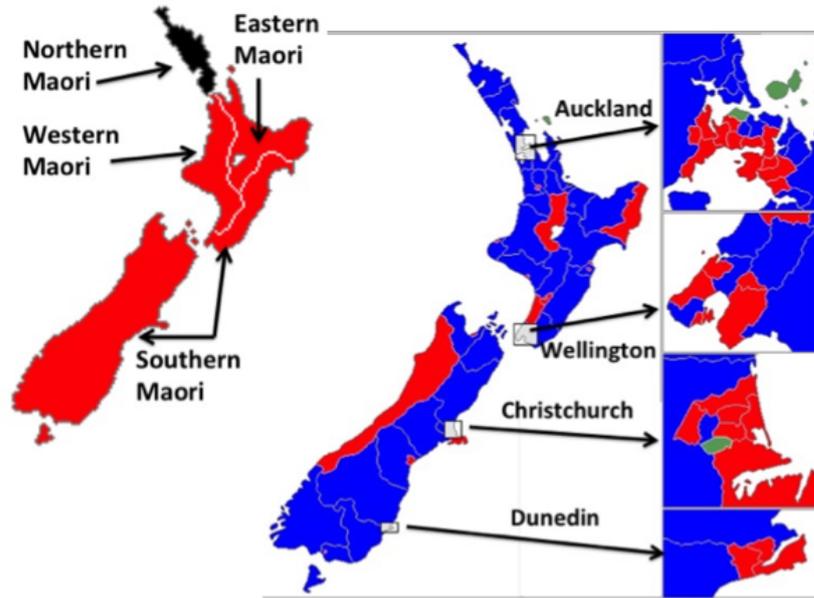
Election results. Dependent variable: Turnout Referendum (%) - Turnout General Election (%) (polling station level)	(1)	(2)	(3)	(4)
Pop. density	-0.0253** (0.0096)	-0.0245** (0.0097)	-0.0049 (0.0102)	-0.0056 (0.0101)
% Women	-0.0056 (0.0045)	-0.0048 (0.0045)	0.0019 (0.0049)	0.0028 (0.0049)
% NZ born	0.0052*** (0.0015)	0.0051*** (0.0015)	0.0046*** (0.0014)	0.0041*** (0.0013)
% Māori	-0.0010 (0.0009)	-0.0009 (0.0009)	0.0003 (0.0013)	0.0007 (0.0012)
% 65 y.o. or older	0.0014 (0.0023)	0.0015 (0.0023)	-0.0005 (0.0033)	-0.0011 (0.0033)
% college degree	0.0070** (0.0028)	0.0069** (0.0028)	0.0081*** (0.0021)	0.0073*** (0.0020)
% < NZD 20,000	-0.0015 (0.0020)	-0.0016 (0.0020)	0.0022 (0.0025)	0.0016 (0.0025)
Median income in thousands of \$	0.0017 (0.0014)	0.0017 (0.0014)	-0.0016 (0.0014)	-0.0021 (0.0014)
% receives some benefit			-0.0053 (0.0035)	-0.0044 (0.0033)
Labour share in polling station (%)			-0.0033*** (0.0008)	-0.0008 (0.0013)
National share in polling station (%)				0.0033** (0.0014)
Alliance share in polling station (%)				0.0040* (0.0021)
Other controls	YES	YES	YES	YES
R ²	0.0685	0.0690	0.0957	0.1017
Observations	3,104	3,104	2,961	2,960

*** Significant at 1% level; ** at 5% level; * at 10% level.

All variables refer to Area Unit. Variables not shown: Mean meshblock area within Area Unit, % Māori in Māori Roll, % earns rents or dividends, % receives some benefit, % full employment. Standard errors clustered at the electoral district level (99 clusters). Regressions weighted by polling station # votes.

9 Figures

Figure 1: New Zealand 1993 electorates.



Left figure: Māori roll districts. Right figure: General roll districts. The colors refer to the general election results: Red=Labour victory. Blue=National victory. Black=New Zealand First victory.

