Submission on the MMP voting system

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Summary

1 **Thresholds.** The 5% threshold distorts proportionality and denies legitimate voices parliamentary representation. I do not believe that any of the risks associated with minor parties outlined by the 1986 Royal Commission exist. The 5% party vote threshold should be abolished and not replaced.

2 However, the effective threshold (the minimum party vote needed to gain one seat) in the Sainte-Laguë method is just 0.42%, or 1/240th of the party vote. It is disproportional for a party with 1/240th of the party vote to get 1/120th of the seats in Parliament. Therefore, the Sainte-Laguë method should be modified so that the first divisor is 1.4 (instead of 1). This is the same modification made in Norway, Sweden and Nepal. It increases the effective threshold to about 0.58%. Subsequent divisors should remain the same (3, 5, 7, …)

3 The electorate seat threshold is redundant if the party vote threshold is abolished. But if, contrary to my recommendation, the party vote threshold is not abolished, the electorate seat threshold should be abolished anyway. Parties failing to meet the party vote threshold but winning electorates should be entitled to their electorate seats but no list seats. These electorate seats should not normally be overhang seats.

4 **Ratio of list seats to electorate seats.** To avoid a lack of list seats distorting proportionality, the method of calculating the number of electorate seats should be revised. I propose a method by which the number of electorate seats is semi-fixed. That is, the number of electorate seats is always around some number (say, 70), but there is some elasticity. This procedure is described in paragraph 2.2.7.

5 **Dual candidacy and party lists.** The questions of dual candidacy and open party lists are really the same issue. Both stem from the inability for electors to eject an unpopular MP even if they are ranked highly on their party list.

6 I accept the harms pointed out by the 1986 Royal Commission relating to banning dual candidacy, and therefore, I support its retention.

7 I do, however, sympathise with the frustration of not being able to eject an unpopular MP. I therefore support semi-open party lists. Parties should retain primary control, but electors (if in sufficient quantity) should be able to back a low-ranked list MP or refuse election to a high-ranked MP.

8 **Preferential voting.** I have real concerns with preferential voting overcomplicating the electoral system. Even if it is optional, citizens who feel a civil duty to vote will feel an obligation to rank at least several options. Ranking candidates is a much more onerous exercise than it sounds.

9 If, as I recommend, the party vote threshold is abolished, then there is no need for preferential voting for the party vote. However, if the threshold is retained, then I support allowing voters

to specify a second choice (only) in their party vote in case their first choice does not meet the threshold.

10 I do not believe there is much to gain from having preferential voting for the electorate vote. Furthermore, if (as I recommend) full preferential voting is not applied to the party vote, then I am concerned that preferential voting in the electorate vote would mislead electors to think the electorate vote is more important than the party vote (which is plainly incorrect).

11 **Overhang.** There is currently a discrepancy between the treatment of independents and parties who get too few party votes to earn a seat, when they win an electorate. The latter is an overhang seat; the former is not. This should be addressed. Any party or independent who wins one or more electorates should be guaranteed at least one seat as part of the Sainte-Laguë allocation, regardless of their actual party vote.

12 On the main question of overhang, I cannot think of any suitable alternatives to having overhang seats.

13 The only example of overhang since 1996 has been the Māori Party. However, this is more attributable to the Māori electorate seats (which are excluded from the review) than overhang. The Commission should not attempt to resolve any perceived unfairness in favour of the Māori Party by changing the overhang provision.

14 The Commission should not consider any alternatives that would depart from the principle of having one vote per MP in Parliament. This would represent a fundamental change to the role of MPs, away from being members of a deliberative national body and towards acting as mere funnels for their electoral base.

Foreword

I thank the Electoral Commission for providing this opportunity to submit to the review of MMP.

I am fascinated by voting systems and have given these matters a great deal of thought. My personal interest derives largely from the mathematical side of voting systems. In particular, the different methods of proportional seat allocation (Sainte-Laguë, d'Hondt, Imperiali, *etc*.) have intrigued me, though I don't comment on them in this submission. But it is the combination of mathematical understanding and value judgements that make me excited to submit to this review of MMP.

I support MMP. I think that in a society where political divisions are primarily ideological, it makes sense to have a voting system that allows those divisions to be accurately reflected. Like many MMP supporters, however, I think there is room for improvement.

In this submission, I recommend a number of changes. I believe the changes would improve the integrity of the MMP system. The issue I feel most strongly about is the thresholds, which I discuss in section 1. I also comment on the ratio of electorate seats to list seats, dual candidacy, party lists, preferential voting and overhang.

I wish to present my submission in person to the Commission. I expect to speak mainly to sections 1 (Thresholds) and 2 (Ratio of electorate seats to list seats). While I will be happy to answer questions on the remaining sections, I expect that those issues will probably be addressed in much detail by other submitters.

1 Thresholds

1.1 Summary of recommendations

1.1.1 **The 5% party vote threshold should be abolished and not replaced.**
All parties should receive their allocation of seats under a modified Sainte-Laguë method.

1.1.2 **The Sainte-Laguë method should be modified so that the first divisor is 1.4 (instead of 1).** The subsequent divisors should remain the same: 3, 5, 7, 9, *etc*.

1.1.3 **The one electorate seat threshold should be abolished.**
This is even if a party vote threshold is retained. If (contrary to recommendation 1.1.1) a party vote threshold is retained then electorate seats won by a party failing to meet the threshold should be awarded without list seats. These seats should not be overhang seats, except where they would have been overhang seats with an imaginary one electorate threshold. A full procedure is described in paragraph 1.4.9.

1.2 Abolishing the party vote threshold

1.2.1 The defining characteristic of MMP is that it is a proportional system. Proportionality is premised on the idea that the composition of parliament should reflect, as closely as practicable, the composition of society. My view is that, if New Zealand supports proportionality (as the referendum result would imply), we should uphold that principle for all parties. We must have good reason before we exclude any parties from proportional representation.

1.2.2 **Proliferation of minor parties.** I do not believe that we should "prevent a proliferation of minor parties", as the 1986 Royal Commission feared. If a party receives the support of one

in 120 electors, that is respectable enough that it should be afforded one in 120 seats. This representation is small, as it should be, but existent.

1.2.3 **Effective government.** I am not convinced of the 1986 Royal Commission's concern that having more minor parties would mean the "operation of effective government would be very likely to be frustrated". Ironically, it is hindsight that persuaded me otherwise: the 5% threshold has had less of an effect in recent elections. Table 1 shows a summary of minor parties (those affected by the 5% threshold) since 1996. The number of parties gaining seats but below the 5% threshold has increased from one or two between 1996 and 2002, to four in each of the last three elections. To at least some extent, a "proliferation" of minor parties is already happening. Yet, the government coalitions led by Rt Hon Helen Clark in her third term, and by Rt Hon John Key more recently, have been more stable than earlier coalitions. The increase in minor parties has not threatened effective government.

