Contestability of Australian Federal Elections

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Abstract

The Herfindahl-Hirschman Index (HHI) is commonly used to quantify the degree of concentration in markets or industries. This paper uses data on Federal elections for both the Upper and Lower Houses in Australia to explore whether the contestability/concentration varies across elections, with the primary focus being on the five most recent elections: 1993, 1996, 1998, 2001 and 2004. Given the differing voting regimes for each house of parliament, we anticipate differing levels of competition. Our results show significant movements in contestability over time. The results also imply a smaller degree of concentration than we would expect to find in a two-party system. To the extent that the Upper House (Senate) – until the 2004 election – is not controlled by the executive, this implies a greater level of political competition, and choice for voters, than that associated with two-party systems.

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1. Introduction

In this paper we employ the Herfindahl-Hirschman Index (HHI), (Herfindahl, 1950; Hirschman, 1945) to examine the level of contestability in Australian politics. The HHI is commonly used to quantify the degree of concentration in markets or industries. In the political science literature, the complement of the HHI (1-HHI) is known as Rae's fractionalisation index (Rae, 1967), whereas the reciprocal (1/HHI) is referred to as the "effective number of parties" (Laakso and Taagepera, 1979). This "effective number of parties" is calculated as follows:

$$ENP = \frac{1}{HHI} = \frac{1}{\sum_{j=1}^{n} v_j^2} \tag{1}$$

where v_j denotes the vote/seat share of the jth candidate/party. If the measure is calculated using the *vote shares* then we obtain the "effective number of elective parties". On the other hand, if we use each party's *seat share* in say, the Upper House, then the outcome is referred to as the "effective number of legislative parties".

In the political science literature, this reciprocal is often used as a tool for *classification* of party systems and as such it inevitably attracted a variety of criticisms and modifications (see for example Molinar, 1991; Taagepera, 1999; Borooah, 2002; Dumont and Caulier, 2003). It is our view that the HHI and its reciprocal (1/HHI) are inappropriately used in this context. Indeed, 1/HHI was never meant to represent the so-termed "effective number of parties" and be used as a measure of the actual number of dominant parties (or firms). As a result, it was never meant to be a tool for classification, not only of party systems, but also of systems in general. The interpretation, which seems to have been blurred in the political science literature, pertains to *the equivalent number of parties with equal vote shares* that we would expect to find <u>*given*</u> *the observed level of concentration.* In this paper, we abstain from calling the measure "effective". Instead, we pursue the notion of the "equivalent number of parties", whether elective or legislative, and its implications

for the degree of contestability in the Australian political arena. Thus, we still employ the formula as given by (1), however our purpose and interpretation are different.

Whilst the previous studies utilising the HHI, or a similar measure, predominantly had an international, cross-country focus (see for example Laakso and Taagepera, 1979; Lijphart, 1984, 1990, 1994, 1999a; Mackie and Rose, 1984; Taagepera and Shugart, 1989; Cox, 1997), our aim is thus to focus solely on Australia. We are mainly interested in exploring whether the contestability/concentration varies across elections, with the primary focus being on the five most recent elections: 1993, 1996, 1998, 2001 and 2004. However, our analysis of the Senate does extend to 1948, for reasons that will be explained in the next section. To the best of our knowledge the HHI has not been extensively applied in this way to both Houses of Parliament in the Australian context.

The plan of the paper is as follows. In the next section we provide a description of the Australian parliamentary and electoral systems and give a brief overview of the existing literature and the aims of our study. Section 2 contains a brief discussion of the voting systems used in Australian Federal election. In sections 3 and 4, we present the analysis and examine the results regarding the degree of contestability in both houses of the Australian parliament, the Senate and the House of Representatives, respectively. The last section contains some concluding remarks.