Figure 2: Results: support for MMP

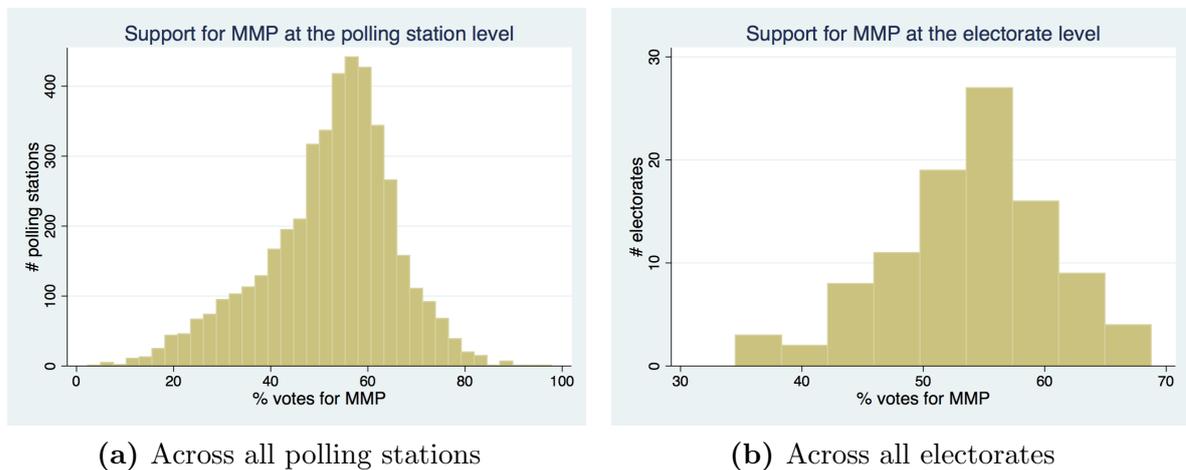
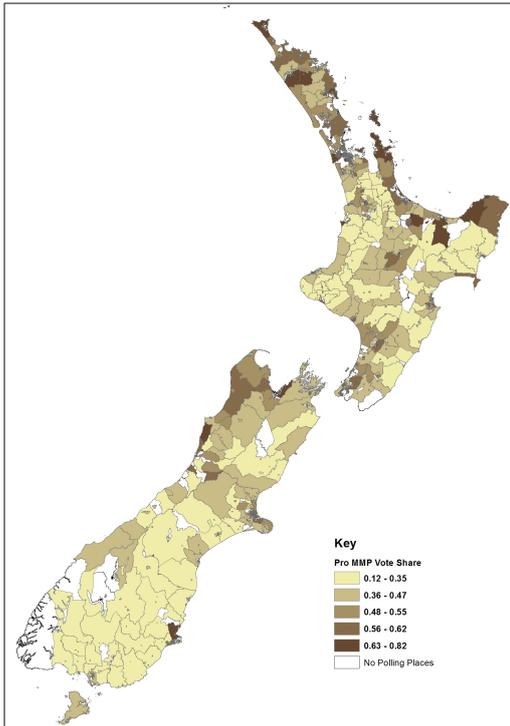
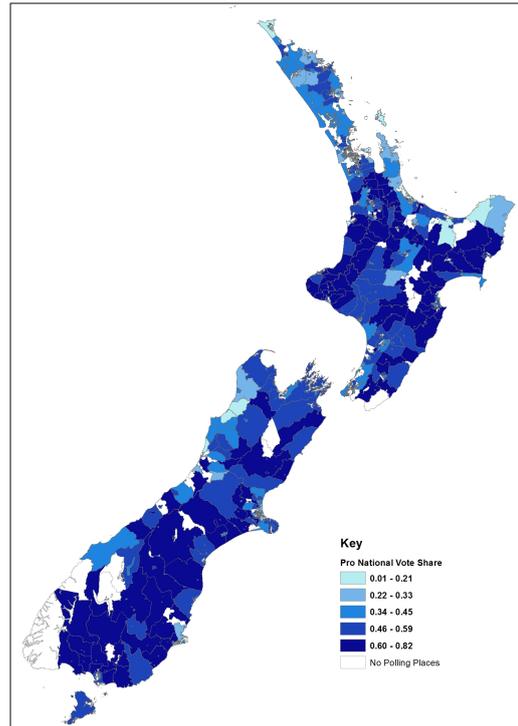