Table 1: Parties below the 5% threshold in elections 1996–2011

Year	Parties below the 5% threshold but gaining seats because they won an electorate			Parties below the 5% threshold not gaining seats, but who would have under a *modified*[1] Saint-Laguë method if there was no threshold		
	Party	Vote	Seats	Party	Vote	Seats
1996	United New Zealand Party	0.88%	1	Christian Coalition	4.33%	5
				Aotearoa Legalise Cannabis Party	1.66%	2
1999	New Zealand First Party	4.26%	5	Christian Heritage Party	2.38%	3
	United NZ	0.54%	1	Future New Zealand	1.12%	1
				Aotearoa Legalise Cannabis Party	1.10%	1
2002	Jim Anderton's Progressive	1.70%	2	Christian Heritage Party	1.35%	2
				Outdoor Recreation NZ	1.28%	2
				Alliance	1.27%	2
				Aotearoa Legalise Cannabis Party	0.64%	1
2005	Māori Party	2.12%	4	Destiny New Zealand	0.62%	1
	United Future New Zealand	3.67%	3			
	ACT New Zealand	1.51%	2			
	Jim Anderton's Progressive	1.16%	1			
2008	ACT New Zealand	3.65%	5	New Zealand First Party	4.07%	5
	Māori Party	2.39%	5			
	Jim Anderton's Progressive	0.91%	1			
	United Future	0.87%	1			
2011	Māori Party	1.43%	3	Conservative Party	2.65%	3
	Mana	1.08%	1			
	ACT New Zealand	1.07%	1			
	United Future	0.60%	1			

1.2.4 **Distribution of power between parties.** I do not believe that this grants such parties a disproportionate share of power. There have been many one-MP parties since 1996. They have not wielded much influence. Where they have influenced a major party, it is almost always on a policy to which the major party was already sympathetic. For example, United Future has had no real success with introducing income-splitting for tax purposes. Jim Anderton's Kiwibank was accepted by a party that already supported the idea of state-owned assets: Labour later cited it as one of its achievements while in office.

1.2.5 **Extremist parties.** Some may, as the 1986 Royal Commission did, raise fears about extremist parties like the Aotearoa Legalise Cannabis Party or Destiny New Zealand getting in to Parliament. Such fears are irrelevant: we do not design our voting system to exclude

[1] I propose a modified Sainte-Laguë method in section 1.3, where the first divisor is 1.4 instead of 1.

parties we dislike. Voters were generally accepting of the representation achieved by United Future, Jim Anderton's Progressive and ACT New Zealand, even if they opposed them. The country should be similarly prepared to hear the views of parties with that small but solid base of support, regardless of their content. The ALCP, Destiny and other parties listed in the right-hand columns of Table 1 were all steadfast and serious in their beliefs. It is a democratic disservice to their voters to deny them voices in Parliament.

1.2.6 **Joke parties.** Another fear may be that "joke parties" like the Bill and Ben Party could gain a seat. They achieved 0.56% of the vote in the 2008 election, which would have earned them a seat (though the modification I recommend in section 1.3 would change this[2]). I do not believe this fear would hold in practice. Those voters felt comfortable casting a joke vote because they knew the 5% threshold would prevent it from counting. If they knew their vote would actually count, they would have been far more reluctant to give it to the Bill and Ben Party.

1.2.7 Therefore, in the absence of good reason not to keep consistent the principle of proportionality, I recommend that the 5% threshold be abolished.

1.2.8 If the Electoral Commission decides not to abolish the threshold, then my second preference is for the threshold to be lowered. It is obviously consistent with my position that the lower the threshold, the better.

1.3 Modifying the Sainte-Laguë method

1.3.1 In this section, I recommend that the Sainte-Laguë method be modified to change the first divisor from 1 to 1.4. The subsequent divisors would remain the same, *i.e.*, the odd numbers 3, 5, 7, 9, … The modification has the effect of making it slightly harder for parties to gain their first seat.

1.3.2 This is the same modification that is used in Norway, Sweden and Nepal. It is a very different modification to that considered by the 1986 Royal Commission.

1.3.3 It will seem ironic at first that, having advocated for abolishing the 5% threshold in section 1.2, I now advocate a modification that increases the "effective threshold" to very small parties. It is not that simple. This modification does not strike at the heart of proportionality in the same way that the 5% threshold does. It does not seek to inhibit small parties. Rather, it seeks to *uphold* the principle of proportionality. This section will lay out a principled basis for my proposed modification.

1.3.4 **Effective threshold.** The effective threshold is the number of votes a party must get before it is awarded its first seat in the House, when there is no explicit threshold. The effective threshold for the unmodified Sainte-Laguë method is

$$t = \frac{V}{2N - k + 1}$$

Where t is the effective threshold in votes, V is the total number of votes in the election, and k is the number of other parties who have seats in the House. A proof of this formula is offered in Appendix A.

[2] The modification I propose increases the "effective threshold" to 0.58%, which is more than 0.56%.

1.3.5 The effective threshold for the first seat is the most important barrier for a party: it is the difference between a voice and no voice in Parliament. It therefore deserves special attention. The difference between one and two seats is not nearly as significant.

1.3.6 The formula in paragraph 1.3.4 can be approximated to $t \approx \frac{V}{2N}$.[3] Effectively, this means that in a 120-seat house, a party needs to get only *half* of 1/120th of the party vote, *i.e.* 1/240th of the party vote, in order to get one in 120 seats.

1.3.7 It seems unfair and contrary to proportionality to me that a party can receive 1/120th of the seats in Parliament having achieved just half that much in its support among New Zealand electors.

1.3.8 On the other hand, a party falling only just short of 1/120th of the party vote can, in my opinion, reasonably be entitled to one out of 120 seats.

1.3.9 It is possible to change this effective threshold for one seat, without affecting the votes required for two seats, three seats, and so on, by changing just the first divisor. Say we change the first divisor to some number m. The new effective threshold will be

$$t = \frac{V}{\frac{2N-k}{m}+1}$$

A proof is offered in Appendix A. We can approximate this as $t \approx \frac{mV}{2N}$.

1.3.10 This means that the effective threshold is $\frac{1}{N}$ of the party vote, multiplied by a factor $\frac{m}{2}$. For example, if $m = 1.2$, the effective threshold for 120 seats is about 60% of 1/120th of the party vote, which is 0.5%. By using the approximation in reverse, we can choose an approximate effective threshold and calculate what the first divisor m should be.

1.3.11 It is easiest conceptually to think about this approximate effective threshold relative to 1/120, the proportion of seats in Parliament that the party would have if they won one seat. For example, "90% of 1/120" is easier to understand in terms of proportionality than "0.075%".

1.3.12 With this formula, we then just need to ask ourselves the question: How close to 1/120th of the party vote should a party need to be in order for it to be **consistent with proportionality** for them to have one seat? It is emphasised that the criterion is proportionality, not preventing a proliferation of minor parties.

1.3.13 I believe that it is fair for a party achieving at least 70% to 80% of 1/120th of the party vote to be entitled to one seat in a 120-seat House. The divisor used by Norway, Sweden and Nepal of 1.4 equates to 70% of 1/120th of the party vote, which is about 0.58%. I would not be averse to a first divisor of 1.5 or 1.6. I choose 1.4 primarily because it has been used elsewhere.

1.3.14 **Why not just set an explicit threshold of 0.6%?** The above analysis of the effective threshold ultimately serves to demand a higher party vote before awarding a party its first seat. The reader may suggest that it would be easier just to set this threshold explicitly to an equivalent value, around 0.6%, and apply it similarly to how the 5% threshold is currently applied. At first glance, I concede that this is easier to understand. There are, however, important differences in the nature of these two techniques.

[3] The assumption made is that twice the number of seats is much larger than the number of parties, or $2N \gg k$. This is generally true: $2N = 240 \gg k \approx 8$. Also, we take advantage of the fact that $2N \gg 1$.

1.3.15 The effective threshold is not a constant percentage. It is a function of both the number of seats that are allocated proportionally and the number of other parties that gain seats. The effective threshold adjusts to these quantities in order to maintain proportionality. An explicit threshold does not have this automatic flexibility.

1.3.16 The number of seats that are allocated proportionally is, in theory, not always 120. Currently, section 191(8) of the Electoral Act 1993 requires the Commission to deduct from 120 any seats won by independents and parties not contesting the party vote. If the number of proportionally-allocated seats falls, the threshold should rise accordingly. An effective threshold allows this to happen; an explicit threshold does not.

1.3.17 The number of other parties that gain seats is obviously variable. This quantity arises in the formula for effective threshold because the unmodified Sainte-Laguë method runs through the odd numbers as divisors in order to uphold the principle that a shortfall of a fraction of a seat (say, 0.3 of a seat) means more to a smaller party than a larger party. In the modified Sainte-Laguë method, we make an exception for the first seat so that it is 0.3 of a seat rather than 0.5 of a seat that is the basis for comparison. An explicit threshold would not self-adjust to maintain this principle.

