The economic bias of the turnout and a theory of economic inequality under different electoral rules: the case of New Zealand

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Abstract: *Proportional representation is generally known to be associated with higher electoral participation in the literature of politics. By the same token, the relation between higher turnout and better chances for the left parties to garner support at the ballot is stressed by multiple previous studies. On the other hand, left partisanship of the government and the lower level of income inequality are known to be in positive relation in democratic countries. However New Zealand is a clear outlier and an example of simultaneous diminish in inequality and electoral turnout since the electoral reform of 1996 and switch to proportional representation. Utilizing a market competition framework, this paper argues that what matters for the level of inequality is not the rate of electoral participation, but rather the distribution of voters across the economic distribution. It is the income bias of the voters that allows for the proportional representation to mitigate the economic inequality. Data is used from New Zealand Election Study surveys for 1990, 1993 and 2011 as well as the Manifesto Project dataset on the party electoral platforms. Our quantitative analysis involves logistic regression and variance analysis.*

1. Introduction

The pervasive lower level of economic inequality in countries with variants of proportional electoral systems (PR) has occupied the political economists since 1970s. Competing theories have been developed since to explain this phenomenon. Soskice and Iversen (2006) offer a model of alliance incentives between Lower, middle and higher classes under different systems and suggest a higher frequency of left partisanship under PR because it best serves the interests of the middle class and it is the middle class that has the flexibility to ally with the lower or the higher classes. Persson and Tabellini (2000, 2003) argue that parties favour more broad-based or 'universalistic' spending programs under PR. This is in contrast with plurality systems where especially in swing districts, in order to get their candidate elected, parties opt for more geographically targeted appropriation of the budget, the so called pork barrel practice. Tabellini, Roland and Persson (2007) focus on the higher frequency of coalition government under PR and using the concept of common pool problem argue that coalition government tend to spend more because each party in a coalition does not fully internalize the fiscal costs of spending.

A fourth theory, utilizes the notion of turnout bias as its core premise to explain the lower level of inequality under PR. Right-leaning government rise to power when there is a bias in the preferences of the voters against further redistribution. This is assumed to be related to the economic condition of the voter and hence when the voters are richer on average compared to those who do not vote in an election, the turnout is said to be economically biased towards the rich. This theory asserts that proportional representation increases electoral turnout and by doing so decreases the economic bias of the turnout. This in turn shifts the center of gravity of the government to the left and trigger more redistribution which eventually leads to leww inequality.

The key assumption of the bias theory is that bias is in negative relation with turnout that is to say it increases with the decline in participation. However, the case of New Zealand after electoral reforms violates this assumption. New Zealand is the only country within the OECD that experienced change from majoritarian to proportional electoral system in the past few decades. The wealth of data produced during this period allows the study of the impact of the electoral reforms on socio-economic parameters like no other developed country which experienced such change because most of such transitions happened among the European countries early in the 20th century. After electoral reforms, inequality remained relatively constant for about 15 years while the rate of electoral turnout continuously dwindled. Using New Zealand Electoral Study (NZES) and the Manifesto Project data, we propose and test an alternative explanation for the impact of the electoral system on the level of inequality that takes the economic bias of the turnout instead of its level as its intermediary variable.

We believe that the case of New Zealand benefits from an extra advantage in the study of electoral systems and their socio-economic impact. This advantage has to do with the relative homogeneity and isolation of the country that aligns its politics more or less across the single economic dimension without salient cross-cutting or overlapping politicized social cleavages.

In the following sections , we first review the current literature on the link between inequality and voter turnout. We then explain our model of inequality under proportional and majoritarian systems and derive two hypotheses from our conceptual framework. In section four we introduce our analytical strategy and the data used to test the hypotheses. The fifth section introduces the results, while the last section concludes.

2. The literature on turnout and inequality

In this section we review three strands of the literature that are relevant to the chain line of reasoning we have used in our research. These include 1) the impact of inequality on voter

turnout; 2) the effect of voter turnout on inequality; and 3) the impact of various aspects of the electoral system on voter turnout and thence on inequality.

There is a broad agreement among the comparative political economists that higher inequality depresses the electoral turnout and increasing the anti-distribution of vote (Schattschneider 1960, Solt 2010)[1]. However, different researches deal with more delicate aspects of this relation and the different mechanisms through which the chain of causation is formed. Lister (2007) focuses on the type of welfare system (universalist vs. targeted) and considers norms and values to be the intermediary between inequality and participation. He argues that the historic impact of universalistic welfare states has been to create a solidaristic and egalitarian value system which ushers in higher demand for redistribution through government and hence lowers inequality. But lowering inequality in turn leads to consolidations of the aforementioned value system and welfare institutions as well.

Some other research that are usually grouped together as resource theories, focus on the difference in access to resources among the poor and rich for manipulation of the political agenda and institutions (Gleaser 2006, Glaeser, Scheinkman, and Shleifer 2003). Solt (2010) found that "higher levels of income inequality powerfully depress political interest, the frequency of political discussion, and participation in elections among all but the most affluent citizens".

Horn (2011), asserts that the impact of inequality on turnout is conditioned on where the largest gap in distribution takes place. Through studying several European democracies he proposes that turnout is depressed when inequality is high between the very rich and the middle class whereas it increases when at the same level of inequality this gap is between the lower and middle class. A consequence of this approach is inadequacy of measures such as Gini index that are insensitive to the shape of distribution at the two ends to study the relation between turnout and inequality; something that has been made explicit by other scholars (Antonio M. Jaime-Castillo 2010).

Study of the effect of electoral system on economic inequality has a long history. Since students of American politics were pioneers of this area, the field was initially concerned with the functioning of majoritarian (or plurality) system adopted for the election to the US legislature. One line of argument evolved from Downs (1957) and Romer (1975) and gained rigor in the work of Meltzer and Richard (1981). Their theory which later became the starting point of numerous other studies argued for the existence of a negative feedback loop between inequality and voting whereby increase in inequality increases the vote of pro-redistribution parties and causes left partisanship in the government which in turn decreases inequality through more taxation and social spending[2]. Today there is ample evidence to the contrary and we there is not enough empirical support for the assertion that there is a self-corrective mechanism in the electoral system by which inequality is kept under control (see for example Luttig 2013). Nonetheless, the analytical approach of this theory which concerns with the distance between the income of the median voter relative to the average income of voters.

The major shortfall in this theory is its insensitivity to the rate of turnout and the portion of population which remains electorally inactive. The key to the impact of electoral turnout on the mechanisms through which inequality is dealt with politically, is its consequence for the composition of the voting population and hence change in the redistributive preferences of this population which is by no means an accurate approximation of the whole voting age population. A modification to the Meltzer-Richard theory was offered by Franzese (2001). He argues that decrease in inequality through improved social spending may only takes place if the poor

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[1] There are few researches that suggest to the contrary. See for example Lyle Scruggs Daniel Stockemer (2009)

[2] See also Persson and Tabellini (1994) and Alesina and Rodrik (1994) for similar arguments

actually vote. Boix (2003) views intensification in the electoral participation as a result of shift in the median voter towards the low-income sector as intensifying redistributive tension in the political system which effectively forces politicians to expand public programs (2003: 200). Many other research share the view that decrease in turnout increases the anti-redistribution bias of the vote cast (Lijphart 1997, Mueller and Stratmann 2003, Carey and Horiuchi 2013).