2.   Australian Parliamentary and Electoral Systems

There are different rules which govern elections in each House of Parliament. Australia is the only major democracy where government formation is governed by the single member district Alternative Vote (AV) system. This means that members of the lower house chamber (House of Representatives) are elected based on the system of preferential voting where each voter is required to list the candidates in order of preference. The way the AV system works is that the candidate with the majority of first preference votes in a particular electoral division is elected. Preferences other than the first are only taken into consideration if there is no clear winner in terms of first preference votes. In such cases, the candidate with the lowest share of votes is

declared defeated and their preferences transferred to other candidates until one candidate achieves absolute majority.

In contrast, Senate (Upper House) elections are governed by the system of proportional representation by single transferable vote (PR-STV). The Australian Labour Party (ALP) government in 1948 introduced this system (see Uhr 1999 for a discussion)[1]. Although both systems are preferential, the major difference between the elections of the two chambers is that the lower house votes result in election of a single member in each of the (currently) 150 electoral seats, whereas the Senate PR-STV results in election of multiple members for each state/territory. More specifically, twelve Senators are elected from each of the states and two from each territory. In contrast to proportional representation, the AV system is seen as closer to plurality (simple majority) vote in a sense that it favours larger and/or more geographically concentrated parties (Lijphart, 1994; Bean, 1997; Sharman, Sayers and Miragliotta, 2002). Thus, according to Duverger's Law (Duverger, 1954), we should observe a higher level of party concentration in the House of Representatives than in the Senate. In this context, we would also expect to find a decrease in concentration in the Senate since the introduction of PR in 1948. Some evidence on this latter point is offered in Lijphart (1999b).

Given that the Australian system is disproportional (Farrell and McAllister, 2003; Lijphart, 1999b), meaning that the party first preference vote shares do not directly translate into seat shares, we are interested in changes at both the elective and the legislative level. Thus, for the Senate we examine not only the changes in its composition since the introduction of PR, but also the changes in the popular vote from 1993-2004. On the other hand, in case of the House of Representatives we only consider the five most recent elections, however we do so at the national *and* the district level. In fact, it is the electorate level that will be the main focus of our analysis for the lower chamber. Thus, we do not seek to *classify* the Australian party system but rather investigate the degree of party concentration and illustrate that if

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[1] Interested reader is referred to Uhr (1999) for a critical overview of the historical events that lead to the introduction of proportional representation. Uhr (1999) argues that there was more to introduction of PR than "party pragmatism".

applied and interpreted properly the HHI index and its reciprocal are appropriate and useful measures in this area.

3. Senate

The data for this study was mainly compiled from the election information available from the Australian Electoral Commission (AEC). For the Senate, we obtained both the seat shares and the first preference vote shares for each party. Using these, we accordingly constructed the equivalent number of legislative and elective parties given the observed level of concentration. The source for the seat shares for elections 1949-1998 was the Parliament of Australia research paper "Federal Election Results 1949-1998". The information on Senate composition post 2001 and 2004 elections as well as the first preference vote shares for 1993-2004 both came from the AEC

Our analysis differs from Lijphart (1999b) in two regards. Firstly, we extend the time span to include the 2001 and 2004 elections and secondly, we treat the Liberals and the Nationals as separate parties. We do so for consistency reasons, particularly given that despite their long standing coalition, the two parties do stand for the Senate seats under separate groupings in certain states[2] as well as contest the same divisions in case of the lower house elections.

Figure 1 shows the equivalent number of legislative parties in the Senate from 1949 to 2004[3]. As can be seen, there is a clear, upward trend indicating that the degree of concentration has decreased over the years. When we regress the equivalent number of (legislative) parties on the election year, we obtain the following:

$$ENLP = \underset{(0.0000)}{2.3784} + \underset{(0.0000)}{0.0339t}$$

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[2] In 2004 they stood separately in Queensland, Western Australia and South Australia.
[3] The series is trend stationary. The Phillips-Perron test of the de-trended series produces the test statistics of Z_ρ= -14.7 and Z_τ=-3.3 which reject the null hypothesis of a unit root. We also conducted the Durbin's alternative test for autocorrelation (Durbin, 1970) and found no evidence of serial correlation in the ENLP series (test statistic = 1.84).