1.3.18 Most significantly, the formulae for effective thresholds given in paragraphs 1.3.4 and 1.3.9 assumes that all parties have an exact number of votes that earns them a whole number of seats with no votes "left over". That will almost certainly never be the case. An effective threshold has the ability to adjust automatically to ignore "unused votes". The most notable are votes given to a party that did not reach the effective threshold. This can be significant: in the 2008 election, 2.5% of votes fell into this category. But there are also some votes for successful parties that, if missing, would not have resulted in the loss of a seat. An explicit threshold does not readjust itself to account for the fact that the "used" number of votes is less than the total votes cast.[4]

1.3.19 It is acknowledged that all those effects are quite small in practice. But the principle of proportionality is better upheld using an effective threshold than a roughly-equivalent explicit threshold.

1.3.20 Therefore, in order to preserve the principle of proportionality with one-MP parties, I recommend that the Sainte-Laguë method be modified so that the first divisor is 1.4.

1.3.21 It is noted that this modification is only relevant if the 5% threshold is abolished, as I advocate in section 1.2.

1.4 Abolishing electorate seat threshold

1.4.1 My recommendations in sections 1.2 and 1.3 would render the question of an electorate seat threshold irrelevant. An electorate threshold has no effect if every party earning a seat in the Sainte-Laguë method is awarded that seat, without needing to reach a 5% threshold.

1.4.2 Nonetheless, I wish to make it clear that if the 5% threshold is not abolished, I believe that the electorate seat threshold should be abolished. That is, if (contrary to my first recommendation) a 5% or lower threshold is retained, then a party falling short of the threshold should not be entitled to any list seats, **even if** they win an electorate seat.

[4] The fact that some votes are not directly used does not, in itself, mean that the voting system is flawed. It is inevitable, given a finite number of seats, that there are at least some votes cast whose absence would not have changed the outcome. In a proportional system, those votes are fewer in number, but the more important characteristic is the holistic effect of Parliament reflecting the electorate.

1.4.3 The principled basis for this is simple: no electorate in the country should be able to single-handedly affect the shape of Parliament beyond their own electorate MP. For example, the voters of Ōhariu, Epsom, Tauranga and Wigram should not be able to determine whether up to five list MPs enter Parliament. Put more bluntly, no electorate in the country should be more powerful than any other.

1.4.4 Naturally, this would raise the question: if a party fails to meet the party vote threshold but wins an electorate seat, is the electorate seat treated as an overhang seat or as what would be otherwise their proportional entitlement? The former is asking for an excessive number of overhang seats, especially since in each of the last three elections, four parties missing the 5% threshold won an electorate (see Table 1). The latter approach seems more intuitive. That is, the electorate seat should be treated in the same way as independents are in the status quo (as per section 191(8) of the Electoral Act 1993): the seat should be deducted from the 120 proportionally-allocated seats for the purposes of the Sainte-Laguë method.

1.4.5 For consistency, this would apply even if the party would not have made the "effective threshold" described in paragraph 1.3.4.

1.4.6 We must also consider situations where multiple electorates are won by a party failing to meet the threshold. In this case, a similar principle should apply. If a party wins fewer electorate seats than its proportional entitlement, then it should be allowed its electorate seats as if it were its proportional entitlement. In other words, its electorate seats should be removed from the 120 Sainte-Laguë allocated seats and it receives no list seats.

1.4.7 If a party wins more electorate seats than its proportional entitlement, then it should receive its proportional entitlement as if it had met the threshold. Electorate seats over that entitlement should be treated as overhang seats, similarly to the status quo.

1.4.8 For reasons that I explain fully in section 5.2 (Overhang: Independents and non-listed parties), any party that wins at least one electorate seat should be guaranteed at least one seat as its "proportional entitlement", even if it did not meet the effective threshold or contest the party vote. Briefly, the rationale is consistency between independents and parties contesting the party vote.

1.4.9 Therefore, a summary of paragraphs 1.4.4 through 1.4.8, **if the 5% or other party vote threshold is retained**, is as follows:

(a) A party not meeting the party vote threshold but winning electorates is entitled to all of its electorate seats, but no other seats. Some of these seats may be overhang seats.

(b) The Commission runs the Sainte-Laguë allocation with the party **included** and determines the raw number of seats that would have been allocated to the party.

(c) If the number of seats in (b) is zero, then one seat (*i.e.* the 120^{th} quotient if there is only one such party) is deducted from the Sainte-Laguë allocation. Instead, one non-overhang seat is awarded to the party. Any further electorate seats are overhang.

(d) If the number of seats in (b) is not zero, but less than or equal to the number of electorates won by the party, then it is awarded all those seats under the Sainte-Laguë method as electorate seats. Any excess electorate seats are awarded as overhang seats.

(e) If the number of seats in (b) is more than the number of electorates won, then it is awarded all of its electorate seats. The number of electorate seats won is deducted from the Sainte-Laguë allocation. (For example, if one party won three electorates then the

118th, 119th and 120th quotients are not used.) It is then not eligible for any further seats under the Sainte-Laguë allocation. There are no overhang seats resulting from the party.

(f) The Sainte-Laguë allocation is run again without the parties excluded under provision (e), and without the seats excluded under provisions (c) and (e).

1.4.10 A consequence of this procedure, in particular the provision in 1.4.9(c), is that for overhang to occur, it is necessary (but not sufficient) for one party failing to meet the party vote threshold to win at least two electorate seats.

1.4.11 I wish to take the opportunity to point out that this whole dilemma would not exist if the 5% threshold is abolished outright. In that case, the overhang issue would still exist. But the question of how to treat parties winning an electorate but failing to meet an explicit party vote threshold would not. Parties would simply be awarded their proportional entitlement, plus any overhang seats if they arise.

1.4.12 **Example, if the 5% threshold is retained.** The following example shows how abolishing the electorate seat threshold would work if the 5% party vote threshold is retained (contrary to my first recommendation).

1.4.13 Consider the results of the 2005 election, shown in columns A through D of Table 2. (Parties not meeting the effective threshold are not shown.) The raw Sainte-Laguë allocation referred to in provision 1.4.9(b) is in column E. This is the same as the result under the status quo.

Table 2: Example of how abolishing the electorate seat threshold would work if the 5% threshold is retained

A **Party**	B **Party votes**	C **Electorate seats**	D **% party vote**	E **Raw SL allocation**	F **Allocation outside SL**	G **St-Laguë allocation**	H **Final seat allocation**
Labour	935,319	31	41.10%	50	–	51	51
National	889,813	31	39.10%	48	–	49	49
NZ First	130,115	0	5.72%	7	–	7	7
Greens	120,521	0	5.30%	6	–	7	7
Māori Party	48,263	4	2.12%	3	–	3	4
United Future	60,860	1	2.67%	3	1	–	1
ACT	34,469	1	1.51%	2	1	–	1
Progressive	26,441	1	1.16%	1	–	1	1
Total		**69**	**99.31%**	**120**	**2**	**118**	**121**

1.4.14 There are four parties failing to meet the 5% party vote threshold but winning an electorate: Māori Party, United Future, ACT and Progressive. All of those parties would have gained at least one seat in the raw allocation, so provision 1.4.9(c) does not apply. The Māori Party gained fewer seats proportionally than electorate seats, so provision 1.4.9(d) applies to it and its Sainte-Laguë allocation, in column G, is three. Progressive gained the same number of seats in the raw allocation as electorate seats, so the same provision applies and its Sainte-Laguë allocation is one.