Another group of researches warn against the universality of surge in redistribution with increase in turnout reminding that this is true only if economic redistribution is the most salient issue on the agenda in electoral contests (Roemer, 1998; Roemer and Van der Straeten, 2005, 2006, Finseraas 2007). As close as it gets to our argument in this paper, we show that the conventional wisdom about the negative relation between turnout and its economic bias may be untrue even when welfare issues are top on the electoral agenda.

Finally, a third branch of the literature assumes a positive relation between proportional electoral system and turnout and uses the turnout bias to bridge between the type of the electoral system and the level of inequality. Some studies while acknowledging this mechanism suggests a voter-friendly registration rules, proportional representation, infrequent elections, weekend voting, and holding less salient elections concurrently with the most important national elections to address the problem of inequality (Lijphart 1997, Geys 2006). Some others identify the effect of proportionality on turnout but at the same time maintain that high number of parties that is chronic to some proportional systems is a depressant of voting as it makes the political system more complicated (Jackman 1987, Gallego 2010). Blais (2006) names more aspects of the electoral system as being responsible for the level of turnout.

3. Model and Hypotheses
In this section we develop a theoretical model to explain different economic composition of voters and non-voters under FPTP and PR systems. We first start with the majoritarian system.

3.1 Electoral competition under majoritarian rules
In the interest of space we start by adopting the Duverger's law as our number one premise. Duverger law holds that under majoritarian electoral rules and in the absence of social cleavages with clear geographical concentration, the party system converges to two major parties. In other words, only two parties in such systems have a credible chance of entering the parliament and leading the government (Duverger, 1986).

In reality however, there are situations when this may not be true; for example in cases where an extra-economic social cleavage (say an identity cleavage) actively impacts the pattern of political competition. Presence of regional parties in the British Parliament (Liberal Democrats and the Scottish National Party from Scotland, Sinn Fein and Democratic Unionist Party from the Northern Ireland) or the Bloc Quebecois from Quebec in Canada's national elections may all be attributed to the geographical concentration of the party constituency in certain regions due to the nationalist/separatist divides. Nevertheless, in the absence of such cross-cutting cleavages, say in case of Australia's lower house, the United States, and New Zealand before the 1993 electoral reforms, usually no third party can effectively make it to the national legislature which is the situation we assume here. So we assume a two party contestation where economic matters are the dominant agenda of the electoral competition. Referring to the literature, we also postulate that there is a positive correlation between income (or education) and the likelihood of electoral participation (for example Lijphart, 1997; Horn, 2011).
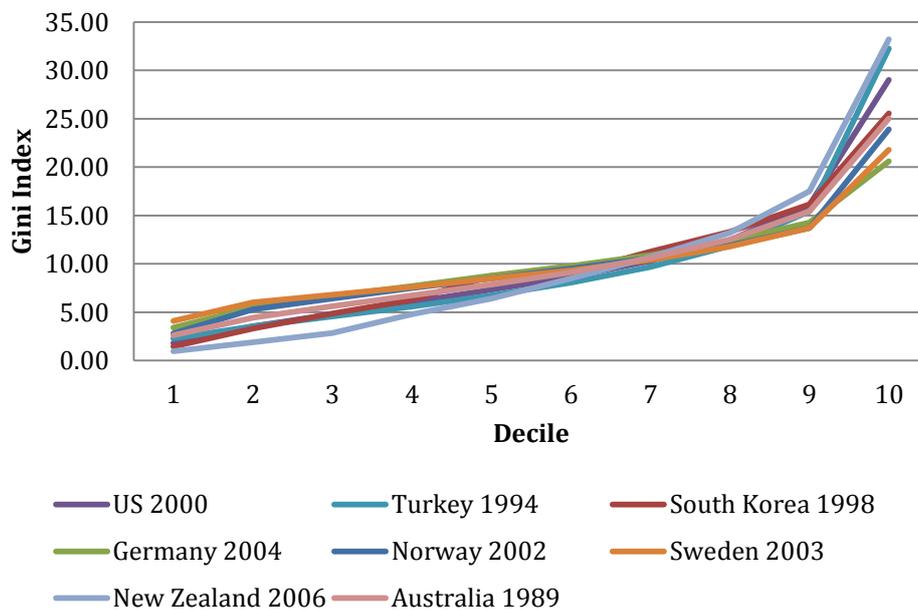
Under Majoritarian rules two parties compete for supremacy in the parliament. Given the economic orientation of the political contestation assumed here, one of the parties seeks to

garner vote among the lower and middle income population whereas the other will target the vote of middle to high income earners.[3]

By deviating the vote away from the small parties, majoritarian systems effectively reduce the elections a) to a duopoly and b) to a game of winning 50%+1 of the seats per the two major parties. In the absence of genuine competition, both parties are aware of the fact that they have a natural representation of the voters who are least well-off (centre-left party) and most well-off (centre-right party) respectively. Put it plainly, these voters have nowhere to escape from their respective parties other than choosing not to vote at all. This implies that the two parties do not need to do much to appeal to the voters at the tails of material and ideational distribution. Rather, where they need to compete is at the middle where their constituencies overlap and each vote for one of the two parties comes at the expense of the other.

But at the same time, concentration of the parties on the median voter inescapably alienates a certain portion of the would be voters at the two tails distribution and causes them to opt out of voting. This reality however is not symmetrical. This is due to the fact that nearly everywhere in the world the shape of the income distribution (and more so the wealth distribution) sharply slants upwards towards the 10th decile and more accurately the 100th percentile. On the other end, the distribution is more skewed and relative economic homogeneity can be observed among and between the first few deciles (graph x).

Graph x: the shape of income distribution in different developed democracies with various economic systems.

Legend:
US 2000 — Turkey 1994 — South Korea 1998 — Germany 2004 — Norway 2002 — Sweden 2003 — New Zealand 2006 — Australia 1989

Source: 'UNU-WIDER, 'World Income Inequality Database (WIID3.0b)', September 2014'.

Still, this does not imply that in a majoritarian system parties tend to be more moderate than their counterparts under proportional representation. Because where the two parties compete

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[3] This dynamic has been investigated by several authors. See for example Meltzer and Richard 1981; Moene and Wallerstein 2001, 2003; Soskice and Iversen 2006.

is over the median voter and not the median citizen. This is the aspect of electoral dynamic that is largely missing from Meltzer-Richard (1981) and the Moene-Wallerstein (2001, 2003) models; the two well-known and competing theories of inequality under majoritarian rules. Given the skewness of the voting incentives towards the more educated higher end of the economic distribution, there is an economic bias in the election turnout and the median voter, rather than being somewhere in the fifth decile is more likely to be in the sixth or seventh deciles. As a consequence, in order to appeal to the median voters the two parties have to commit themselves to a less distributive platform because the upper middle class is less likely to benefit from any low to moderate level of progressive distribution. This is less true in proportional systems where major parties have to compete with other competitors at the top and the bottom of the economic distribution.