with an R^2 of 0.68. The values in the parenthesis are p-values. The highly significant positive slope coefficient (p-value of 0.0000) indicates that the concentration in the Senate has *significantly decreased* after the introduction of the system of proportional representation.
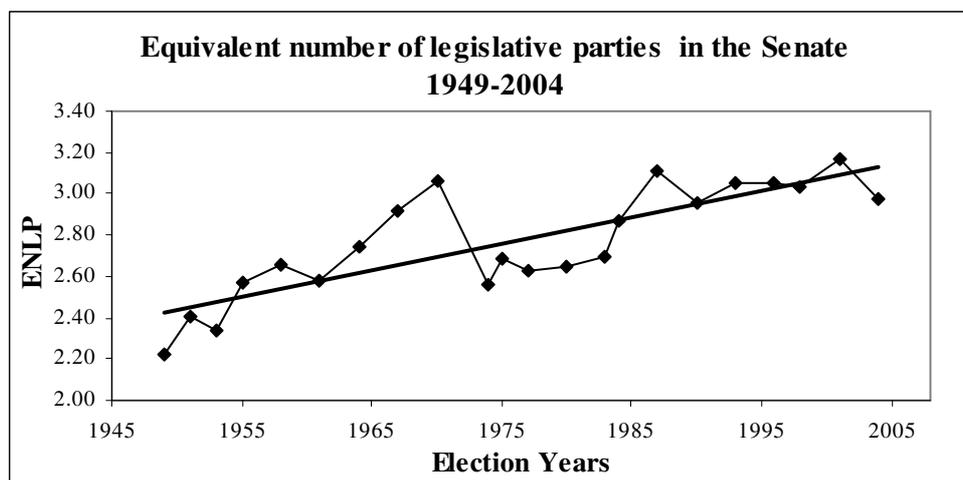

Equivalent number of legislative parties in the Senate 1949-2004

Figure 1

A closer inspection of Figure 1 reveals a sharp increase in the equivalent number of legislative parties until 1970 and a sharp fall in 1974, which coincides with the rise and the fall of the Democratic Labour Party (DLP). Indeed, some do see the post-war split in the Australian Labour Party (ALP) and the rise of the DLP as the true catalyst of change in the Senate composition and the increase in representation of minor parties in the upper house (see Sharman, 1999). Right after the fall of the DLP, the election in 1977 saw the emergence of another minor party, namely the Australian Democrats, and started another upward trend. As shown, the fractionalisation in the Senate peaked in 1987. It is interesting to note that 1987 saw "the double dissolution election" where both houses of the Australian parliament were "dissolved" and faced the re-election. This was triggered by the legislation for the controversial national identity card (Australia Card). After this the concentration in the Upper House continued to decrease, presumably due to the appearance of the Greens in the 1990s and the increase in their support base and the seat share in the Senate.

However, although we found an overall upward trend, it appears that this trend is itself comprised of two separate upward movements that correspond to two different time periods. As can be seen, the increase in the equivalent number of parties

coinciding with the rise of the DLP seems to be sharper than that corresponding to the Democrats/Greens period. In order to examine the possibility that there exists a structural break where the slopes and/or intercepts of the two trends are different, we re-estimate our regression model and include a dummy variable which is equal to 1 during the DLP period and 0 otherwise, as well as an interaction between this dummy and the election years. We obtain the following results (p-values are in the parenthesis):

$$ENLP = \underset{(0.0000)}{2.1275} + \underset{(0.0000)}{0.0470t} + \underset{(0.9651)}{0.0061DLP} + \underset{(0.0038)}{0.0481t \times DLP}$$

We find that although there is no significant difference between the intercepts, the trend associated with the rise of the DLP is, as postulated, steeper than the post-1974 trend. In fact, the slope associated with the DLP period is double that of the post-1974 period. There is also a considerable improvement in the goodness of fit with the adjusted R^2 increasing from 0.66 to 0.87[4].