1.4.15 United Future and ACT both received enough of the party vote to get more than one seat in the raw allocation. But because they did not meet the 5% threshold, they are only entitled to their electorate seat under provision 1.4.9(e). This is allocated outside the Sainte-Laguë method (column F). The parties are excluded from the second Sainte-Laguë allocation in column G. Their seats are also deducted from the allocation, so only 118 quotients are used.

1.4.16 The second Sainte-Laguë allocation, run under provision 1.4.9(f), is shown in column G. Labour, National and the Greens each gain one seat as a result of the seats forfeited by United

Future and ACT. This then becomes the final allocation in column H, except that the Māori Party is still entitled to its overhang seat.

1.4.17 It is emphasised that the above example is *if* the party vote threshold is retained. **My first recommendation is that the party vote threshold be abolished.**

1.5 Example

1.5.1 The following example demonstrates how seat allocation would work with the thresholds I recommend, using the election results of 2011.

1.5.2 Table 3 shows the quotients table for the modified Sainte-Laguë method. For brevity, only the first three divisors are shown. It differs in two respects from the quotients table currently used.

1.5.3 Firstly, it includes all parties—not just those meeting the party vote threshold, since that would be abolished. This would have allowed the Conservatives, who achieved a respectable 2.65% of the party vote, to enter Parliament. With three quotients in the top 120, they are allocated three seats.

1.5.4 Secondly, the first column of quotients (column C) uses the divisor 1.4, rather than 1. The 120th quotient (not shown on the table) is 9,205.6 (National's 58th quotient). The modified divisor effectively denies the ALCP a seat. They achieved just 0.52% of the party vote, or 63% of 1/120th of the total party vote, which is below the effective threshold. But if the non-modified Sainte-Laguë method had been used, their first quotient of 11,738 would have been enough to gain them a seat (since it is greater than 9,205.6).

1.5.5 The result that would have come about using my recommended thresholds is given in Table 4. Column D shows the result under the status quo (*i.e.* what actually happened) for comparison. It should be noted that the Māori Party's overhang seat was unaffected by the abolition of the thresholds.

1.5.6 In Appendix B, I list what the results would have been if my recommendations had been applied to all elections since 1996.

Table 3: Quotients table using the modified Sainte-Laguë method (applied to the 2011 election)

A **Party**	B **Party votes**	C **Divisor 1.4**	D **Seat**	E **Divisor 3**	F **Seat**	G **Divisor 5**	H **Seat**
National	1,058,638	756,170.0	1	352,879.3	3	211,727.6	4
Labour	614,936	439,240.0	2	204,978.7	5	122,987.2	8
Greens	247,370	176,692.9	6	82,456.7	13	49,474.0	21
NZ First	147,544	105,388.6	10	49,181.3	22	29,508.8	36
Conservatives	59,236	42,311.4	26	19,745.3	56	11,847.2	93
Māori Party	31,982	22,844.3	46	10,660.7	105	6,396.4	
Mana	24,168	17,262.9	64	8,056.0		4,833.6	
ACT	23,889	17,063.6	65	7,963.0		4,777.8	
United Future	13,443	9,602.1	116	4,481.0		2,688.6	
ALCP	11,738	8,384.3		3,912.7		2,347.6	
Social Credit	1,714	1,224.3		571.3		342.8	
Libertarianz	1,595	1,139.3		531.7		319.0	
Alliance	1,209	863.6		403.0		241.8	

Table 4: Example using my recommended thresholds (applied to the 2011 election)

A **Party**	B **Electorate seats**	C **% party vote**	D ***Result: status quo***	E **Modified St-Laguë allocation**	F **Result: proposed changes**
National	41	47.31%	*59*	58	**58**
Labour	23	27.48%	*34*	33	**33**
Greens	0	11.06%	*14*	13	**13**
NZ First	0	6.59%	*8*	8	**8**
Conservatives	0	2.65%	*0*	3	**3**
Māori Party	3	1.43%	*2*	2	**3**
Mana	1	1.08%	*1*	1	**1**
ACT	1	1.07%	*1*	1	**1**
United Future	1	0.60%	*1*	1	**1**
ALCP	0	0.52%	*0*	0	**0**
Social Credit	0	0.08%	*0*	0	**0**
Libertarianz	0	0.07%	*0*	0	**0**
Alliance	0	0.05%	*0*	0	**0**
Total	**70**	**100.00%**	***121***	**120**	**121**

2 Ratio of electorate seats to list seats

2.1 Summary of recommendations

2.1.1 The overriding principle is that there must be enough list seats available to allow MMP to **maintain proportionality**.

2.1.2 Fixing the number of electoral districts is not an optimal solution.

2.1.3 **I propose a procedure that would semi-fix the number of electoral districts** while avoiding an electoral district crossing between the North and South Islands.
This procedure is laid out in paragraph 2.2.7.

2.2 Explanation

2.2.1 With the North Island population growing faster than the South Island population, the current system of determining electorate boundaries will probably mean that the number of electorate seats will continue to grow. It is undesirable for this to happen indefinitely: it is important for enough list MPs to be available for the MMP system to maintain proportionality effectively.

2.2.2 I do not express a view on the exact number of electorates at which the number of list seats is too few for MMP to function effectively. I trust that other submitters will have undertaken this analysis. I do, however, propose a replacement mechanism for the procedure currently specified in section 35(3) of the Electoral Act 1993.

2.2.3 **Fixed number of electoral districts.** An obvious solution is to fix the number of electorates, but this will probably necessitate an electoral district crossing between the North and South Islands. While one might argue that there is no theoretical reason an electoral district shouldn't be allowed to do so, I sympathise easily with a desire to avoid that situation. Wellington and Marlborough are probably too distinct as communities for an electorate to cover part of both. I therefore do not support this solution.

2.2.4 **Fixed number with no cross-island electoral districts.** The dilemma described in paragraph 2.2.3 could be resolved by fixing the number of electoral districts *and* prohibiting any

electoral districts from crossing the two main islands. However, this would also not be ideal. The double constraint can result in very different quotas for the North and South Islands. For example, if there are 15 South Island electoral districts (one less than currently), then the difference in quotas between the main islands due to rounding can be as much as 4 per cent.

2.2.5 While I acknowledge that existing rules allow for deviations of up to 5 per cent, it is not fair for *all* districts in one main island to be on average lower than the other by so much. By relaxing the first constraint slightly, we can reduce the difference in quotas between the two islands. Indeed, the number of electoral districts need not be fixed; it just needs to be prevented from indefinitely increasing. Some elasticity is permissible.

2.2.6 **Semi-fixed number with no cross-island electoral districts.** The mechanism I suggest is similar to the status quo, except that the number of electoral districts in the South Island is not fixed at 16. Rather, the Electoral Commission would be instructed to find the number of South Island electoral districts such that the total number of electorate seats is closest to some "ideal" number, for example, 70. This may involve several iterations of calculating electorate population quota, but would not involve drawing any boundaries before the number of electorates is finalised.

2.2.7 The procedure I propose for dividing New Zealand into electoral districts would work as follows:

(a) The General electoral population is divided by 70 (or some other "ideal number"). This gives a rough quota.

(b) The General electoral population of the South Island is divided by the quotient (rough quota) obtained in (a).

(c) The quotient obtained in (b) is rounded up to the next whole number; this number is the first provisional number of electoral districts for the South Island.

(d) The General electoral population of the South Island is divided by the first provisional number of electoral districts for the South Island obtained in (c), and the quotient so obtained is the first provisional quota for the South Island.

(e) The General electoral population of the North Island is divided by the first provisional quota for the South Island obtained in (d), and the quotient is rounded to the nearest whole number. The result is the first provisional number of electoral districts for the North Island.

(f) The first provisional numbers of electoral districts for the North Island and for the South Island are added together, and the sum is the first provisional number of electoral districts in New Zealand.

(g) The quotient obtained in (b) is rounded down to the next whole number; this number is the second provisional number of electorate districts for the South Island.