Nevertheless, countries with majoritarian system are not all the same in terms of the rate of turnout. For example New Zealand and the United States lie at the opposite ends among such countries when it comes to incentives for participation. Whereas the level of turnout in the US has been around 50 percent for the whole post WWII period, this average remained above 90% in New Zealand between 1946-1996 and only dropped to the 70-80 band after the electoral reform.

One factor specific to the majoritarian systems (but to a lesser degree true about semi-proportional systems) that may explain this difference is the population size of the electorates. The argument is based on the Downsian formula of voting decision at the individual level:

> (Utility of the favourable party winning the election + disutility of the other party(ies) winning the election) * Probability of the decisiveness of the individual's vote – The costs of voting

According to this formula, smaller size of electorate is found to makes every individual vote more decisive in the election outcome and hence incentivises more people to cast vote (see for example Owen and Grofman, 1984; Mueller, 2003, Kaniovski and Mueller 2006). Compared to all other majoritarian developed countries, New Zealand has the largest size of legislature relative to its population. While during the majoritarian era in New Zealand the electorate size relative to the total population stood at around 30 thousand, this figure varied between 100 and 700 thousand in the post-war period in other developed countries with plurality systems (various statistical resources).

There are other procedural factors that can explain higher relative rate of turnout in New Zealand prior to its electoral reform. For example speaking about the US, The electoral system is multi-layered, multi-stage, highly decentralized and candidate centre and hence looks excessively complex to the average citizens (Bowler, Donovan and van Heerde, 2005). Moreover, the separation of executive from the congress and discrepancy between the parties that hold the government office and the balance of power in either houses of the congress further adds to the complexity of the agent-outcome analysis for the average voter. These and some other factors such as the requirements for voter registration systematically discourages voting especially among the least well-off/well-educated part of the population and places the potential median voter further to the right of the voting age population who are at the middle of the economic distribution.

In New Zealand, factors such as relative economic homogeneity of the population in the agricultural economy in line with the absence of activated non-economic social cleavages contributed to a sense of political equality which furthered participation in the election.[4] Simultaneously and thanks to the parliamentarian model of politics, there was no conflict of representation between various branches of the state and the straightforward and party-

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[4] For a detailed meta-analysis of research on these factors in Anglosaxson countries see Geys 2006.

oriented electoral rules kept politics closer to the grasp of the public. Consequently, electoral participation was maintained in the territory of 85 to 95 % for the entire post-War period until the electoral reforms on 1993 (see graph x for comparison). Correspondingly, apart from the surgical neoliberal reforms of 1988 to 1990 that resulted in an unprecedented spike in inequality in the country, for the best part of the post-War period, economic inequality in New Zealand approximated the best of the European proportional democracies.

Graph x: Rate of Turnout among countries with majoritarian electoral rules 1944-2014
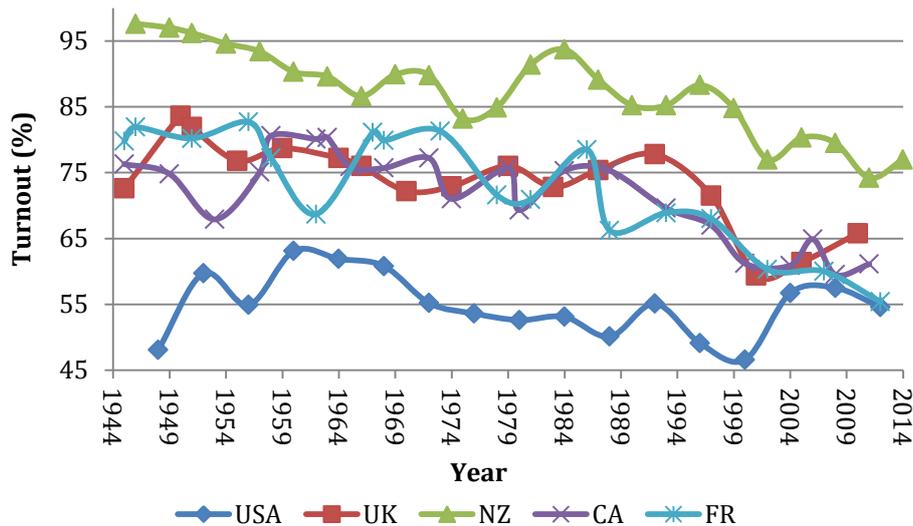
Source: International Idea Voter Turnout Database,
http://www.idea.int/vt/ (Accessed 4/5/1015)

Electoral competition under majoritarian rules can be likened to market competition under the situation of duopoly as a special case of oligopoly. Under oligopolistic competition, producers tend to under-supply the market depending on the inelasticity of demand. More inelasticity means more buyers are ready to pay for a commodity at a certain price compared to the situation of perfect competition. Under majoritarian rules there is no competition over the extreme voters i.e. the voter that may vote for platforms to the left of the left party and the right of the right party.

Moreover the cleavage system is one-dimensional. One dimensionality can have two impacts: Either the two parties position themselves on different sides of the divide on several cleavages or both take a similar stance with regard to certain issues. When former is the case voters with sensitivity to multiple cleavages have only one degree of freedom that is they have to choose a policy package in which there are elements that may be of sharp contrast to their preferences. Parties at best can choose their stance on several cleavages to be consistent with each other based on a preliminary assessment of the public opinion so to alienate as little voters as they can. If both parties take a similar stance along a social divide, it may only discourage certain voters for whom the respective cleavage is of high saliency relative to other cleavages. In short both scenarios discourage voting by limiting the options offered to the potential voters.

3.2 Electoral competition under PR

Under PR, the barrier against the entry of new parties is significantly lower. We now continue from a duopoly situation and trace the logical consequences of introducing competition. Again

we assume a single issue polity where economic management and distribution is the sole focal point of the contest. For the sake of simplicity, we also assume that no two parties fully overlap in their platforms and if that happens (which is rarely the case in reality) they can be considered as one party since they most likely tend to behave similarly in their strategic and coalition building behaviour.

