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To cite this article: Simon Jackman & Gary N. Marks (1994) Forecasting Australian elections: 1993, and all that, Australian Journal of Political Science, 29:2, 277-291, DOI: [10.1080/00323269408402294](https://doi.org/10.1080/00323269408402294)

To link to this article: <https://doi.org/10.1080/00323269408402294>



Published online: 21 Sep 2007.



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## Forecasting Australian Elections: 1993, and All That

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The link between economic conditions and election outcomes is a pillar of social science. Voters prefer 'better times' to worse and reward or punish incumbents accordingly. We investigate the extent to which this truism holds in the Australian context, with particular emphasis on the 1993 result. While Australian election outcomes are generally not well predicted by prevailing economic conditions, we are impressed by the extent to which the 1993 election outcome is at odds with the state of the economy. In particular, we find Labor performed up to five percentage points better than expected in 1993, making this result one of the most exceptional election results ever observed in Australia. The sizeable electoral penalty typically accompanying large increases in unemployment was effectively nullified in 1993. We accurately predict the 1993 result (ex post) only if unemployment is considered electorally irrelevant. We conclude by suggesting a research agenda for better understanding the link between economic context and election outcomes in the Australian setting.

### Economics and Elections

It is difficult to understate the importance of elections to students of democratic politics. For many of us, elections are our professional sine qua non: politicians campaign, the media commentates, voters choose, electoral systems aggregate, and, sometimes, governments fall, policies change, and people's lives are affected. Since elections impinge so directly on many sub-fields of our discipline, a good deal of scholarly energy has been expended in attempting to explain election outcomes, or to render election outcomes predictable. Under what conditions do governments fall? What drives voters' decisions? Is there some *coherence* between the motivations underlying the millions of vote choices made every election, the ensuing aggregate result, and its consequences?

In this spirit political scientists and economists have enthusiastically taken up 'economic' explanations of electoral outcomes. To the extent that material interests motivate political behaviour (and there are good reasons to think they do) then economic conditions ought to loom large in any account of electoral behaviour. For many writers this link between 'economics' and electoral politics is so self-evident as to warrant scant elaboration. For instance, in *The American Voter* Campbell et al

Date Submitted: 19 July 1993. Date Finally Accepted: 20 December 1993.

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We thank Larry Bartels, Clive Bean, Neal Beck, David Gow, John Londregan, Gillian Weiss and Guy Whitten for useful comments and discussion. Fred Greenstein provided a useful reference. Special mention goes to Australia's political leaders for confounding our best efforts to model election outcomes—under the right circumstances, 11% unemployment is no bar to re-election. All the same, errors and omissions remain our responsibility.

(1960, 381) note simply that 'economic interest has long been seen as a primary motive impelling political action.' MacKuen, Erikson and Stimson (1992, 597) concur: 'Economics moves political behaviour ... We know this to be true.' Keynesian economic policies ensure that governments are electorally accountable for economic conditions (Weatherford 1983). More generally, 'political theories as different in other respects as those of Madison and Marx' share the notion that 'political interests are shaped by economic and social circumstances' (Bartels 1990, 8). While V.O. Key cautioned against viewing voters as driven by the 'imperatives of economic status' (1966, 41), elsewhere he alluded to a strong link between an incumbent's economic performance and the electorate's 'vengeance and reward' (1964, 568; Fiorina 1981, chaps 1 and 2).

Some scholars find it sufficient to describe this link as 'accepted wisdom' (Weatherford 1978, 917) or even a 'cliché' (Wilkinson and Hart 1950, 331). 'Prosperity,' writes George Stigler (1973), 'is even more uncontroversial than motherhood,' expressing little surprise that Kramer (1971) found macro-level economic indicators excellent predictors of electoral outcomes. Lipset claims that 'reactions to the performance of the economy have become the major determinant of electoral outcomes the world over' (1985, 32). Others point to public opinion polls regularly finding economic problems to be among the 'most important problems facing the nation today' as evidence of the nexus between politics and economic interests (Kiewiet 1983, 1).<sup>1</sup> And for sheer bluntness we might recall the rallying cry of Bill Clinton's 1992 campaign for the United States presidency: 'It's the economy, stupid!'

Of course, the assumption underlying this line of inquiry is obvious—that voters prefer 'better times' to worse, *ceteris paribus*.<sup>2</sup> While clearly reductionist, this assumption is nonetheless a useful postulate in understanding electoral behaviour, especially in the aggregate-level, historically-oriented analyses of the type reported here. Furthermore, the policy implications raised by the salience of 'material' or 'economic' conditions are clear and direct—given the assumption that voters prefer 'good times' to 'bad', incumbent politicians seeking re-election will implement a policy mix aimed at securing or creating jobs and maintaining or increasing real wages (Nordhaus 1975; Tufte 1978; Beck 1982; Hibbs 1987a, 1987b; Alesina, Londregan and Rosenthal 1993).