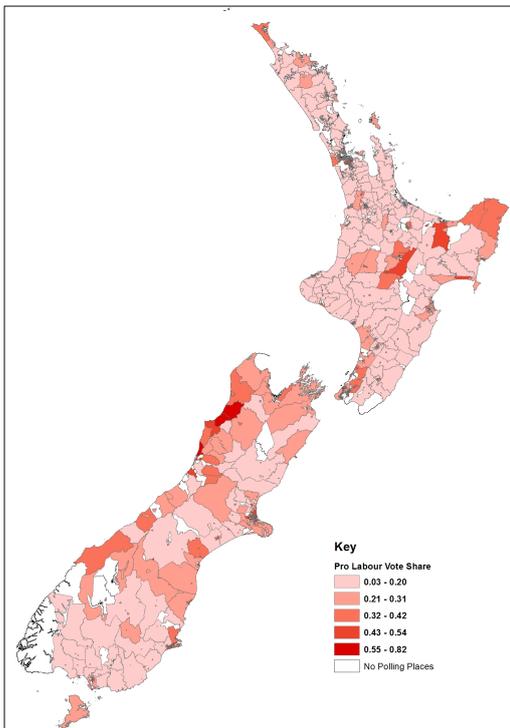
Figure 3: Geographical distribution of support for MMP and the three biggest parties