At the majoritarian moment the largest section of the non-voters are concentrated at the lower end of the economic spectrum. There are three sections of the public that may be targeted by the newly emerging parties: to the left of the centre-left party, to the right of the centre-right party and between the two centre parties. We noted before that the centre of gravity of the non-voters is biased towards the left of the median, meaning that there is a greater concentration of non-voters at the lower end of the economic distribution than the higher end. As a result, the threat of the newly formed left party to the centre-left party is less critical than the threat of the new right party to the centre-right party.
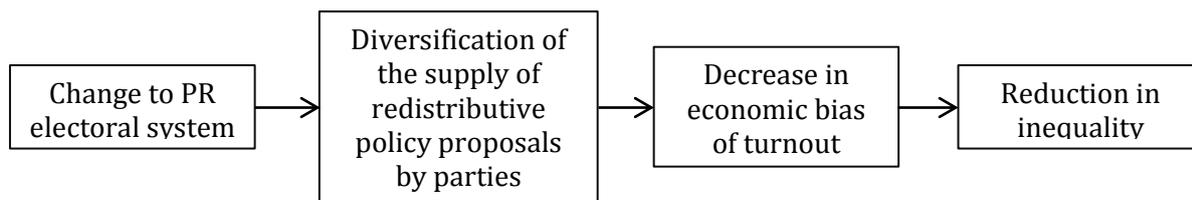
[image – shift in the constituencies]

The reason is that there is a smaller hollow space (i.e. non-voter population) at the right side to be filled than at the left. Consequently the right and centre-right parties must bear considerable overlap in their constituency. To avoid this situation, the centre-right party is made to moderate its stance so to appeal to a wider audience at the centre instead. As this happens, all the parties to its left have to offer more redistributive platforms to expand to the empty available space among the less affluent but more numerous citizens in the society. This transformation is then translated into a balanced class composition of the voters' portfolio which is demonstrated in the case of New Zealand after electoral reforms. This is regardless of the fact that in the Downsonian paradigm, change to PR reduces the closeness of election and hence decrease the overall likelihood of voting per citizen in all income groups.

An immediate challenge to the above synthesis would be that the centre-right and the right party may deter inter-rivalry by agreeing to form an alliance once elected. This does not happen in reality however if we look at the shape of economic distribution in present societies. The so-called 1% vs. 99% metaphor largely holds in every distribution in the world (graph x above). This implies that the cost of forging an alliance with the right party far outweighs its benefits. The right party is the political representative of the very high income minority who pay a larger share of the taxes to be distributed. Appealing by the centre-right party to a party that opposes any redistribution so fiercely, would mean antagonizing many at the left hand side of the centre-right's party constituency. Rather, the centre-right party is better-off to do its best to avoid coalition with the right party and instead look for allies at the centre.

In this paper we propose an alternative model for explaining the relation between electoral system and the level of inequality. According to this model, it is not the increase in turnout that mitigates inequality. Instead, proportionalism may cause a decrease in the level of inequality by introducing more electoral competition over the redistribution policies. When parties distance their redistributional rhetoric in quest for more support, they expand the range of available redistributional proposals. Most of this expansion aims at reaching the less well-off end of the economic redistribution because there is a larger pool of potential voters at the lower end than the higher end. Hence, most of this expansion is in the form of higher pro-redistribution commitment. This, in return results in more pro-redistribution voters to participate in the election and hence reduction in the anti-redistribution bias of the vote cast irrespective of the level of turnout.

Graph x: conceptual framework of the research

Change to PR electoral system	→	Diversification of the supply of redistributive policy proposals by parties	→	Decrease in economic bias of turnout	→	Reduction in inequality

To assess this model we propose and test two hypotheses:

Hypothesis 1: *Change from plurality to proportional electoral rules in New Zealand diversified electoral competition over redistributional policies. This expansion is higher compared to other policy areas.*

Hypothesis 2: *The income bias of turnout decreased in New Zealand after electoral reforms despite the reduction in the level of turnout.*

4. Data and Methods

Hypothesis 1

Our first hypothesis concerns with the expansion of redistributive policy spectrum in the electoral contests. One way to know if parties have expanded across various policy domains in their electoral platform is to study their electoral programs. For this purpose we use data from the Manifesto Project. Manifesto project is aims at quantitative content analysis of parties' election programmes in national elections since WWII. In this project, *manifesto* is defined as text published by a political party or presidential candidate in order to compete for votes in national elections. One manifesto is coded per each party-year.

The current dataset contains 88 party-years in 23 New Zealand general elections from 1946 to 2011. In each election, only parties that manage to gain at least one seat in the parliament are included in the analysis. Party positions in each election are hand-coded by multiple coders across 43 policy items that are categorized in seven broad policy domains. Each policy item is attributed a number per party per year that shows the percentage of the party platform that is devoted to favourable mention of that policy item (Werner et. al., 2014).

Our analytical strategy is to gauge the total amount of variation among parties in their emphasis on redistributive policies. A measure of dispersion is required to judge whether and to what extent the parties have diverged in their emphasis on redistributive matters over time. Two possible candidates are standard deviation (SD) and average absolute deviation. Both measures are susceptible to change in the number of data points used in their calculation. Regardless of the data values, both measures inflate with increase in the number of data points. Henceforth, choice of the measure may not remedy this problem and the results must be judged with care because the number of parties present in parliament increased from 2-3 to 6-8 after the electoral reform. Although this is a challenge to judge the volume of change in dispersion over time, it does not prevent us from telling which domains/items of electoral preferences experienced heightened dispersion relative to other domains/items. In this research we choose SD as it is more common and better known.

We also compare the average importance of domains over time. Average as a measure of centrality does not show if parties vary in terms of their emphasis yet it is important to make sure that the relative importance of the redistribution domain has not declined relative to other policy domains.

To calculate the standard deviations, in the first step, we calculate the standard deviation for each of the 43 items in the dataset per each election as a measure of dispersion between the electoral programs. One problem to address in this step is to deal with the policy areas which are measured in both positive and negative directions for some party-years. For example, the welfare state policy is measured both in terms of the favourable mention of the welfare expansion and the favourable mention of welfare retreat. As odd as it may sound, parties release signals to the public that are contradictory in nature. In these cases we replace the policy item by subtracting the negative score from the positive score for that party/year.

We then average the standard deviation for all the data points before and after the electoral reforms and average the difference between the average pre-reform and post-reform standard deviations for all items in a policy domain to arrive at a unitary measure of dispersion among the policy domains as a result of the electoral reforms.

Hypothesis 2

The second hypothesis concerns with the change in the economic bias of the turnout as a result of switch to PR system. To test this hypothesis we adopt two sets of analysis. We first test a logistic regression model using the NZES dataset to check whether measures of economic wellbeing are statistically related to the voting decision and if so how big this effect is compared to other control variables. We conduct this test on the 2011 election data.

NZES is an electoral survey that has been conducted right after every general election in New Zealand since 1990. It measures political behaviour against a wide variety of demographic, contextual and attitudinal attributes of the voters. The data is acquired through questionnaires posted to randomly-selected registered electors across the country. In the 2011 survey, a sample size of 3000 was used weighted to compensate for under-response related to gender, education and ethnicity. All our calculations use the weight –corrected dataset.

Independent Variables

Economic wellbeing consists of two dimensions: income and wealth. The NZES dataset offers three indicators to measure the economic wellbeing: household income, home ownership and number of welfare benefits that the respondent's family are entitled to. The status of home ownership is comprised of seven categories ranging from "living at parent's or other family members' home" to "Owning house or flat mortgage free". As such, home ownership, can be a good indicator of household wealth because normally the more well-off a household be, the more likely it owns its prime residence debt free. The drawback however is that the NZES survey does not address the possibility of a household owning multiple properties apart from its main place of residence.