A wealth of empirical support suggests that concerns about the economy are a persistent feature of Australian public opinion, and that these concerns have direct political implications. A widely used phrase for voters' economic concerns, 'the hip-pocket nerve', is variously attributed to Ben Chifley (Aitkin 1982; Mughan 1987a). Politicians of Chifley's day witnessed the Australian electorate behaving much like Key's (1964, 568) 'rational god of vengeance and reward'.<sup>3</sup> During the Great Depression all but one (state or federal) governments were defeated at the polls (Aitkin 1982, 227). Conventional wisdom attributes Menzies' near-defeat in 1961 to

<sup>1</sup> M.R. Kagay, 'As Candidates Hunt the Big Issue, Polls Can Give Them a Few Clues,' *New York Times*, 20 October 1991.

<sup>2</sup> Contrast claims as to the salience of 'post-materialist' demands in late capitalist regimes (eg, Inglehart 1977, 1990).

<sup>3</sup> As noted by Fiorina (1981, 26), while Key coined this phrase he was sceptical as to its applicability.

a credit squeeze, Labor's crushing 1975 defeat to high inflation and unemployment, and the coalition's 1983 defeat to poor economic conditions. Conversely, the continued electoral success of coalition governments between 1949 and 1972 is in no small part due to a 'long boom', characterised by low inflation and full employment, during much of that period.

These observations aside, survey evidence also suggests that even through the long boom years economic issues figured prominently among voters' concerns. In the late 1960s between 13 and 15% of electors deemed the economy one of the most important problems facing the federal government, a figure comparable with the proportions concerned with the Vietnam War and national defence more generally, the major issues of the day (Aitkin 1982). More recently, multivariate analyses find that perceptions of the national economy had substantial influences on 1987 and 1990 vote choices, net of partisan influences. McAllister (1990) suggests that these perceptions are at least as important as more general political (non-economic) issues.

The enduring importance of economic conditions has fairly clear implications for the analysis we present here. First, voter choices and politicians' strategic behaviour are potentially 'rationalised'. If voters really do prefer better times to worse, then explicit and testable consequences follow. When the economy fares poorly, support for incumbents ought to fall, and we can expect incumbents to take steps to remedy the situation. Moreover, prevailing economic conditions should provide information on which to base a reasonably accurate *ex ante* forecast of election outcomes.<sup>4</sup>

Research of this type in the Australian context includes efforts to model the effects of the economy on prime ministerial popularity (Layton 1992), government support (Douglas 1975, 1978; Schneider and Pommerehne 1980), and on aggregate election outcomes (Mughan 1987a). In general, support for Australian governments and prime ministers seems more sensitive to unemployment than inflation. Layton's (1992) work examines the effects of a large battery of economic indicators on month-to-month prime ministerial approval, contrasting short- and long-term effects, and the effects of absolute levels and changes in economic indicators. The actual level of unemployment has no effect on prime ministerial approval, while changes in both inflation and unemployment have short-term effects, with unemployment again having a larger effect. Layton also finds that real wage fluctuations have significant effects on prime ministerial approval, while less prominent economic indicators such as the exchange rate, the current account deficit, and interest rates have weaker effects.

These subtle distinctions are hard to observe with a small number of aggregate election outcomes. In an analysis of the 12 federal elections between 1958 and 1984, Mughan (1987a) found neither inflation nor unemployment to have statistically significant effects<sup>5</sup> on vote shares, though the regression coefficients of each variable were in the expected directions—inflation increased the coalition's vote share, while unemployment increased Labor's.

<sup>4</sup> Strong links between economic conditions and elections are repeatedly found in many democratic countries. Leading research on forecasting aggregate election outcomes includes work by Fair (1978), Hibbs (1987a; 1987b), and Lewis-Beck and Rice (1992). While much of this research has focused on the United States, work replicating many of the American findings in European settings can be found in Lewis-Beck (1988) and Norpoth et al (1991).

<sup>5</sup> Eg, confidence levels of .05 or better.

As Mughan's (1987a) results would suggest, there is good reason to be wary of aggregate-level, economics-based, election forecasts (see also Beck 1992a; Beck 1992b; Greene 1993). Nonetheless, 'economic models' often outperform other attempts to predict election outcomes with information available *prior* to the election (eg, Mughan 1987b). Models incorporating information about the candidates' popularity sometimes outperform more 'purely economic' models, but such information is typically not available when a forecast may be of most value, say, some six to 12 months prior to the election. For instance, the widely-known Fair (1978, 1988) model predicted a Bush victory in the 1992 United States presidential election. Only models incorporating Bush's low popularity-rating in election-season polls, some taken within two months of the election, correctly predicted Clinton's win (Campbell and Mann 1992).<sup>6</sup>

But in the Australian case, approval ratings of the party leaders close to the start of election campaigns are available only for the 1969 election onwards, yielding just 11 elections with which to disentangle the effects of the economy and leader popularity. The resulting imprecision of the regression estimates makes substantive interpretation and forecasting problematic.<sup>7</sup> Accordingly, we focus on 'economic' models of election outcomes.