(h) The steps in (d) through (f) are repeated using the second provisional values, to obtain the second provisional quota for the South Island, second provisional number of electoral districts for the North Island and the second provisional number of electoral districts in New Zealand.

(i) If the second provisional number of electoral districts in New Zealand is closer to 70 than the first provisional number of electoral districts in New Zealand, then the second

provisional numbers and quotas are used. Otherwise (including if they are equally distant from 70), the first provisional numbers and quotas are used.

(j) The quota for the North Island is ascertained by dividing the General electoral population of the North Island by the number of General electoral districts for the North Island, whichever of the two provisional numbers were selected in (i).

2.2.8 To avoid doubt, the provisions of section 35(3)(e) through 35(3)(g) of the Electoral Act would still apply. (These provisions relate to how the districts are drawn geographically.)

2.2.9 This procedure would prevent population shifts from boundlessly increasing the number of electorate seats, while also avoiding having electoral districts situated partially in the North Island and partially in the South Island. As explained in the following paragraphs, it would also significantly reduce the inter-island quota disparity referred to in paragraphs 2.2.4 and 2.2.5.

2.2.10 **Comparison between semi-fixed number of districts and fixed number.** The chart in Figure 1 shows the inter-island quota disparity as a function of the proportion of New Zealanders living in the South Island. It assumes that the "ideal number" of electorates is 70.

2.2.11 The inter-island quota disparity is the percentage difference between the North Island and South Island quotas, defined as the greater them divided by the lesser of them, less one: $\frac{\max(q_{NI},q_{SI})}{\min(q_{NI},q_{SI})} - 1$ where q_{NI} is the North Island quota and q_{SI} is the South Island quota. Lower disparities are preferable to higher ones.

2.2.12 The proportion of New Zealanders living in the South Island is conceptually equal to $\frac{p_{SI}}{p_{SI}+p_{NI}}$, where p_{SI} is the population of the South Island and p_{NI} is the population of the North Island. The range for this variable shown on the chart in Figure 1 correlates roughly to having between 14 and 17 South Island seats (out of 70).

2.2.13 The inter-island quota disparity varies in both cases, but it is in general far lower for the semi-fixed method than for the fixed method. For 15 South Island electoral districts, it would never be more than 0.9% for the semi-fixed method, compared to up to 4.26% for the fixed procedure. The added flexibility in the semi-fixed method helps significantly with inter-island quota disparity.

2.2.14 **Equality between electorate and list MPs.** The 1986 Royal Commission expressed a view that it was desirable for numbers of electorate and list MPs to be roughly equal. I do not regard this as necessary. I do not believe that having unequal numbers leads to the status of constituency MPs being seen as different to that of list MPs. Even if it did, I do not even believe that it is necessary for their statuses to be seen as equal. I have limited sympathy for the desire for major parties to have list MPs in order to balance representation. Nonetheless, the core issue is that there must be enough list MPs for proportionality to be effected by the MMP system.

2.2.15 **If more than 70 electorates would not affect proportionality.** If the number of electorate seats at which MMP would struggle to maintain proportionality is much larger than 70, then I would sympathise with the view that the current method of drawing electoral districts is satisfactory. However, I still believe that it is important to place some upper limit on the number of electorate seats to protect the system's proportionality in case of unexpected shifts in population.

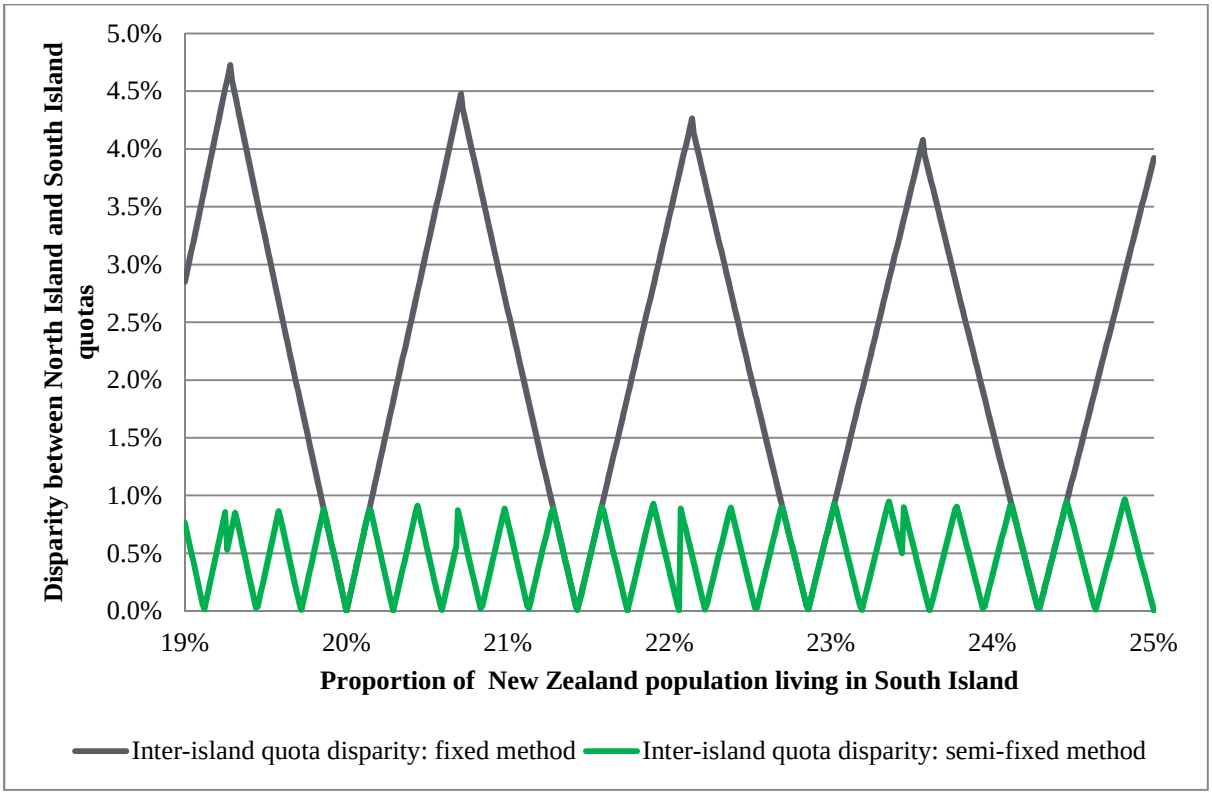

Figure 1: Comparison between fixed method and semi-fixed method in terms of disparity between the electoral quotas of the two main islands

3 Dual candidacy, and open and closed party lists

3.1 Summary of recommendations

3.1.1 **The Commission should note that dual candidacy and the question of open party lists stem from the same issue**, namely, how electors can ensure that poor MPs are removed.

3.1.2 **I support allowing dual candidacy.** Candidates should continue to be allowed to stand both on their party list and for an electorate.

3.1.3 **I somewhat support semi-open party lists.**

3.2 Explanation

3.2.1 There has been some concern about MPs, having lost their electorate seat, being able to return to Parliament on the party list. I do not believe that this is problematic. That an incumbent MP has become unpopular in his or her electorate does not, in itself, imply a national desire for him or her to be out of office as an MP.

3.2.2 I agree with the 1986 Royal Commission's concerns about party disunity, allowing parties to protected some valuable MPs in marginal seats and rewarding superior candidates in unwinnable seats, and the paradox of a smaller party losing certain members while gaining seats overall.

3.2.3 A strong reservation I have about dual candidacy is whether it would in fact allow electors to remove ineffective MPs. It is more likely that such MPs, knowing their position, would simply choose the party list rather than stand in an electorate.