Fortunately, the third indicator i.e. the number of welfare benefits received by the household is a good complementary measure of family wellbeing. In the literature on the typology of the welfare states, New Zealand's welfare system is categorized as Liberal with means-tested criteria for entitlement. This allows us to rely with confidence on this indictor as an aggregate measure of material well-being of the family.

Control Variables

To account for as much variability as possible based on the available data, 17 variables have been chosen to represent five different categories of effect. These categories are as follows:

Socio-political Attitudes: are a set of composite variables constructed based on a larger set of survey questions to measure individuals' cultural, social and economic orientations. These variables include:

   a. Social Left-Right Orientation: aggregates individuals' agreement with nine arguments about social trust, appreciation for authority and discipline, trust in the accountability of

the government, trust in the effectiveness of the elections and alike (refer to question E16 on the survey)

b. Attitude towards the public sector: measures opinion about the desirability of public ownership of some currently of formerly public services in banking, media, energy, transport and post sectors.

c. Attitudes toward government spending: is a composite variable to report people's advocacy for increase or decrease in the government spending in the areas of health, education, unemployment benefits, defence, superannuation, business and industry, police and law enforcement, welfare benefits, environmental preservation.

d. Egalitarianism: aggregates respondents' views about 10 measures of economic fairness including the role of the government in welfare redistribution, normative and actual plausibility of the gap between the rich and the poor and people's responsibility in their economic (mis)conduct.

e. Government involvement in economic activity and welfare provision: Measures the intent of support for government involvement in provision of care for the disadvantaged social groups (unemployed, elderly) as well as universal provision of free education, healthcare and employment.

f. Interest in politics: asks how interested are people in politics in general

g. Political Left-Right Orientation: ranks people on a self-assessed general scale from left to right.

Demographics: consists of the most common four factors to affect the voting decision of individuals often sighted in similar research. These include ethnicity (Maori / Non-Maori), education level, religiosity and residence type (whether respondent lives in a rural area, a town, a small city or a major city). Age, gender, marital status and household size where also assessed initially only to find to be insignificant in our models.

Position in the labour market: the broad consensus is that economic cleavage is the most fundamental cleavage around which political contestation takes shape [ref]. Where one stands in the social division of labour has a major impact on her network of social interactions and class awareness. This in turn shapes cultural elements such as attitudes, values and expectations that lay the foundation of one political behaviour. We have four variables in our model to capture these effects. Type of employment asks whether a person is in the workforce, in the job market, has a full or part time job, or is job seeker. Employment sector determines whether one is employment in the public, mixed or private sector and if in private sector self-employed or in wage relation.

The other two variables deals with job market related perceptions. The third variable asks the perceived likelihood of being able to get a new job in case of a job loss and the fourth variable reveals the personal sense of economic insecurity, whereby respondents are asked about their perceived likelihood of severe drop in household income in the coming year.

Assessment of the national economy: containing only one variable asks respondents their assessment of the overall performance of the national economy in the past 12 months. This factor is pinpointed as an extremely decisive in the voting decision all across the distribution spectrum. [ref]

Attitudes about the electoral and party systems: these variables aim at gauging the relation between people's opinion about the electoral system, the consequent level of fragmentation in the party system (i.e. too many parliamentary parties) and government type, on their voting choice. Survey questions face the respondents with compromises between the electoral rules and their political outcomes. Five variables are included in the model:

a. *Current fragmentation level*: if respondent thinks that there are too many parties in the parliament

b. *Proportionality vs. fragmentation*: if the respondent is ready to accept proportional representation at the expense of more fragmentation in the party system
c. *PR vs. majoritarian rules*: whether the respondent has a higher tendency towards proportional or majoritarian electoral system
d. *Unitary vs. Coalition government*: This is a composite variable and aggregates opinions about the type of government respondent consider being more stable, effective, responsive and accountable.
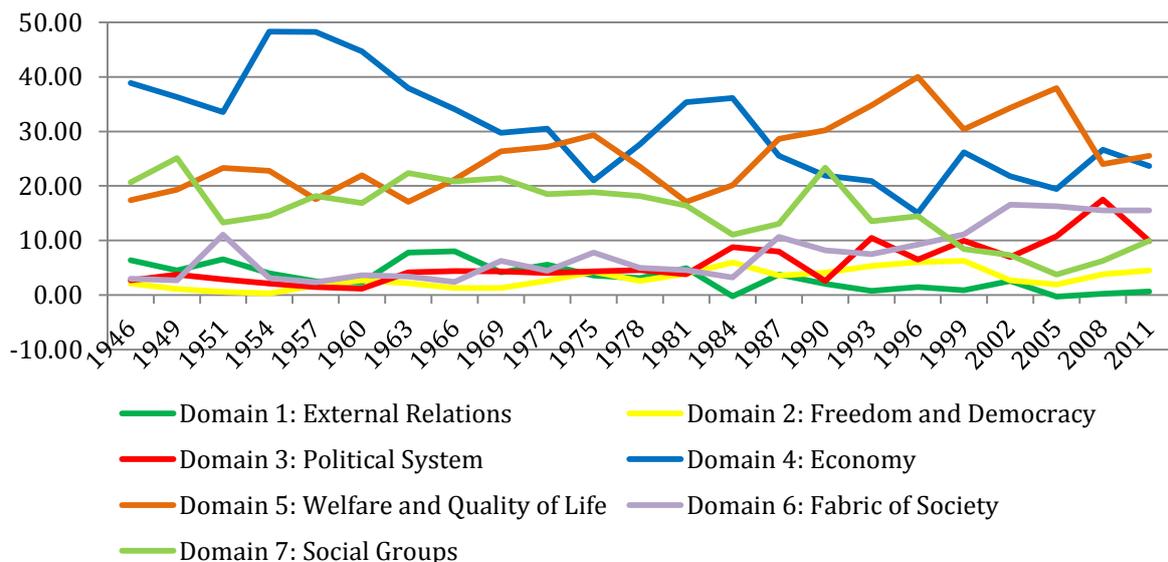
Our second analytical strategy in assessing the second hypothesis is to measure the income bias of turnout before and after the electoral reform. We define the measure of income bias as the ratio between the average income of actual voters divided by the average income of the voting age population who did not vote. When this ratio is less than 1 it means that voters are on average poorer than voters. When it is larger than 1 the opposite holds. The average income of participants is taken as the variable of interest. The data we use is again from the NZES dataset for all elections since 1990 (8 elections). Because the family income data of the NZES survey comes only in ranges and is not continuous, the best we could do was to assign the average income of deciles. We used data from Perry (2014) for this purpose. For most survey years, the income cut-off points are based on the inter-decile points from the annual income survey conducted by Statistics New Zealand (StatsNZ). In the data for 1990 and 1993 elections (the only ones conducted before the electoral reform), income ranges are arbitrary and hence correspond to ranges that differ from deciles. For these two elections the average income per ranges is estimated by approximating and overlaying the cut-off points from StatsNZ on the decile shares of household income from Perry (2014).

5. Results

5.1 Electoral reforms and change in the electoral platforms of the parties
Table x shows the average share of different domains from the party manifestos of all parties per election years.