### Aggregate Models of Australian Federal Elections

We estimate a number of linear regression models of Australian federal elections with aggregate data from the 19 House of Representatives elections from 1949 to 1993 (Table 1). We derive both *ex ante* and *ex post* forecasts of the 1993 election. In all reported models the dependent variable is the incumbent government's share of the aggregate two-party preferred (2PP) vote, and estimation is by ordinary least squares.<sup>8</sup>

Our choice of 2PP vote share as the dependent variable is, of course, subject to some limitations. As an indicator of whether a government is returned to office, 2PP vote share can only be a 'proxy' measure, since it is the major parties' proportions of *seats*, not votes, that determine who forms governments. But the translation of votes into seats is conditional on the vagaries of the underlying biases in the electoral system, which vary from election to election, and especially after electoral redistributions. Given our interest in the effects of the economy on government electoral performance, and the small data set we have assembled here, we decided it was better not to complicate the analysis by examining the effects of the economy

<sup>6</sup> R. Morin, 'Pollsters' "Nutty" Calculations Added Up on Day That Counted: In Academia, However, One Well-Known Political Crystal Ball Lies Shattered,' *Washington Post*, 5 November 1992, p. A37.

<sup>7</sup> Collinearity is the culprit here as well, in addition to small sample size—prime ministerial popularity covaries strongly with economic indicators (eg, Schneider and Pommerehne 1980; Layton 1992).

<sup>8</sup> Technically-minded readers will be aware of the assumptions underlying the linear regression model, the typical sorts of violations encountered in applied settings like this, and, of course, the difficulties of dealing with these violations given 18 or 19 observations. The small size of our data set renders tests of non-linearity in the regressors or non-normality in the errors fairly weak in terms of statistical power, such that discriminating among alternative models proves inconclusive. See also note 7. The linear, additive, regression models we estimate seem to stretch plausibility not too far, and are preferable to (unreported) non-parametric and non-linear alternatives we considered. Nonetheless, for completeness we also report non-parametric (bootstrapped) predictions and tail-area probabilities for the 1993 forecasts reported in Table 2.

on electoral support for governments, as aggregated through the electoral system.<sup>9</sup> We draw attention to other potential shortcomings of 2PP as they arise in the analysis which follows.

Table 1: Data Used in Modelling House of Representatives Elections, 1949–1993

Year	Month	Unemp	ΔUnemp	Inflat	ΔGDP (real)	Votes
1949	12	1.7 <sup>a</sup>	–	8.8	9.0 <sup>a</sup>	49.0
1951	4	1.1 <sup>b</sup>	–.6	16.7	7.9 <sup>b</sup>	50.7
1954	5	2.0 <sup>c</sup>	.9	.9	6.3 <sup>c</sup>	49.3
1955	12	1.5 <sup>d</sup>	–.5	3.5	4.0 <sup>d</sup>	54.2
1958	11	2.0 <sup>e</sup>	.5	1.6	7.1 <sup>e</sup>	54.1
1961	12	3.2 <sup>f</sup>	1.2	.7	1.3 <sup>f</sup>	49.5
1963	11	1.7 <sup>g</sup>	–1.5	.7	7.0 <sup>g</sup>	52.6
1966	11	1.6 <sup>h</sup>	–.1	2.6	6.2 <sup>h</sup>	56.9
1969	10	1.5	–.1	3.0	6.4 <sup>i</sup>	49.8
1972	12	2.5	1.0	4.7	3.9 <sup>j</sup>	47.3
1974	5	2.4	–.1	14.6	4.6 <sup>k</sup>	51.7
1975	12	4.6	2.2	14.4	2.8 <sup>l</sup>	44.3
1977	12	5.7	1.1	9.3	1.0 <sup>m</sup>	54.6
1980	10	5.9	.2	9.2	3.4 <sup>n</sup>	50.4
1983	3	9.9	4.0	11.4	–1.6 <sup>o</sup>	46.8
1984	12	8.5	–1.4	2.6	5.1 <sup>p</sup>	51.8
1987	7	7.8	–.7	8.2	2.5 <sup>q</sup>	50.8
1990	3	7.0	–.8	8.6	3.1 <sup>r</sup>	49.9
1993	3	11.1	4.1	.2	2.0	51.4

<sup>a</sup> 1949/50. <sup>b</sup> 1950/51. <sup>c</sup> 1953/54. <sup>d</sup> 1955/56. <sup>e</sup> 1958/59. <sup>f</sup> 1961/62. <sup>g</sup> 1963/64. <sup>h</sup> 1966/67. <sup>i</sup> 1968/69. <sup>j</sup> 1972/73. <sup>k</sup> 1973/74. <sup>l</sup> 1975/76. <sup>m</sup> 1977/78. <sup>n</sup> 1980/81. <sup>o</sup> 1982/83. <sup>p</sup> 1984/85. <sup>q</sup> 1986/87. <sup>r</sup> 1989/90.

Note: *Unemp* and *Inflat* data from Foster and Stewart (1991). Real GDP data from ABS (1992, Table 77), reported data in table are change over previous FY. *Votes* is 2PP vote for incumbent government, from APSA (1982), Newman (1988), and Newman and Korpas (1990), defining Labor as the incumbent in 1975. 'Data' for 1993 from published sources (eg, *The Economist*, etc).