An 'institutionalist' approach, which emphasizes the importance of electoral rules in structuring of the party systems (see Sartori, 1968, 1976; Rae, 1971; Riker, 1982; Lijphart, 1990, 1994; Taagepera and Shugart, 1989), would lead us to believe that the change came about due to the introduction of proportional representation. However, such an approach could not explain why the equivalent number of parties had not continued to rise at the same rate after the fall of the DLP. In other words, why is it that the rise of the Australian Democrats and the Greens did not have the same effect on the Senate composition as the rise of the DLP? Our results suggest that if the DLP had kept its support base, in 2004 the concentration in the Senate would have been equivalent to that of about four equally sized parties. In contrast, and despite the existence of the Australian Democrats, Greens and even One Nation, the equivalent number of parties had barely moved past three during the 1990's.

A plausible explanation stems from a more recent body of literature which argues that formation of party systems is influenced by a combination of electoral rules and social cleavages (see Powell, 1982; Ordershook and Shvetsova, 1994; Amorim Neto and

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[4] Adjusted R^2 is R^2 penalised for the inclusion of extra variables in the model.

Cox, 1997). The argument is that social cleavages give rise to new parties, whereas particular electoral rules enable and encourage their representation in the parliament. Thus, if this is the case then the overall decrease in political concentration in the Australian Senate is due to both, social fragmentation that gave rise to the DLP, Democrats, Greens and even One Nation, as well as the presence of proportional representation. If we follow this argument then it is ultimately the issues underlying the appearance of the social cleavages that govern how these are translated into political significance. In other words, it is not merely sufficient for a party to form, but it also needs to have an adequate support in the society which itself depends on the importance of issues that the party represents. Therefore, the anti-communist movement in the post-war Australia, which gave rise to the DLP, was of greater, and at the time also of increasing importance to the society than the issues represented by the Australian Democrats, Greens or One Nation in the later years.

A closer look at the five most recent elections reveals that although we find an overall decrease in concentration, the equivalent number of legislative parties has been falling in all elections since 1993 except for that in 2001. This is however not the case when we look at the equivalent number of elective parties, shown in Table 1. As mentioned earlier, the discrepancy between the equivalent number of elective and legislative parties is to be expected given the disproportional nature of the Australian electoral system. Note however, that the two sets of values are not directly comparable as the first preference vote share categories could not be disaggregated down to the same level as the Senate seat shares. Nonetheless, it can be seen that at the elective level the concentration is not only smaller than at the legislative level, but it also appears to be decreasing over time. In both cases the 2004 election is different indicating that this election was not only less contestable, but also that it resulted in a higher degree of concentration in terms of Senate composition. This is unsurprising given that this election resulted in the government gaining a majority in the Senate for the first time since 1981.

Table 1: Equivalent number of elective and legislative parties – Senate

Election	Elective	Legislative
1993	3.55	3.06
1996	4.32	3.05
1998	4.49	3.04
2001	4.68	3.17
2004	4.35	2.97

4.   House of Representatives

All of the House of Representatives data was sourced from the AEC. In addition to the seat shares and vote shares at the national level, we also obtained the vote shares of each candidate at the electorate level. Using the electorate vote shares we were able to construct the equivalent number of elective candidates/parties[5] that we would expect to find *in each electorate* given the calculated level of concentration. The dataset spans over five elections, from 1993 to 2004, and furthermore contains the observed number of candidates in each electoral division and information regarding the electoral seat status and the state and region to which it belongs. The seats are classified by the AEC based on the two-party preferred statistics as follows: <56% as "Marginal", 56%-60% "Fairly Safe" and > 60% as "Safe".

4.1   Descriptive Statistics

4.1.1   National Level

At the national level, we look at the degree of contestability in the House of Representatives in terms of both the equivalent number of elective and legislative parties. As shown in Table 2, in contrast to our findings regarding Senate, the equivalent number of legislative and elective parties seems to follow a quadratic pattern with a peak in 1998. Same as previously, the equivalent number of elective parties is higher than the number of legislative parties although the two are again not directly comparable for the same reason. Furthermore, in line with our expectations

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[5] Since in case of the lower house elections a single candidate represents a party in each division, terms candidates and parties can and will be used interchangeably.

and Duverger's Law, overall the degree of concentration associated with the lower chamber is higher than that associated with the Senate.