Table x: average share of different policy domains from the electoral manifestos of parties (1946-2011)

Domain 1: External Relations
Domain 2: Freedom and Democracy
Domain 3: Political System
Domain 4: Economy
Domain 5: Welfare and Quality of Life
Domain 6: Fabric of Society
Domain 7: Social Groups

Data source: Manifesto Project 2014

Table x clearly shows that the welfare policies (domain 5) has grown in importance in electoral contests and since 1987 has stood above all other policy domains except for the 2008 election where it was surpassed by the economy domain.

Table x summarises the results of our variance analysis of the relative dispersion of policy domains through time.

Table x: Trends in diversification of party platforms across different conceptual domains before and after the electoral reforms (1946-2011)

Domain	Policy Items	SD 1946-1993	SD 1996-2011	Item Score	Domain Score
Welfare and Quality of Life	Environmental Protection	1.3	7.9	6.6	3.1
	Culture	1.6	1.1	-0.5	
	Equality	0.7	4	3.4	
	Welfare State Expansion	3.1	8.4	5.3	
	Education Expansion	3.1	3.9	0.8	
Fabric of Society	National Way of Life	0.8	3	2.2	2.4
	Traditional Morality	0.6	4.1	3.5	
	Law and Order	1.4	3.6	2.2	
	Civic Mindedness	0.5	1.6	1.1	
	Multiculturalism	0.8	3.6	2.8	
Political System	Centralisation	1	0.2	-0.8	1.8
	Governmental and Administrative Efficiency	1.1	3.3	2.3	
	Political Corruption	0.3	0.4	0.1	
	Political Authority	0.5	6.2	5.7	
Freedom and Democracy	Freedom and Human Rights	0.8	2	1.2	1
	Democracy	0.9	2.4	1.5	
	Constitutionalism	0.1	0.5	0.3	
Economy	Free Market Economy	1.9	3.4	1.4	0.1
	Incentives	2.2	2.4	0.3	
	Market Regulation	1	1.4	0.4	
	Economic Planning	4.9	0.4	-4.5	
	Corporatism/Mixed Economy	0.1	0.1	0.1	
	Protectionism	1	0.8	-0.2	
	Economic Goals	1.9	0.8	-1.1	
	Keynesian Demand Management	0	0.2	0.2	
	Economic Growth	2	2.4	0.3	
	Technology and Infrastructure	3	3	0	
	Controlled Economy	0.8	0.4	-0.3	
	Nationalisation	0.5	2.2	1.6	
	Economic Orthodoxy	2.9	4.5	1.5	
	Marxist Analysis	0	0.05	0	
	Anti-Growth Economy	0	1.8	1.8	
Social Groups	Labour Groups	1.3	2.2	0.9	-0.2
	Agriculture and Farmers	2.8	1.5	-1.3	
	Middle Class and Professional Groups	0.4	0.1	-0.4	
	Underprivileged Minority Groups	0.4	1.3	1	
	Non-economic Demographic Groups	3.1	1.8	-1.3	
External Relations	Foreign Special Relationships	0.5	0.2	-0.3	-0.23
	Anti-Imperialism	0	0.1	0.1	
	Military	1.2	0.9	-0.3	
	Peace	0.5	0.3	-0.2	
	Internationalism	1.5	0.8	-0.7	
	European Community/Union	0	0	0	

Data source: Manifesto project 2014

The results reveal that the domain of welfare and lifestyle witnessed the highest diversification among all policy domains by an average score of 3.1. This domain in the Manifesto project consists of five items: environmental protection, culture, equality, welfare state expansion and education expansion. Table x explains topics that have been taken into account in assessing the party programs with respect to each item.

Table x: description of items used in composing the welfare and quality of life domain in the Manifesto project

Welfare State Expansion
Favourable mentions of need to introduce, maintain or expand any public social service or social security schemes for example government funding of health care, child care, elder care and pensions and social housing minus the favourable mention of limiting state expenditures on social services or social security or favourable mentions of the social subsidiary principle (i.e. private care before state care);

Education Expansion
Favourable mentions of need to expand and/or improve educational provision at all levels minus favourable mention of limiting expenditure on education such as the introduction or expansion of study fees at all educational levels or increasing the number of private schools

Equality
Concept of social justice; need for fair treatment of all people; special protection for underprivileged; need for fair distribution of resources; removal of class barriers; end of discrimination such as racial or sexual discrimination (e.g. racial or sexual discrimination) etc.

Environmental Protection
General policies in favour of protecting the environment, fighting climate change, and other "green" policies. For instance: general preservation of natural resources; preservation of countryside, forests, etc.; protection of national parks; and animal rights.

Culture
Need for state funding of cultural and leisure facilities including arts and sport. May include the need to fund museums, art galleries, libraries etc.; and the need to encourage cultural mass media and worthwhile leisure activities, such as public sport clubs.

Source: Manifesto Project Dataset Documentation, version 2014b, December 2014

The welfare state expansion which is of special interest to us in this research is by far the most heavily expanded item among all 43 policy items in the post reform era. This implies that parties have spread out in terms of their redistributional policies in an attempt to secure a wider base of support for themselves. This is equally true –albeit to a lesser extent, about education and social justice, the two other items related to the social expending.

To ensure that we are comparing two comparable quantities and control for the historical effects, we reiterated our calculations using only six elections on either side of the electoral reforms (i.e from 1978 to 2011). One more time, our calculations resulted in similar ranking order.

Results from the above analysis confirm our first hypothesis that electoral reform diversified the provision of redistributive policy proposals by the parties.

5.2 The impact of electoral reform on the income distribution among non-voters

We now assess the second hypothesis regarding the income bias of turnout. Table x lists the logistic regression coefficients for our model of relation between participation in the election and economic wellbeing controlling for socio-cultural and demographic factors. Model 1 only represents the effect of the control variables while model 2 only interacts dependent and independent variables. Model 3 combines the effect of all variables.

Table x: logistic regression modelling result for electoral participation (New Zealand 2011 general elections)