Another issue concerns the interpretation of the statistical evidence presented below. We have a paltry number of elections available for analysis, and the standards of statistical significance prevalent in the 'large n' survey data context are arguably too onerous and perhaps even inapplicable here. We see no special reason to adhere to traditional (yet nonetheless arbitrary)  $p < .05$  levels of statistical significance in this context. Our tiny collection of data is not a 'sample' in the sense of being one of many possible realisations of a repeatable data generation process. We prefer not to interpret the regression estimates as characterising an objective feature of some hypothetical 'super-population' of (Australian?) elections. Rather, our interpretation of the parameter estimates and their standard errors reflects our uncertainty about the magnitude of the parameter estimates, conditional on our reasonably strong prior

<sup>9</sup> We elaborate some of the consequences of electoral biases in note 13 below. The hand-wringing in the previous footnote applies a fortiori if one were to attempt to estimate the effects of economic conditions on seat shares—no simple linear regression equation is likely to capture this relationship. Contrast Lewis-Beck and Rice (1992).

beliefs that economic conditions *ought* to strongly influence election outcomes. As a rule of thumb we interpret parameter estimates larger than their standard errors as non-zero. This rough-and-ready benchmark corresponds to a classical significance level of  $p=.17$  (one tailed, given our strong priors over the signs of the parameters), though, as will be seen below, we attach very little substantive or predictive import to estimates approaching this 'relaxed' level of statistical significance.<sup>10</sup>

## Results

Table 2 presents estimates of six different models of incumbent governments' 2PP vote shares in 19 Australian House of Representatives elections. Model 1 is a 'null model', simply setting an election prediction equal to the average of past election results, incorporating no information about current economic conditions. On average, Australian governments win 50.8% of the 2PP vote, and are thus generally returned to office.

Table 2: Australian House of Representatives Elections, 1949–1993

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>Parameter estimates:</i>						
Intercept	50.80 (.68)	51.32 (.70)	49.54 (1.30)	52.49 (1.01)	50.98 (1.58)	52.13 (2.10)
$\Delta$ Unemp	0 (-)	-.81 (.43)	0 (-)	-.77 (.41)	0 (-)	-.70 (.56)
$\Delta$ GDP (real)	0 (-)	0 (-)	.29 (.26)	0 (-)	.24 (.25)	.07 (.36)
Inflation	0 (-)	0 (-)	0 (-)	-.19 (.12)	-.19 (.13)	-.18 (.13)
<i>Goodness of Fit:</i>						
$\hat{\sigma}$	2.97	2.82	2.95	2.71	2.85	2.80
AIC	5.07	5.02	5.10	4.98	5.08	5.09
adj. $r^2$	—	.13	.01	.20	.08	.15
n	19	18	19	18	19	18
<i>Ex-ante prediction:</i>						
$\hat{y}_{93}$	50.76 (3.14)	46.19 (3.36)	49.99 (3.18)	47.61 (3.60)	51.43 (3.27)	47.61 (3.80)
prob [ $\hat{y}_{93} > 49$ ]	.71	.21	.62	.35	.77	.36
<i>Ex-post prediction:</i>						
$\hat{y}_{93}$	50.79 (3.05)	48.01 (3.28)	50.12 (3.09)	49.27 (3.25)	51.42 (3.11)	49.35 (3.38)
prob [ $\hat{y}_{93} > 49$ ]	.72	.38	.64	.53	.78	.54
Rank of 1993 influence statistic	—	1st	7th	1st	7th	2nd

Nb, standard errors in parentheses.

Model 2 introduces some economic information—the change in the (annual) unemployment rate since the last election (in this way the observation for the 1949

<sup>10</sup> A more explicit Bayesian approach would provide a more rigorous and formal basis for this apparently 'subjective' interpretation, and might even help bolster the confidence of the inferences we draw from these fairly weak data, say, via the incorporation of prior beliefs about the regression parameters (see Western and Jackman 1994).

election is lost). The parameter estimate for this variable is almost twice as large as its standard error, indicating that a percentage point inter-election increase in the unemployment rate causes an incumbent government to lose eight-tenths of a percentage point of 2PP vote share.

Model 3 posits GDP growth as the determinant of election outcomes and performs the worst out of all the models reported here—the parameter estimate on economic growth is only roughly the size of its standard error, and the estimate of the standard error of the residuals ( $r$ ) and the Akaike Information Criteria (AIC) are the largest reported.<sup>11</sup> Similarly, the adjusted  $r^2$  of .01 indicates that this is the worst fitting of the reported 'non-null' models.

Model 4 specifies change in unemployment and inflation as determinants of election outcomes. In general, this model performs reasonably well. Both unemployment and rising prices cost governments support, and the goodness-of-fit is the best of all the specifications reported here.