Table 2: Equivalent number of elective and legislative parties

Election	House of Representatives		Senate	
	Elective	Legislative	Elective	Legislative
1993	2.87	2.39	3.55	3.06
1996	3.19	2.58	4.32	3.05
1998	3.45	2.48	4.49	3.04
2001	3.42	2.52	4.68	3.17
2004	3.17	2.43	4.35	2.97

4.1.2 District Level

Table 3 shows the descriptive statistics associated with the observed number of candidates in all divisions across states, elections and seat characteristics. As can be seen, over the five most recent elections, the actual number of candidates per division varied from 2 to 14, averaging at about 7 overall. In terms of elections, on average the largest number of candidates was running in 1998 and the smallest in 1996 when government changed hands.

On average, the highest number of candidates across the five elections was observed for electorates in Queensland, closely followed by those in New South Wales. The finding that these two states typically attract a higher number of candidates is interesting given that the only seats in Australia that are held by the Independents are situated in those two states. The smallest average number of candidates was recorded for Tasmania. As expected, marginal seats seem to be characterised by a higher average number of candidates, followed by the fairly safe seats. On average, the smallest number of candidates is observed for safe seats. Moreover, provincial seats seem to attract the highest number of candidates, closely followed by the inner metropolitan seats.

Table 3: Actual number of candidates

		Mean	Std. Dev.	Min	Max	N
Overall		6.86	1.84	2.00	14.00	743
By Election	1993	6.41	1.90	2.00	11.00	147
	1996	6.18	1.78	3.00	10.00	148
	1998	7.49	1.72	4.00	13.00	148
	2001	6.92	1.81	4.00	12.00	150
	2004	7.27	1.68	4.00	14.00	150
All Elections						
By State/ Territory	WA	7.14	1.72	4.00	12.00	72
	NSW	7.21	2.06	3.00	14.00	250
	VIC	6.44	1.76	3.00	12.00	186
	QLD	7.23	1.49	4.00	11.00	133
	SA	6.59	1.44	4.00	11.00	59
	ACT	6.00	1.73	3.00	9.00	11
	NT	5.57	1.81	2.00	7.00	7
	TAS	5.00	0.96	4.00	8.00	25
By Seat Characteristics	Marginal	7.13	1.96	2.00	14.00	275
	Fairly Safe	6.76	1.78	3.00	13.00	152
	Safe	6.66	1.74	3.00	12.00	316
	Inner Metropolitan	6.95	1.74	3.00	13.00	208
	Outer Metropolitan	6.66	1.77	3.00	14.00	219
	Provincial	7.14	1.92	3.00	12.00	90
	Rural	6.85	1.96	2.00	12.00	226

The HHI provides an interesting insight into the level of contestability in the Lower House elections and reveals a considerable degree of concentration across elections and divisions. As can be seen from Table 4, the index itself varies from 0.2 to 0.55 across the five elections, averaging around 0.38. We find that, on average, the concentration in the Australian House of Representatives is equivalent to that of having three equally sized political parties.

The most contestable election was that in 1998, which saw the rise in popularity of the Greens and the One Nation Party, which managed to obtain 8.43 percent of the first preference votes. Together with the Australian Democrats, these two minor parties accounted for over 15 percent of the first preference votes, which is clearly reflected in the calculated degree of contestability across divisions. The most recent election in 2004 witnessed the election of three Independents and the further increase in support for the Australian Greens. Thus, it is unsurprising that we find a considerable level of

contestability with its structure being equivalent to having 2.8 equal sized parties. The least contestable was the 1993 election, followed by that in 1996.

Victoria shows the highest degree of concentration with the equivalent number of candidates with equal vote shares averaging about 2.5 across all divisions and elections. As expected, the safe seats are characterised by the lowest number of equivalent parties/candidates with equal vote shares. It is also unsurprising to see that rural seats are less concentrated particularly relative to the outer metropolitan areas.