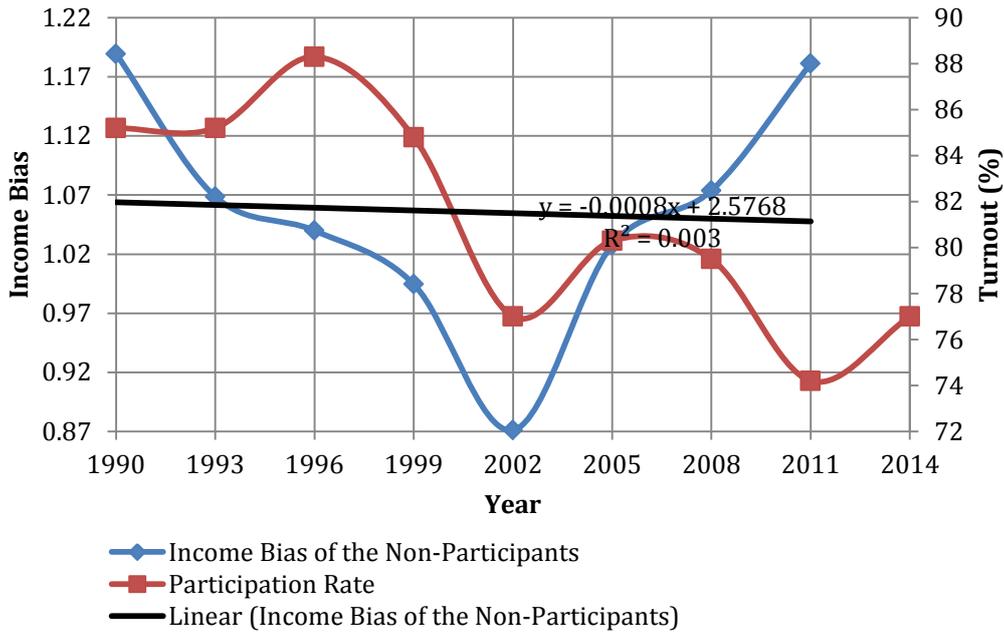| VARIABLES	(1) Model 3	(2) Model 2	(3) Model 1
Economic Wellbeing			
Household Income		5.86e-06**	5.52e-06**
		(2.42e-06)	(2.43e-06)
Home Ownership		0.141***	0.121***
		(0.0391)	(0.0406)
No. of govt. benefits received		0.00120	0.00503
		(0.0207)	(0.0203)
Socio-political Attitudes			
Social Self-orientation	0.395***		0.337**
	(0.136)		(0.136)
Extent of Public Sector	-0.206**		-0.187*
	(0.0941)		(0.0962)
Composition of govt. spending	0.301*		0.339*
	(0.182)		(0.178)
Egalitarian views	-0.174		-0.162
	(0.217)		(0.218)
Govt. involvement in the economy and welfare provision	-0.0293		-0.134
	(0.152)		(0.152)
Political Self-orientation	0.0281		0.0296
	(0.0423)		(0.0424)
Parents' political orientation	0.0867		0.0698
	(0.0966)		(0.0980)
Demographics			
Ethnicity (Maori or not)	-0.506***	-0.428**	-0.454***
	(0.175)	(0.172)	(0.174)
Religiosity	0.171**	0.187**	0.187**
	(0.0818)	(0.0820)	(0.0806)
Education level	-0.00166	0.0272	-0.00985
	(0.0453)	(0.0455)	(0.0458)
Residence (city, town, village) size	0.0849*	0.0566	0.0817
	(0.0501)	(0.0511)	(0.0510)
Position in the labour market			
Employment type	0.0154	0.0133	-0.00800
	(0.0442)	(0.0471)	(0.0478)
Employment Sector	-0.0759	-0.0594	-0.0616
	(0.0513)	(0.0514)	(0.0512)
Perceived chance of re-employability	0.106	0.128	0.140
	(0.107)	(0.107)	(0.108)
Perceived income insecurity	0.191**	0.206**	0.175*
	(0.0912)	(0.0908)	(0.0911)
Perceived performance of the national economy	0.0527	0.0452	0.0548
	(0.0811)	(0.0844)	(0.0816)
Opinions about the electoral and party systems			
Opinion about the current fragmentation level	-0.140	-0.253	-0.155
	(0.189)	(0.192)	(0.188)
PR or fragmentation	0.301*	0.336*	0.304*
	(0.168)	(0.172)	(0.167)
PR or FPTP	-0.297**	-0.268**	-0.281**
	(0.131)	(0.134)	(0.129)
Unitary govt. or coalition?	-0.123	-0.138	-0.135
	(0.134)	(0.134)	(0.132)
Constant	0.898	-0.389	-0.0508
	(0.859)	(0.909)	(0.896)
Observations	2,945	2,945	2,945

Standard errors in parentheses

Both income and home ownership are in positive relation with election participation in models 2 and 3. This relation is stronger and more significant in case of home ownership as a proxy for wealth. On the contrary, income is more loosely related to the participation. Relation between being on government benefits and voting is not significant but perception of income insecurity is a positive drive for voting. None of other employment related matters are in strong relation with electoral participation.

Among demographic factors, religion and ethnicity play a significant role in electoral participation in New Zealand. While being a member of the Maori minority may considerably decrease the likelihood to vote, being more religious is a driving force. The impact of attitudinal factors are rather mixed. Social attitudes that are usually associated with the Right, being in favour of less social spending and being suspicious about the divisive effect of PR increase the likelihood of voting. On the other hand, favouring plurality system over PR and opposing public ownership in economy both discourage voting which is somewhat at odd with the former set of attitudinal factors.

The overall conclusion from the above modelling is that under PR there the relation between economic wellbeing and electoral participation is less significant than other socio-cultural factors. The mild economic bias in the turnout that exists under PR is mostly attributable to the possession of wealth and sense of income insecurity than income.

Figure x contrasts the results of income bias analysis of non-participants with the rates turnout rate in New Zealand since 1990. Our calculations show a steady decrease in income bias between 1990 and 2002 and a continuous increase since 2005. The reversing direction of bias since 2005 begs further research but for purpose of this paper, two inferences may be drawn on the basis of these results. First, in 3 of the 6 elections after electoral reform (1999, 2002, 2005), the trend of change in bias defies the conventional view of negative relation between these two parameters. This means that if bias is the factor that affects the left partisanship of the government, it must be studied regardless of the rate of turnout. The second inference that despite the U shape trend of income bias, when a line is fitted to the bias curve, it shows a weak but negative relation between years from switch to PR and the level of income bias of the vote.

Graph x: The average income bias of non-voters and the rate of turnout in New Zealand general elections 1990-2011

y = -0.0008x + 2.5768
R² = 0.003

──◆── Income Bias of the Non-Participants
──■── Participation Rate
───── Linear (Income Bias of the Non-Participants)

**Source of Turnout Data: International Idea Voter Turnout Database,
http://www.idea.int/vt/ (Accessed 4/5/1015)**

When these results are juxtaposed with the Gini index for the level of household income inequality (graph x), it can be seen that the period of relative stability in inequality following the electoral reform corresponds with a drop in income bias of the vote below the pre-reform level. It is only since 2008 that bias entered the pre-reform territory and ushered in a centre-right government and slight rise in inequality level.