Model 5 ignores change in unemployment as a predictor of election outcomes. Election outcomes are hypothesised as a function of inflation and growth alone. Voters are presumed to prefer economic growth, though electorally penalise governments when prices rise. Both coefficients are only around the size of their standard errors, and the goodness-of-fit summaries are unimpressive.

Model 6 includes all three economic variables considered here. In this sense it demands the most of the 18 available data points, fitting four parameters, three of which measure economic conditions. Economic growth 'loses' the competition for statistical significance; its parameter estimate is swamped by its standard error. The estimated effects for change in unemployment and inflation are close to the estimates obtained in the other specifications, suggesting that these effects are fairly robust and of substantively consequential magnitudes, though, of course, not statistically significant at conventional levels.

### Forecasting the 1993 Result

How well do the models fare in predicting the 1993 result? Table 2 includes both *ex ante* and *ex post* predictions of the 1993 election result. The *ex post* predictions come simply from applying the parameter estimates in Table 2 to the 1993 data. The *ex ante* predictions are obtained by estimating the models *excluding* the 1993 data, and then applying the resulting parameter estimates to the 1993 data. Also reported are the standard errors of the predictions, and probabilities of Labor winning office given a particular prediction. The probability assessments are made noting that under uniform swing, the Australian Labor Party (ALP) needed 49% of the 2PP vote to retain office in 1993.<sup>12</sup> Details on the derivation of these quantities are in the Appendix.

Despite its low predictive and explanatory power, Model 5 gets the 1993 result 'right'. Both the *ex ante* and *ex post* predictions match the actual 1993 result (51.4% 2PP for the ALP). Partly by ignoring the 11.1% unemployment rate prevailing at

<sup>11</sup> The Akaike Information Criteria combines both goodness-of-fit and parsimony in assessing a model's overall fit, 'penalising' models for 'over-fitting'. See Akaike (1973).

<sup>12</sup> See Mackerras (1993). While there are many reasons to be dubious about uniform swing (see Jackman 1994) this figure provides a convenient benchmark with which to assess the model predictions.



the time of the election (an increase of 4.1 percentage points since the 1990 election), this model predicts that with economic growth at 2%, and inflation virtually non-existent, an incumbent Australian government can expect to get 51.4% of the 2PP vote. Even though the standard error associated with this prediction is rather large (over three percentage points), this still represents about an 80% or a four-to-one chance that Labor wins in 1993, *ex ante* or *ex post*.

When we consider models that assume voters to be sensitive to the unemployment rate the picture changes drastically. Model 2, which considers *only* the unemployment rate, generates a 46.19% *ex ante* 1993 prediction, some 5.2 percentage points off the actual result. This forecast error is greater than the standard error of the forecast, indicating that given Model 2, the 1993 result is truly 'surprising'. The influence of the 1993 result on Model 2 is evident in the difference between the *ex post* and *ex ante* predictions, and in the influence statistics reported in the last row of Table 2. Model 4 also includes the unemployment rate and fails to 'get it right' *ex ante*, and *ex post* predicts an extremely narrow Labor win. The story is roughly the same for Model 6. In short, given the past relationship between unemployment and election results, and the fact that unemployment had increased by around four percentage points since the 1990 election, Labor performed roughly 3.8 to 5.2 percentage points better than have otherwise expected.

### Discussion

To the extent that the Australian electorate collectively cares about unemployment then the 1993 election result is a major surprise. Historically, unemployment *does* matter to Australian voters (Douglas 1978; Schneider and Pommerehne 1980; Layton 1992), and the models that include unemployment are the better-fitting models we report. Yet the 1993 *ex ante* prediction errors for models incorporating information about unemployment levels (Models 2, 4, and 6) generate some of the largest forecast errors we observe.

Table 3 reports the *ex ante* 'one step ahead' forecast errors for the various models reported in Table 2. Some of this information is also presented graphically in Figure 1.<sup>13</sup>

These one step ahead forecast errors are generated by re-estimating the model with the data available *prior* to a given election year, and then generating an 'ex ante' forecast with the given election year's data. Earlier years generally yield more imprecise estimates (fewer 'prior' observations, and therefore fewer degrees of freedom), and for the first few observations this technique breaks down altogether (more variables than available observations). For this reason we report the one step ahead forecast errors for 1966 and after.

<sup>13</sup>

The solid lines in Figure 1 trace out points where the one step ahead forecast equals the actual result (ie, where the one step ahead forecast error is zero). This line would be at 45 degrees if the vertical and horizontal axes were identically scaled. The dotted lines divide the graphs into quadrants. Points in the minor-diagonal quadrants can be considered as 'misclassifications'. Elections lie in the north-west quadrant when the one step ahead forecast is for the government to 'lose' the election (ie, obtain less than 50% of the 2PP vote) but the actual result saw the government obtain greater than 50% of the 2PP vote. Vice-versa for the south-east quadrant. Elections lie in that quadrant when the model(s) erroneously predict a government 'win'. Of course, governments win and lose office with more or less than 50% of the 2PP vote, but for clarity and ease of presentation we have taken the 50% mark as a guide. This is equivalent to assuming electoral systems for the House of Representatives are 'unbiased': ie, 50% of the 2PP votes would yield 50% of the seats (see Jackman 1994). Contrast Table 2 where we take the (empirically derived) 49% mark as the critical 2PP vote share in assessing the 1993 predictions.