3.2.4 I do, however, sympathise with a more general frustration that it is difficult to remove an unpopular but highly-ranked MP from Parliament. Fundamentally, the issues of dual candidacy and open and closed party lists both stem from this sentiment. Dual candidacy, in theory (but, as the 1986 Royal Commission observed and as I allude to in paragraph 3.2.3, not in practice), prevents an unpopular electorate candidate from having a "safe" route back into Parliament. Open party lists would allow electors to reward a party but simultaneously punish an unpopular candidate. The two objectives are almost the same. I therefore treat them in the same section. I encourage the Electoral Commission to consider and take into account the interaction between these two questions.

3.2.5 In cases where there is a national discontent with a particularly high-ranked candidate, or a national desire for a low-ranked candidate to enter Parliament before his or her more senior colleagues, I would support a mechanism for voters to be able to express that preference.

3.2.6 In this submission I offer some suggestions for semi-open list mechanisms, but there is no single mechanism that I strongly support more than any other.

3.2.7 I do not support fully open lists. For similar reasons given by the 1986 Royal Commission, I believe that parties should retain the primary control over their lists. The semi-open mechanism would exist to allow electors express a reasonably clear preference for or against a particular candidate.

3.2.8 Electors should be able to influence the list only of the party for which they vote.

3.2.9 One possible mechanism could be to allow voters to express a limited number (say, three) of "positive" and "negative" preferences for candidates on the party list. If a candidate receives a difference between positive and negative preferences greater than some quota, they are promoted or demoted one position on the list. If the difference is more than twice the quota, they are promoted or demoted two positions, and so on. I have not fully considered whether this would work in practice.

3.2.10 Another possible mechanism could be to allow voters to express a single positive and a single negative preference. If a candidate receives more than some quota (*e.g.* 5% of the party votes casts in favour of their party) of positive preferences, they are promoted to the top of their party list. If a candidate receives more than that quota of negative preferences, they are demoted to the bottom of their party list. If more than one candidate is promoted or demoted, they are ranked in order of the number of preference votes they received. This system is similar to that used in Sweden.

3.2.11 I acknowledge that it is questionable whether a critical mass of electors would choose to exercise an open list option if offered, similarly to how very few electors in the Australian Senate elections vote "below the line" (*i.e.* ranking candidates rather than conforming to a party ticket).

3.2.12 I also acknowledge that having a semi-open or open party list could complicate the system, and that complicating the system can have a negative impact on voter turnout. If a semi-open or open party list is implemented, care must be taken to minimise the perceived complication.

3.2.13 In light of the caveats in paragraphs 3.2.11 and 3.2.12, my general support for semi-open party lists is weak relative to other points I make in this submission.

4 Preferential voting

4.1 Summary of recommendations

4.1.1 If the 5% threshold is abolished (as I advocate in section 1.2), then I oppose preferential voting for the party vote.

4.1.2 If the 5% threshold (or a similar threshold) is retained, then I support allowing voters to express (only) a second choice for their party vote.

4.1.3 I oppose preferential voting for the electorate vote.

4.2 Explanation

4.2.1 It is easy to see why many people support allowing preferential voting. Preferential voting harnesses maximum information from the electorate. It also reduces vote wastage, as voters whose votes aren't used can have their votes transferred to another party of candidate. Consequently, there is less incentive against voting for small parties, in favour of larger parties who are guaranteed to make the threshold. Similarly, there is less incentive against voting for low-polling candidates, in favour of higher-polling candidates with a greater chance of winning.

4.2.2 At the same time, however, it must be recognised that allowing preferential voting would complicate the system and make it harder to understand for voters. Even if the public does have a general understanding, voting is a much more onerous duty when it involves ranking a number of candidates as opposed to choosing just one. Even if expressing a second and further choice is optional, I suspect that many voters will still see it as a civil obligation and come to see voting as a chore. Its being optional does not remove from its added complexity. If we are to complicate the voting system, we must have good reason for doing so.

4.2.3 Furthermore, despite the excellent educational campaigns run by the Electoral Commission, and despite the fact that many other systems (*e.g.* STV) are much more complicated, it remains that MMP is not a straightforward system. A fair amount of explanation is necessary for electors to understand it properly. We do not want to make this educational task any more difficult.

4.2.4 While I sympathise with the sentiments in paragraph 4.2.1, I do not believe that in the MMP context they are sufficient reason to complicate the voting system.

4.2.5 **If the 5% threshold is abolished.** Abolishing the 5% threshold, as I advocate in section 1.2, would minimise vote wastage anyway. Since tactical voting stems from the risk of vote wastage, this would essentially eliminate any need for preferential voting in the first place.

4.2.6 Some may argue that preferential voting is still useful because of the effective threshold that I describe in paragraph 1.3.4. This reasoning does not stand up to scrutiny. Fundamentally, the votes that are "wasted" on unsuccessful parties (gaining no seats) are no different to votes that are "wasted" on successful parties (gaining at least one seat). The latter arise because of the integer number of seats: every party will have some votes without which they would have won the same number of seats. With unsuccessful parties, that integer just happens to be zero. The wasted votes on an unsuccessful party collectively would have been just as likely to have made no difference with a successful party. There is no reason why they should be treated any differently.

4.2.7 It is not possible to extend the principle of wasted vote transfer to all parties (successful and unsuccessful). That would be incompatible with the Sainte-Laguë method. Therefore, it makes the most sense not to transfer "wasted" votes, but to acknowledge them as a by-product of the Sainte-Laguë method.

4.2.8 **If the 5% threshold is not abolished.** If some party vote threshold (5% or otherwise) is retained, then the stakes for parties near the 5% threshold are reasonably significant. Tactical voting then becomes likely. Supporters of parties that are polling near the threshold will watch polls closely; if they believe the party will poll on election day lower than the threshold they will vote for a different party. This creates a catch-22 for that party. The party needs votes to convince its own voters that their votes will not be wasted.

4.2.9 That phenomenon is sufficient reason to complicate the system. It is not fair on parties close to the threshold to have to face that catch-22. It is also not fair on voters to have to make the decision based on tactic rather than genuine preference.

4.2.10 Therefore, if a party vote threshold is retained, then I support allowing electors to specify an optional second choice. If their party of first choice fails to meet the threshold, their party vote counts as a vote for their second choice instead.

4.2.11 The reason I would support allowing a second preference, but no more, is to avoid complicating the system as I discuss in paragraph 4.2.2. I suspect that almost all voters would have a clear "safe" choice that they could list as their second preference and avoid their vote being wasted twice.

4.2.12 **Electorate vote.** There are some proposals to run the electorate contests using the preferential vote system. While such proposals are well-intended, I do not believe there is a need for them.

4.2.13 It is always nice for a voting system to more truly reflect the preference of the electorate. But I am not convinced that this nice-to-have warrants the additional complexity. In MMP, we have electorate MPs to ensure geographic representation and so that each elector has a first "point of contact" to the legislature. The choice of electorate MP does not (in most cases) affect the composition of Parliament. The geographic representation and point of contact remain even when the winning candidate wins by plurality but not majority.

4.2.14 In short, the consequence of a candidate winning by plurality, when they may not have won by majority, is not enough to warrant the issues I describe in paragraph 4.2.2.

4.2.15 In particular, I am concerned that the asymmetry between the party vote and the electorate vote (assuming the party vote remains one or two preferences only) would make it considerably harder to educate the public about the voting system. It is important for electors to understand that it is the party vote that is the most important, not the electorate vote. If the electorate vote is the more onerous task, then that may lead many to believe (incorrectly) that it is also the more important.

4.2.16 A system whereby the party and electorate vote were both fully preferential would make voting more onerous and tedious for the average elector. Even if it is optional, most voters will feel obliged to at least think about ranking a few preferences. I would be concerned about voter turnout if such a system were used.

5 Overhang

5.1 Summary of recommendations

5.1.1 **The discrepancy in treatment between independents and listed parties should be addressed.** One solution is to guarantee all parties with at least one electorate victory at least one seat, deducting that seat from the Sainte-Laguë allocated seats if necessary.