Table 4: HHI and the equivalent number of candidates with equal vote shares

		Mean	Std. Dev.	Min	Max	N
Herfindahl Index		0.38	0.05	0.20	0.55	743
Equivalent number of candidates						
Overall		2.72	0.42	1.83	4.89	743
By Election	1993	2.50	0.42	1.85	4.03	147
	1996	2.56	0.37	1.83	4.18	148
	1998	2.90	0.47	1.92	4.89	148
	2001	2.80	0.34	2.01	4.36	150
	2004	2.84	0.31	2.09	3.97	150
All Elections						
By State/ Territory	WA	2.89	0.42	1.94	4.55	72
	NSW	2.72	0.45	1.85	4.89	250
	VIC	2.53	0.33	1.85	3.87	186
	QLD	2.92	0.43	1.83	4.34	133
	SA	2.76	0.26	2.20	3.43	59
	ACT	2.66	0.21	2.37	2.99	11
	NT	2.63	0.34	1.98	3.02	7
	TAS	2.58	0.16	2.34	2.85	25
By Seat Characteristics	Marginal	2.83	0.38	1.85	4.55	275
	Fairly Safe	2.78	0.31	2.13	3.64	152
	Safe	2.60	0.45	1.83	4.89	316
	Inner Metropolitan	2.66	0.33	1.85	3.87	208
	Outer Metropolitan	2.63	0.33	1.91	3.86	219
	Provincial	2.77	0.44	1.83	4.34	90
	Rural	2.84	0.51	1.85	4.89	226

4.2   Regression Analysis

Although the descriptive analysis identified some interesting patterns, in order to examine the discrepancies in contestability across elections and seat status, we need to be able to separate their effects both from each other, and from other factors. Given the structure of our dataset for the House of Representatives, whereby we have

multiple observations for each electoral division, which itself is in a particular state, the most appropriate modelling technique is a multilevel mixed effects regression. The general specification is given by the following:

$$y_{ijt} = X'_{ijt}\beta + u_i + v_j + \varepsilon_{ijt}$$

where y_{ijt} represents the division specific variable, say the observed number of candidates in division i, in state $j = \{NSW, VIC, QLD, SA, WA, NT, ACT, TAS\}$, for election in year $t = \{1993, 1996, 1998, 2001, 2004\}$. The state and division effects are specified as random and accounted for through u_i and v_j, respectively. These are meant to capture and account for any state or division specific influences. On the other hand, X'_{ijt} contains the explanatory variables, which are comprised of the election and seat status dummy variables. Regional classifications, inner, outer metro, provincial and rural are time invariant and thus, they are subsumed into the division effect and not included as explanatory variables[6].

Thus, in the case of the observed number of candidates, we postulate that this is determined by the state and division characteristics, factors associated with the elections themselves as well as by the electoral seat status. The results of this regression are given in Table 5. As can be seen, the results have retained much of the pattern identified in the preliminary analysis, with the 1996 election having on average one less candidate relative to the election in 2004. On average, there were around 6-7 candidates standing in safe seats in 2004. We also find that, at 5% level of significance, the number of candidates per electorate in 1998, or in 2001, is not significantly different from that in the most recent election. The marginal seats are still more likely to have a higher number of candidates. However, in case of the fairly safe seats the results show that on average, the number of candidates does not differ

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[6] Their inclusion would lead to endogeneity bias since they are correlated with the random division effect.

significantly from that in the safe seats. The LR test implies the presence of significant state and division effects[7].

Table 5: Observed number of candidates/parties

Variable	Coefficient	Std. Error	p-value
Election year			
1993	-0.9174	0.1914	0.0000
1996	-1.0996	0.1902	0.0000
1998	0.1672	0.1905	0.3800
2001	-0.3671	0.1892	0.0520
Seat Status			
Marginal	0.5721	0.1515	0.0000
Fairly Safe	0.1464	0.1721	0.3950
Constant	6.6561	0.3338	0.0000
State effects			
σ_v	0.7824	0.2573	
Division effects			
σ_u	0.4301	0.1091	
LR test	53.44		0.0000

Dependent variable is the actual number of categories.
Omitted category for the seat status is "Safe".