Table 3: 'One Step Ahead' Forecast Errors

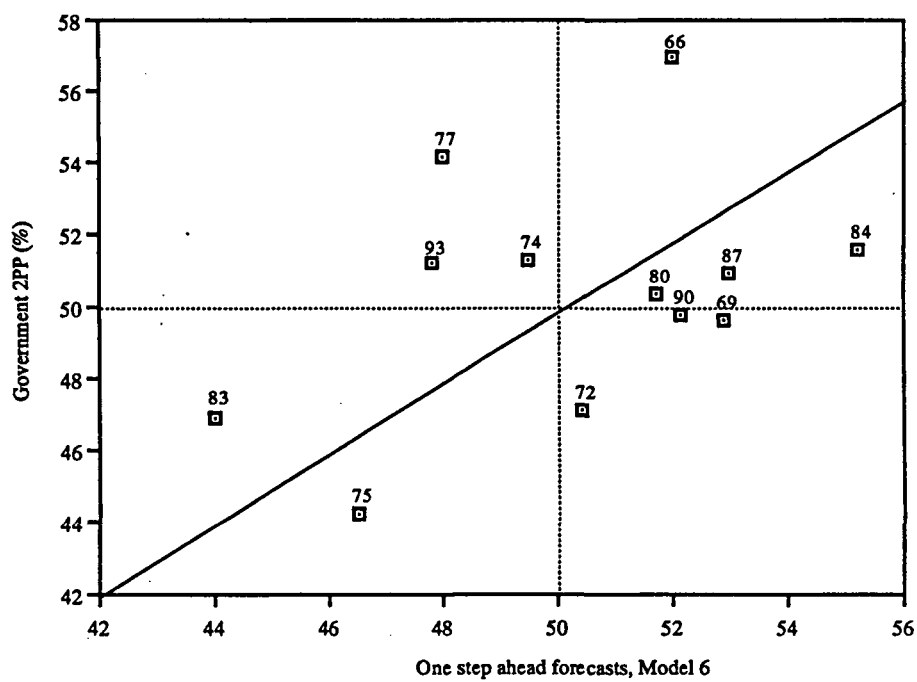
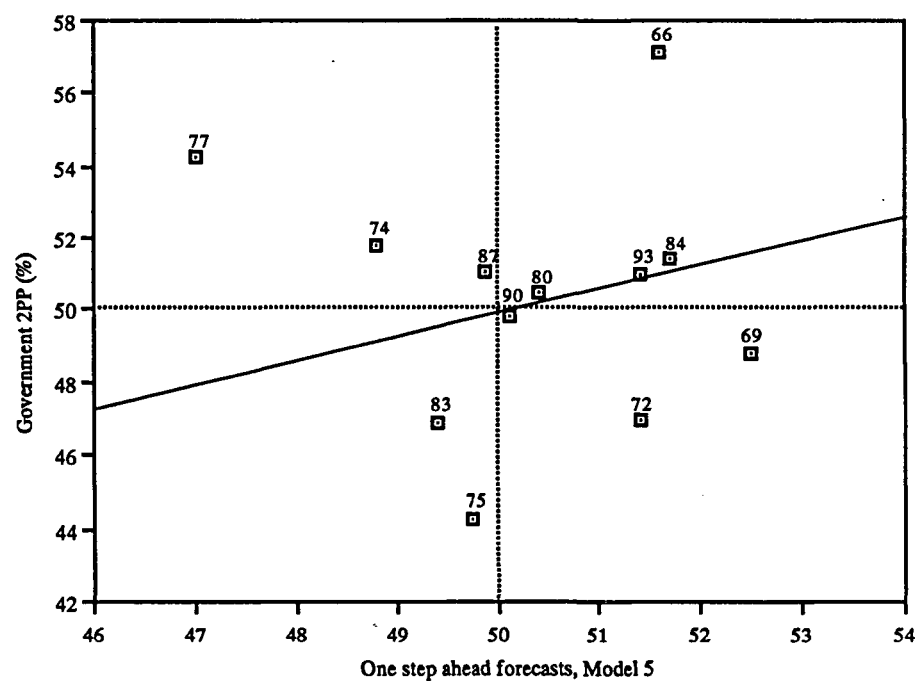
Year	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Median absolute	Range
1966	5.6	5.1	5.6	4.9	5.3	4.8	5.2	.7
1969	-2.2	-2.8	-2.2	2.9	-2.5	-3.1	2.6	.8
1972	-4.5	-3.7	-4.6	-3.3	-4.1	-3.2	3.9	1.4
1974	.4	-.2	.6	1.6	2.9	2.1	1.1	3.1
1975	-7.1	-3.9	-6.6	-2.3	-5.5	-2.3	4.7	4.8
1977	3.8	5.6	6.0	6.1	6.9	6.5	6.0	3.1
1980	-.7	-1.1	-.4	-.7	.1	-1.4	.7	1.4
1983	-4.2	2.7	3.2	3.0	-2.5	2.7	2.9	7.2
1984	1.1	-2.1	.9	-2.3	.1	-3.2	1.6	4.3
1987	0	-1.7	.7	-1.4	.9	-2.1	1.1	3.0
1990	-.9	-2.6	.5	-2.2	-.2	-2.4	1.5	2.4
1993	.6	5.2	1.4	3.8	0	3.8	2.6	5.2
Median absolute	1.6	2.7	1.8	2.6	2.5	2.9	2.6	