Graph x: income inequality in New Zealand measured by Gini index (1981-2014)
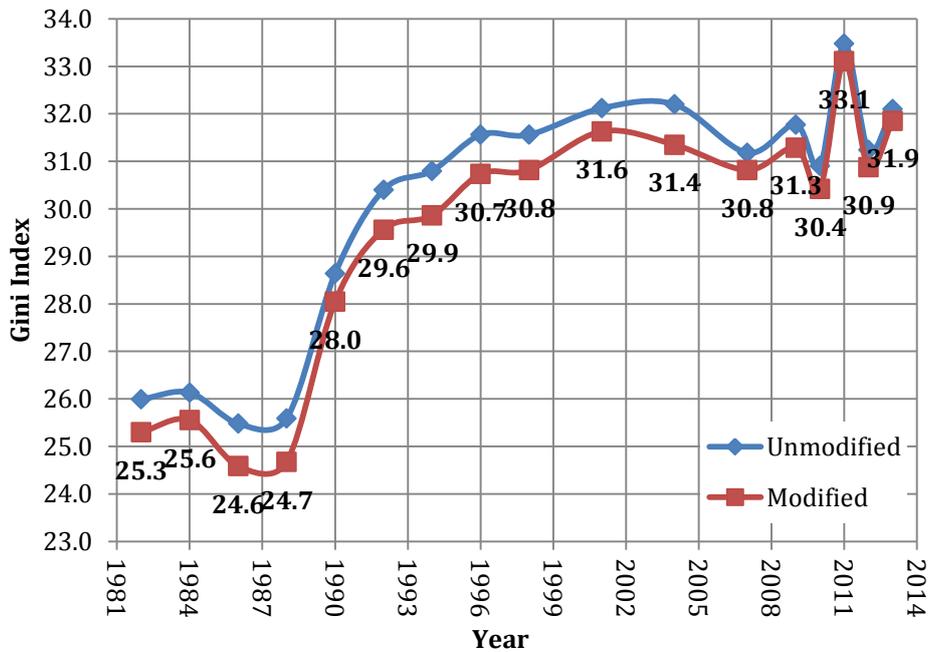
Source: author's calculation. Source of data: Bryan Perry (2014), "Household incomes in New Zealand; Trends in indicators of inequality and hardship 1982-2013" Ministry of Social Development, Wellington – appendix 9, table 9.3

We now take a closer look at the income composition of the voting age population who did not vote in the elections for which we have data. Figure x distinguishes between different patterns of electoral participation across different income quintiles.

Figure x: Comparing different patterns of income composition among non-voters for New Zealand general elections 1990-2011
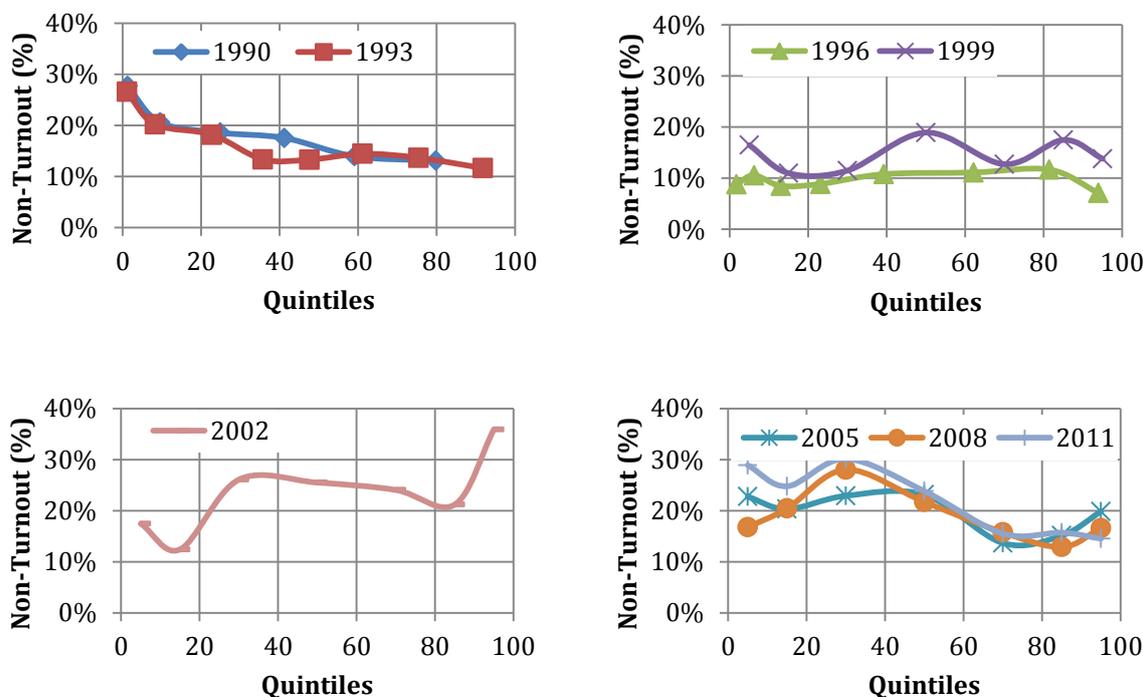
Data source: NZES survey data 1990-2011

Pattern of participation is clearly different between the pre-reform period (the top left diagram) and the post-reform period. However, no unique pattern explains all of the post-reform elections. Indeed data reveals a temporal aspect in the evolution of electoral participation patterns of various income groups. The first two post-reform elections witness a flattened distribution of electoral participation across income groups while in the 2002 election the balance of participation was shifted to the low income population. Since 2005 a new trend has been unfolded whereby despite in pro-rich overall bias, on the one hand people at the very high end of the income spectrum (decile 10) are less inclined to vote than their adjacent two deciles. On the other hand, people on deciles 1 and 2 are more likely to cast a vote compared to people at the 3rd decile. Overall, once a line is fitted to the data, the slope of decrease in turnout with increase in income is lower in the 2005, 2008 and 2011 elections than in 1990 and 1993 elections.

All three patterns of electoral participation after electoral reform clearly suggest a shift in the relative electoral importance from high to low income groups. These patterns unanimously support the proposition that electoral system change, created more incentives for voting in the lowest quintile and less incentives at the highest decile compared to the previous era. The important ramification of this demographic change for the electoral contest is that parties learn with time that there is more to gain from appealing to the lower tail of distribution than to lose from aligning the very rich. When the left most parties garner extra support among the lowest

deciles all other parties need to moderate their distributive stance in order to preserve the long term left-right balance of power or risk losing relative popularity.

6. Conclusion

The relation between proportional representation and lower inequality is conventionally known to be through change in the level of turnout that results in lower economic bias in the turnout and favour more redistributive parties. We hypothesized and tested an alternative model whereby the level of turnout has is not a critical factor so long as the economic bias of the turnout is not touched. It was shown that electoral reform in New Zealand succeeded in balancing the profile of incentives offered to the higher and lower ends of income distribution to engage in the national political process by voting in the elections. Electoral reform brought more low income people to the ballot box compared than before and dissuade more of the top income voters than before from doing the same. As a result, we showed that the party competition focused more than before on the matters of welfare and redistribution and in an attempt to reap the new opportunity they diversified their redistributive signals released into the public. While speculate that drop in the level of turnout is the result of the change in the meaning of constituency under the new MMP system that by compensating at the national level makes every individual votes less critical in determining the result of the election in electorates. This however needs to be further investigated but regardless of the trend in turnout and indeed to its contrary, the mechanism we proposed in this paper has been valid so far.

Further research is needed to explain the impact that shift to proportional representation could have had on the preferences of the voters that were previously active but stoped voting after the reform and how this relation is conditioned on income or social identity. It is equally important to survey the consequences of electoral reform for the value bias of the turnout to know which one is a better predictor of voting behaviour and how this relation may vary across countries and cultures.

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