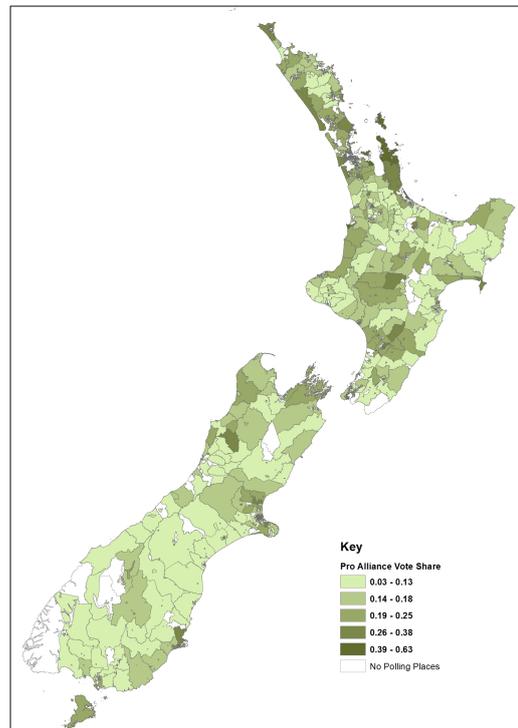
(a) Support for MMP



(b) Support for National



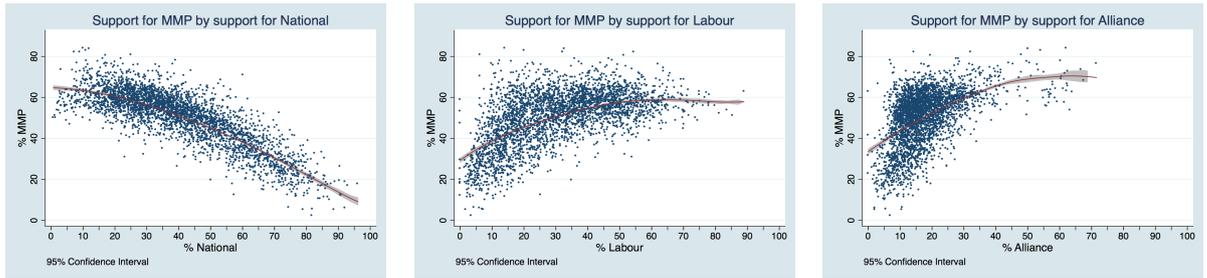
(c) Support for Labour



(d) Support for Alliance

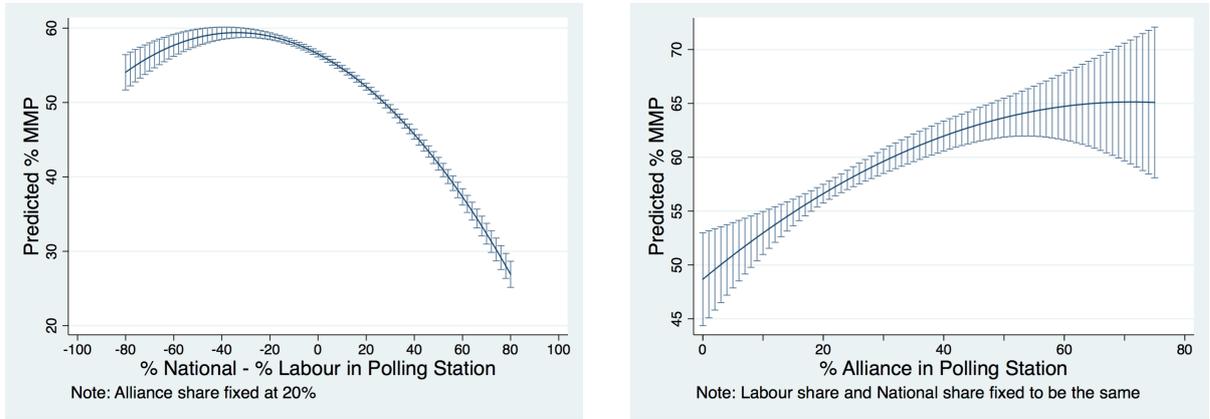
Darker tones denote more support. Natural breaks used: Figure 3a (0-12%; 12-35%; 36-47%; 48-55%; 56-62%; 62-82%). Figure 3b (1-21%; 22-33%; 34-45%; 46-59%; 60-82%). Figure 3c (3-20%; 21-31%; 32-42%; 43-54%; 55-82%). Figure 3d (3-13%; 14-18%; 19-25%; 26-38%; 39-63%)

Figure 4: Support for MMP by party support



Local (unconditional) polynomial smooth plot with 95% confidence intervals: support for MMP as a function of support for National (left) , Labour (center), and Alliance (right). Each dot in the figure is a polling station.

Figure 5: Predicted support for MMP

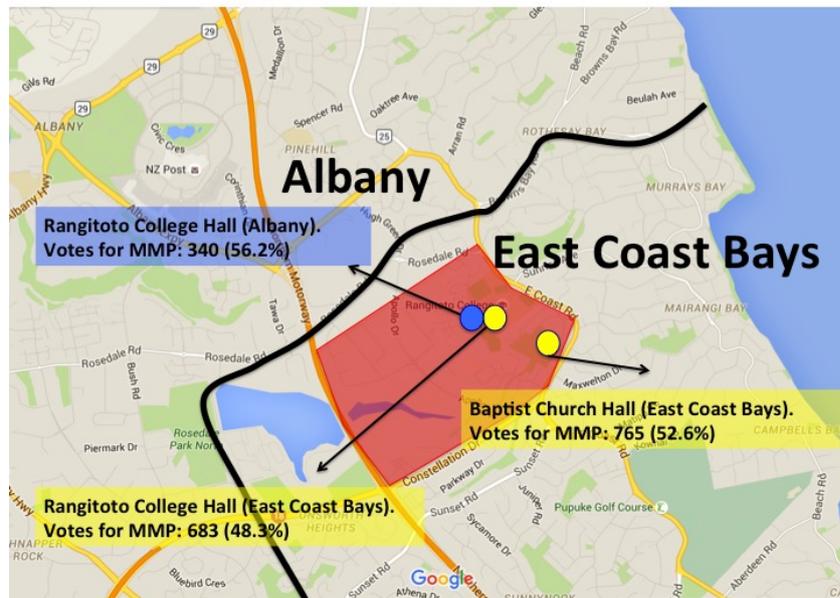


(a) Conditional on the differential share of votes for National and Labour at the polling station, fixing the share for Alliance at 20%. The further to the right, the larger the share for National compared to Labour.

(b) Conditional on the share of votes for Alliance at the polling station, fixing the shares of National and Labour to be the same. Note: the maximum share for Alliance at any polling station is 72%.

Predicted shares for MMP taken from regression (6) in Table 4 (95% confidence intervals plotted). See expression (1) for the regression specification.

Figure 6: Example of pairwise matching: Rangitoto College Hall



Example of a polling station that has ballot boxes for more than one electorates: Rangitoto College Hall, which has ballot boxes for both ‘Albany’ and ‘East Coast Bays’ electorates. The area in red represents the Area Unit to which the polling station belongs (Area Unit # 507,300).

Figure 7: Differential turnout between the Referendum and the General Election