All the models we report here were 'surprised' by the 1966 election result; the coalition performed roughly five percentage points (in 2PP terms) better than would have been expected on the basis of the prevailing economic conditions. The coalition's 1972 defeat comes as something of a surprise as well; the coalition obtained around four percentage points less than expected. Both 1975 and 1977 have large one-step forecast errors also. The electoral backlash against Labor in 1975 was up to about five percentage points (in 2PP terms) greater than might have expected, given the economic conditions at that time. Similarly, the coalition enjoyed up to six percentage points more support in 1977 than expected, again given the state of the economy.

The magnitude of the 1993 'surprise' is evident for the models incorporating information about unemployment. The underestimates of Labor's 1993 2PP vote share generated by Models 2, 4, and 6 are equalled or surpassed only by the underestimates of the coalition's 2PP vote share in 1977 and 1966. Again, contrast the zero 1993 one-step ahead forecast error for Model 5, which ignores the unemployment level.

These historical comparisons help us to understand the 'exceptionalism' of the 1993 result in several ways. Rarely do governments perform *better* than expected on the basis of economic conditions. The 1993 result is clearly one of these special cases, on a par with election results from 1966 and 1977. What is distinct about the 1993 result is the 'asymmetry' in the model predictions. In the past, when the model predictions were wrong by large margins, *all* the models were wrong by a similar margin. For instance, inspection of Table 3 shows that the large forecast errors for 1966 lie within a range of .7 of a percentage point. For 1972 this range is 1.4 percentage points, and 3.1 percentage points for 1977. Even for 1975, all models (including the 'null' intercept-only model) have forecast errors within a 4.8 percentage point range. For 1993 the forecast errors of the reported models encompass five percentage points, a range surpassed only by the forecast errors for the 1983 election.

Figure 1: 'One Step Ahead' Forecast Errors



The asymmetry in the 1993 forecast errors is instructive, highlighting once again the exceptionalism of the election outcome. To reiterate, unemployment had increased 4.1 percentage points since the 1990 election, the largest inter-election increase in unemployment in our data. But only models that ignore this feature of the election accurately forecast its outcome. The four to five percentage point electoral deficit typically implied by such a disastrous increase in unemployment was, apparently, nullified.

### **Campaigns, Economics and Elections: Australian Exceptionalism?**

A particular view of campaigns and elections is embodied in our analysis and discussion. Campaigns and elections take place in particular economic and political contexts, constraining the strategies office-seeking politicians can pursue. But how binding is the constraint of economic context? Our estimates cast some light on this. By modelling election outcomes as a function of the state of the economy, our forecast errors can be interpreted as 'campaign' effects. In general the forecast errors of our models are small, with median absolute one-step-ahead forecast errors centered around 2.6 percentage points, suggesting a relatively small, though possibly decisive role for campaigns net of 'economic context'. But occasionally we observe much larger deviations from our model predictions: in 1966, 1977 and 1993 governments performed far better than expected on the basis of economic conditions.

Election forecasting is a risky business—there is only so much information to be extracted from the 18 or 19 data points available in the Australian context. The somewhat flimsy statistical evidence reported in Table 2 should make it clear that we have not 'explained' the 1993 election result. Far less have we somehow derived a model of (Australian) election outcomes. Too many competing hypotheses cannot be ruled out with our tiny data set. Is the relationship between economic conditions and election symmetric for Labor and coalition governments? Is this relationship constant over time? What is its functional form? Have voters become more or less tolerant of unemployment? Or inflation? Do voters weigh performance or promise, or some mixture of both? What is the time horizon with which voters make these assessments, if they make them at all?

These questions are ripe for pursuit in the Australian context, but are close to unanswerable with the tiny, aggregate-level data set we have assembled here. Only by relaxing conventional notions of statistical significance are we able to infer an aggregate-level relationship between economic conditions and Australian election outcomes.

Furthermore, these findings in the Australian data run counter to the strong relationship between economic conditions and election outcomes observed in other Western democracies. After finding weak economic effects in an analysis of 12 Australian federal elections, yet quite robust effects in the British case, Mughan (1987a) raised the possible exceptionalism of the Australian political economy. Perhaps Australian voters are less likely to hold the federal government accountable for economic conditions, perceiving (perhaps correctly) that Australia's economic

prosperity is highly subject to the vagaries of overseas markets<sup>14</sup> and natural disasters at home.