5.1.2 **While overhang can undermine proportionality, on balance, I do not believe there is a viable alternative.**

5.1.3 The Commission should not attempt to resolve any perceived unfairness arising from the Māori Party's overhang seats. They are more attributable to the Māori electorate seats (excluded from the review) than overhang.

5.1.4 **The Commission should reject proposals where MPs do not have equal voting weight in Parliament.**

5.2 Independents and non-listed parties

5.2.1 There is currently a paradox in the overhang rule. If an independent wins an electorate seat, that seat is removed from the Sainte-Laguë allocation. But if he had run as a candidate for a listed party[5] that received too few party votes to get one seat, his seat would become an overhang seat.

5.2.2 Neither situation has happened in New Zealand, but we have come close. In 2011, United Future achieved 0.60% of the party vote—just 0.19% above the effective threshold for that election (the minimum party vote needed to earn one seat).

5.2.3 In principle, the system should treat independents and parties of one MP in the same way. One way is to make all independent seats overhang seats. This is not ideal: it would mean that, if some New Zealand electorates started to have a preference for independents, the size of Parliament would inflate by the number of electorates doing so.

5.2.4 Another way is to abolish overhang seats altogether, so that any party with more electorate seats than its party vote entitlement would also have its seats removed from the Sainte-Laguë allocation. This is plausible, but would have impacts beyond just this discrepancy which would need to be considered. I address this in paragraph 5.3.2.

5.2.5 The compromise that I propose would work as follows:

(a) Any party or independent that wins an electorate seat is guaranteed at least one seat as its "proportional entitlement". If it would not have gained at least one seat in the Sainte-Laguë allocation, then its seat is removed from the Sainte-Laguë allocation.

(b) If a party not contesting the party vote wins more than one electorate, all electorate seats except one are overhang seats.

5.2.6 In this way, there is no difference between a party contesting the party vote but not winning many votes, and a party not contesting the party vote.

5.2.7 An interesting issue is whether there can be an incentive for a party not to contest the party vote. If a party knows it will win some number of electorate seats, it is always preferable for them not to be overhang seats. This way, their seats also remove from the seats that other

[5] In this submission, I use the term "a listed party" to mean "a party that is contesting the party vote".

parties have, which further increases the influence of this party in Parliament. Under the status quo, a party that knows more electorates are "safe" than its proportional entitlement would have a theoretical incentive not to list in order to take more seats from other parties.[6] With the system proposed in paragraph 5.2.5, there is no gain by not listing. Rather, there is an incentive to list, since there is no other way to take seats from other parties.

5.3 Alternatives to overhang

5.3.1 I concede that overhang is not ideal for a proportional system. Overhang, by definition, gives a party more seats than it deserves from its share of the party vote. However, I have yet to come across a suitable alternative. This subsection will consider the alternatives listed by the Commission.

5.3.2 **Removing overhang seats from the Sainte-Laguë allocated seats.** The effect of removing overhang seats from the Sainte-Laguë allocated seats, as is currently the case for independents, is even more disproportional than overhang seats. For example, if a party wins two seats from the party vote but five electorates, then with overhang they would have five out of 123 seats, or 4.06% of the seats. But if their extra seats are simply removed from the Sainte-Laguë allocation, then they would have five out of 120 seats, or 4.17%. This is even further away from the "correct" proportional figure of 2/120 = 1.67%.

5.3.3 If the Commission is particularly anxious to restrict the number of MPs to 120, then it is fair to say that the difference in disproportionality here is not that significant. But if a small degree of temporary additional seats is acceptable, then it should be noted that proportionality is harmed by removing overhang seats from the Sainte-Laguë method. I am not convinced that increasing the size of Parliament by a few members is, by itself, significant positively or negatively.

5.3.4 **Adding extra balance seats to Parliament to account for overhang seats.** While a handful of overhang seats is acceptable, the addition of extra balance seats would increase the size of Parliament even further.

5.3.5 The extent of the increase depends on the objective of the balance seats. If the objective is to maintain proportionality, the balance seats may need to double the size of Parliament. For example, in 2008, the Māori Party gained five seats, two of which were overhang. To restore proportionality, the National Party alone would have needed 27 extra seats. Parliament would have increased in size by 56 seats. This is clearly not a viable solution.

5.3.6 An alternative, which does not restore proportionality, is grant each party the same number of overhang seats, but limited to the number which would restore proportionality. This would have increased Parliament in size by 10 seats. This may be less extreme, but it is still unacceptably significant.

5.3.7 **Overhang and the Māori Party.** The only example of overhang in New Zealand since 1996 has been the Māori Party. It is easy to appreciate why some feel it is unfair that the Māori Party has always been able to distort proportionality. It is even easier to appreciate why it is unfair that their voters can "game the system" by tactically giving their party vote to a different party, knowing that they are contributing to the overhang.

[6] Interestingly, this incentive has actually applied to the Māori Party since its founding, but it has still contested the party vote in every election. It is likely that there are other incentives to contest the party vote; for example, it is easier for a party to get publicity when it is contesting the party vote. The Commission may consider this to be enough, in which case the question of incentive to contest the party vote diminishes in importance here.

5.3.8 However, the Māori Party's tactic has been aided more by their targeting of the Māori electorate seats than by the overhang provision. The Māori electorate seats are different from the General electorate seats in that they have the express purpose of representing a special interest group. While it is true that, in theory, a party may tend to the special interests of a geographic area, this is not directly comparable to the Māori electorate seats. Geographic electorates are not designed to represent special interest groups. All electors fall in some geographic area; there is no such analogy for the Māori electorates.

5.3.9 The Māori electorate seats are, of course, forbidden scope for the Commission. Therefore, I do not believe the Commission should attempt to address any perceived unfairness in favour of the Māori Party arising from their overhang seats.

5.4 Equal voting power in Parliament

5.4.1 There are some proposals to resolve overhang that would see MPs have unequal voting rights in Parliament. Voting power may, for instance, be distributed purely on the distribution of the party vote. For example, if a party receives 25.67% of the party vote, it should receive exactly 25.67% of voting power, regardless of its number of MPs. A party's voting power may be equally divided between MPs if need be.

5.4.2 The Commission should be sceptical of these proposals. They are more radical than they seem. They strike at the heart of what the role of Parliament is. Representativeness may be a factor in the electoral system, but once in Parliament, is it members' role to follow the every wish of their constituents, or is it their role to deliberate in the national interest?

5.4.3 I subscribe to the latter view, espoused by Rt Hon Edmund Burke when addressing the electors of Bristol in 1774. The comments were made in an FPP context, but the principle still applies in an MMP parliament:

> Parliament is not a *congress* of ambassadors from different and hostile interests; which interests each must maintain, as an agent and advocate, against other agents and advocates; but parliament is a *deliberative* assembly of *one* nation, with *one* interest, that of the whole; where, not local purposes, not local prejudices, ought to guide, but the general good, resulting from the general reason of the whole.

5.4.4 This is consistent with proportionality. Electing proportionally by party is a reflection of the fact that our political divisions are not primarily geographic, but ideological. We elect representatives with ideological biases reflecting the broader population. But it is important that they do not merely become sheep for their electoral base. Their role in scrutinising and discussing proposed legislation—with their own judgement—must continue.

5.4.5 Critics will call this idealistic. It is to an extent, but my understanding is that much of the work done by parliamentarians—particularly in select committees—is collaborative. Furthermore, not all parliamentary work is politically controversial. Such work should continue to rely on members' judgement.

5.4.6 It does not matter, for this purpose, that parliamentary votes are exercised on a party bloc basis. Alliances within Parliament do not remove from the need to see members as individuals in their capacity as members.

5.4.7 To this end, it is important that once elected, MPs are all seen as MPs and not as sheep for their party. The one-vote-per-MP principle in Parliament should be retained.