Table 6 contains the results associated with the equivalent number of candidates/parties. As shown, the pattern is much the same as that for the observed number of candidates with the exception being the result regarding seat classification. In this case, there is a significant difference in the equivalent number of parties with equal vote shares across all three-seat classifications. As expected, the marginal seats are characterised by the highest degree of concentration, followed by the fairly safe seats. The evidence that the 1993 and 1996 elections were significantly less contestable than the 2004 election implies that the Australian political landscape is perhaps becoming more competitive over time. However, the regression results also indicate that there are no significant differences in concentration across the three most recent elections. In other words, although there is evidence that political concentration has decreased since 1993, the level of contestability seems to have stabilised in elections following that in 1996 when government changed hands.

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[7] This is a conservative test (this specification versus linear regression) due to the existence of more than one random term. Rather than being an exact test, it provides an upper bound for the actual tail probabilities of the LR statistic (see for example Stram and Lee, 1994; McLachlan and Basford, 1988).

Table 6: Equivalent number of candidates/parties

Variable	Coefficient	Std. Error	p-value
Election year			
1993	-0.3625	0.0363	0.0000
1996	-0.2741	0.0360	0.0000
1998	0.0447	0.0361	0.2150
2001	-0.0525	0.0358	0.1420
Seat Status			
Marginal	0.2868	0.0326	0.0000
Fairly Safe	0.1582	0.0348	0.0000
Constant	2.6926	0.0643	0.0000
State effects			
σ_v	0.1447	0.0470	
Division effects			
σ_u	0.1523	0.0173	
LR test	130.51		0.0000

Dependent variable is the actual number of categories.
Omitted category for the seat status is "Safe".

Although there is a large discrepancy between the actual number of candidates in each electorate and the equivalent number given the observed level of concentration, our regression results show that the two follow the same pattern. In other words, we find that those elections with a fewer number of candidates standing in each electoral division were also associated with a higher degree of concentration in terms of vote shares received. Additionally, our analysis also shows that there were no significant differences across the three most recent elections either in terms of the actual number, or the equivalent number of candidates per electorate.

5.   Conclusion

Consistent with Duverger's law we find that there has been a significant decrease in concentration in the Senate since the introduction of proportional representation in 1948. It is interesting to note that the decrease in concentration in the Senate does coincide with the rises and falls in popular support for parties such as the Democratic Labour Party, Democrats, Greens and the One Nation. We find that the overall upward trend in the equivalent number of parties in the Senate actually consists of two different upward movements that correspond to two different periods. More

specifically, we find that during the period when the DLP had a strong support base, the equivalent number of parties was rising at a significantly higher rate that was more than double that of the post-1974 period. As a result, we argue that the change in Senate composition may not be solely due to the existence of the proportional representation voting system but could also be a function of changing social cleavages in society.

As anticipated, we find a lower level of contestability in the House of Representatives than we do in the Senate. Unsurprisingly, at the district level, competition for the lower chamber seats is highest in marginal seats and lowest in safe seats. We find that while there may be a large number of candidates contesting a particular seat, the vote shares are distributed disproportionately resulting in a much higher degree of political concentration across electorates. This was expected given that under the Alternative Vote system the first preference votes for minor parties will usually end up with one of the major party candidates through the flow of preferences. Thus, the discrepancy between the actual number of candidates and the equivalent number given the degree of concentration is unsurprising. We also find that while contestability has increased since 1993, the last three elections were equally contestable, which implies that the degree of political competition has stabilised since the 1996 election. Finally, our results also imply a smaller degree of concentration than we would expect to find in a two-party system. To the extent that the Senate (until the 2004 election) is not controlled by the executive, this implies a greater level of political competition, and choice for voters, than that associated with two-party systems.

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