Appendix A

This appendix gives a proof of the formulae for effective threshold given in paragraphs 1.3.4 and 1.3.9. For brevity, I will show the proof for the modified Sainte-Laguë method. The formula for the unmodified Sainte-Laguë method will then follow as the special case $m = 1$. In this proof, we will call the party trying to gain its first seat the **threshold party**.

Let there be k parties, other than the threshold party, in an N-seat house. Let the effective threshold for the threshold party be t. Let the total number of votes cast in the election be V, and the number of votes cast for each party other than the threshold party be $v_1, v_2, \dots, v_k$.

Let the number of seats gained by each party other than the threshold party be $n_1, n_2, \dots, n_k$, such that $n_1 + n_2 + \cdots + n_k = N$. Note that the total number of seats N doesn't include the threshold party's seat: the threshold is the number of votes that allows the threshold party to "steal" a seat from one of the other parties.

For simplicity (*i.e.* to avoid awkward ceiling and floor functions), we will assume that each of the other k parties got exactly the number of votes they needed to gain the number of seats they gained. In that case, the effective threshold is the point where the threshold party's first quotient is equal to each of the other parties' last quotients. The other parties' last quotients are also assumed to be all equal as a consequence of the assumption that all other parties got exactly the number of votes needed for their number of seats.

Furthermore, for the modified Sainte-Laguë method, we will assume that all parties other than the threshold party gain more than one seat, so they are not affected by the threshold.

Since the first quotient is $\frac{t}{m}$ and the last quotient of every other party is $\frac{v_i}{2n_i - 1} \forall i \in \{1, 2, \dots, k\}$, we have

$$\frac{t}{m} = \frac{v_1}{2n_1 - 1} = \frac{v_2}{2n_2 - 1} = \cdots = \frac{v_k}{2n_k - 1}$$

Then we have

$$v_i = \frac{t(2n_i - 1)}{m} \quad \forall i \in \{0, 1, \dots, k\}$$

Also, the total number of votes is

$$\begin{aligned} V &= v_1 + v_2 + \cdots + v_k + t \\ &= \frac{t(2n_1 - 1)}{m} + \frac{t(2n_2 - 1)}{m} + \cdots + \frac{t(2n_k - 1)}{m} + t \\ &= \frac{t}{m}[(2n_1 - 1) + (2n_2 - 1) + \cdots (2n_k - 1)] + t \\ &= \frac{t}{m}[2(n_1 + n_2 + \cdots + n_k) - k] + t \\ &= t\left(\frac{2N - k}{m} + 1\right) \end{aligned}$$

So the effective threshold for the modified Sainte-Laguë method is

$$t = \frac{V}{\frac{2N-k}{m}+1}$$

The unmodified Sainte-Laguë method is the case where $m = 1$, in which case the effective threshold reduces to

$$t = \frac{V}{2N-k+1}$$

Appendix B

This appendix lists what the results of previous elections would have been using the thresholds that I propose in section 1 and the overhang modification I propose in paragraph 5.2.5. Briefly, my proposal is as follows:

- There is no 5% threshold.
- There is no one electorate threshold.
- The Sainte-Laguë method is used but modified so that the first divisor is 1.4. This leads to an effective threshold of about 0.58%.
- A party or independent winning an electorate seat, but either not contesting the party vote or falling below the effective threshold, is still entitled to exactly one non-overhang seat (*i.e.* one of their electorate seats is removed from the Sainte-Laguë allocation).

We assume that all electors voted the same way, *i.e.* the party vote is identical, and all electorate winners were the same. In practice this is unlikely to be the case: the abolishing of the 5% threshold, for example, will likely influence voters not to abandon parties where their vote would have previously been wasted. Nonetheless, the comparison can give some indication of expected outcomes in the political context of the day. For brevity, we only list parties that would have gained at least one seat under my proposal (and hence the status quo).

Results where parties would have gained seats relative to the status quo are indicated in boldface. An asterisk denotes that the result for the party includes an overhang seat. A double asterisk denotes two overhang seats.

1996 election	**Party Vote %**	**Electorate seats**	**Result under status quo**	**Result under my proposal**
National Party	33.84%	30	44	42
Labour Party	28.19%	26	37	35
New Zealand First Party	13.35%	6	17	16
Alliance	10.10%	1	13	12
ACT New Zealand	6.10%	1	8	7
Christian Coalition	4.33%	0	0	**5**
Aotearoa Legalise Cannabis Party	1.66%	0	0	**2**
United New Zealand Party	0.88%	1	1	1
Other parties	*1.55%*			
Total	**100.00%**	**65**	**120**	**120**

1999 election	Party Vote %	Electorate seats	Result under status quo	Result under my proposal
Labour Party	38.74%	41	49	48
National Party	30.50%	22	39	37
Alliance	7.74%	1	10	9
ACT New Zealand	7.04%	0	9	9
Green Party	5.16%	1	7	6
New Zealand First Party	4.26%	1	5	5
Christian Heritage Party	2.38%	0	0	**3**
Future New Zealand	1.12%	0	0	**1**
Aotearoa Legalise Cannabis Party	1.10%	0	0	**1**
United NZ	0.54%	1	1	1
Other parties	*1.43%*			
Total	**100.00%**	**67**	**120**	**120**

(United NZ does not meet the effective threshold but still gets one non-overhang seat—see paragraph 5.2.5(a).)

2002 election	Party Vote %	Electorate seats	Result under status quo	Result under my proposal
Labour Party	41.26%	45	52	49
National Party	20.93%	21	27	25
New Zealand First Party	10.38%	1	13	12
ACT New Zealand	7.14%	0	9	9
Green Party	7.00%	0	9	8
United Future	6.69%	1	8	8
Jim Anderton's Progressive Coalition	1.70%	1	2	2
Christian Heritage Party	1.35%	0	0	**2**
Outdoor Recreation NZ	1.28%	0	0	**2**
Alliance	1.27%	0	0	**2**
Aotearoa Legalise Cannabis Party	0.64%	0	0	**1**
Other parties	*0.35%*			
Total	**100.00%**	**69**	**120**	**120**

2005 election	Party Vote %	Electorate seats	Result under status quo	Result under my proposal
Labour Party	41.10%	31	50	50
National Party	39.10%	31	48	47
New Zealand First Party	5.72%	0	7	7
Green Party	5.30%	0	6	6
Māori Party	2.12%	4	*4	*4
United Future New Zealand	2.67%	1	3	3
ACT New Zealand	1.51%	1	2	2
Jim Anderton's Progressive	1.16%	1	1	1
Destiny New Zealand	0.62%	0	0	**1**
Other parties	*0.69%*			
Total	**100.00%**	**69**	**121**	**121**

2008 election	Party Vote %	Electorate seats	Result under status quo	Result under my proposal
National Party	44.93%	41	58	55
Labour Party	33.99%	21	43	42
Green Party	6.72%	0	9	8
New Zealand First Party	4.07%	0	0	**5**
ACT New Zealand	3.65%	1	5	5
Māori Party	2.39%	5	**5	**5
Jim Anderton's Progressive	0.91%	1	1	1
United Future	0.87%	1	1	1
Other parties	*1.38%*			
Total	**100.00%**	**70**	**122**	**122**

2011 election	Party Vote %	Electorate seats	Result under status quo	Result under my proposal
National Party	47.31%	41	59	58
Labour Party	27.48%	23	34	33
Green Party	11.06%	0	14	13
New Zealand First Party	6.59%	0	8	8
Conservative Party	2.65%	0	0	**3**
Māori Party	1.43%	3	*3	*3
Mana	1.08%	1	1	1
ACT New Zealand	1.07%	1	1	1
United Future	0.60%	1	1	1
Other parties	*0.73%*			
Total	**100.00%**	**70**	**121**	**121**