Alternatively, perhaps the institution of compulsory voting distorts the relationship between economic conditions and electoral support for the government. Given that even poorly-informed voters are required by law to vote in Australia, perhaps party identification tends to dominate vote choices more so than in other democracies, diminishing the effects of economic conditions on the vote. If the legal compulsion to vote was removed, perhaps a less partisan, more informed, and economically-sensitive electorate would help generate a higher correspondence between economic conditions and Australian election outcomes.<sup>15</sup> On the other hand, how well-informed does one have to be in order to be cognisant of economic downturn?<sup>16</sup>

In short, there is still much to be learnt about the links between economy and polity in Australia. The exceptionalism of the 1993 election underscores our continuing dearth of knowledge in this important sub-field. Mughan's 1987 conclusion seems especially pertinent in this regard:

Perhaps if economic misfortune accumulates and crosses some kind of critical threshold, this situation [weak links between economic conditions and electoral outcomes] will change and economic voting will emerge in Australia (1987a, 73).

Despite 11% unemployment and slow economic growth in 1993 we seem no closer to learning what this 'critical threshold' might be, if it exists at all, nor to rigorously characterising salient features of the political economy of Australia more generally.

## Appendix

Here we discuss more fully the derivation of the 1993 predictions. Each of the models we report can be written generically as

$$y = X\beta + e, \quad (1)$$

where  $y$  is a  $n$  by 1 vector of aggregate 2PP vote percentages for incumbent governments,  $X$  is a  $n$  by  $k$  matrix of explanatory variables,  $e$  is a  $n$  by 1 vector of disturbances, and  $\beta$  is a  $k$  by 1 vector of parameters to be estimated. The 1993 data,  $x_{93}$ , is a 1 by  $k$  row vector, and is contained in  $X$  in the case of ex post estimates and predictions, but not in the ex ante case (the notation and algebra is identical for both cases).

The 1993 point estimate is simply

$$\hat{y}_{93} = x_{93}\hat{\beta} \quad (2)$$

and its standard error is

$$\hat{\sigma}_{93} = \hat{\sigma}\sqrt{1 + x_{93}(X'X)^{-1}x_{93}'}, \quad (3)$$

where  $\hat{\sigma}$  is the estimate of the standard error of the regression, and  $X$  is the data used to estimate the regression. The standard errors of the ex ante predictions are larger than

<sup>14</sup> See Layton (1991), McLean (1989), and the cites therein.

<sup>15</sup> Mughan discounts this possibility after introducing levels of turnout as an additional regressor in models of economic effects on British election outcomes (1987a, 70-1). McAllister (1986) provides an interesting counter-factual analysis of the partisan advantages inherent in compulsory voting, showing the ALP to be the clear beneficiary.

<sup>16</sup> Contrast Walter's (1993) provocative claim as to a failure of 'political imagination' in the Australian 1993 federal election.

those for the ex post predictions, reflecting the added precision obtained by adding the 1993 observation to the 16 or 17 pre-1993 data points.

With a point estimate and its standard error hypothesis testing is possible. In this case an interesting hypothesis is whether the point estimate of Labor's 1993 votes share,  $\hat{y}_{93}$ , is greater than the minimum 2PP vote share needed for Labor to retain office. A rough and ready estimate of Labor's minimum 2PP aggregate vote share can be derived by assuming uniform swing and noting the number of seats Labor retains under different hypothetical Labor 2PP votes aggregate vote shares (Mackerras 1993). Given the distribution of Labor support at the 1990 election, and taking account of some electoral redistribution since 1990, Labor could have retained office with 49% of the 2PP vote, assuming (not uncontroversially) uniform swing.

Assuming the errors of our regression equation to be independently and identically normally distributed implies that the probability of a Labor win is

$$\text{prob}[\hat{y}_{93} > 49] = \int_{49}^{\infty} \phi\left(\frac{y_{93} - \hat{y}_{93}}{\hat{\sigma}_{93}}\right) dy_{93} \quad (4)$$

where  $\hat{y}_{93}$  and  $\hat{\sigma}_{93}$  are defined above, and  $\phi$  is the normal probability distribution function, whose domain is the range of possible values for  $\hat{y}_{93}$ .<sup>17</sup> Put simply, we can form a normal distribution about the point estimate of Labor's 1993 2PP vote share, with a standard deviation given by equation (3). The probability of a Labor win is just the mass of the resulting normal probability density above 49%. Operationally it is more convenient to note that

$$\frac{\hat{y}_{93} - y_0}{\hat{\sigma}_{93}} \sim t_{n-k}, \quad (5)$$

ie, the point estimate minus  $y_0$  (some hypothesised alternative to the point estimate, in this case, 49), divided by the point estimate's standard error has a student's  $t$  distribution with  $n-k$  degrees of freedom. Standard computer statistical packages can evaluate the cumulative distribution function of the  $t$  distribution given these quantities.

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<sup>17</sup> The integral in equation (4) implies that 2PP vote shares are unbounded from above. Since 2PP vote shares greater than 100% are impossible, clearly some alternative functional form (eg, taking the log of the odds of 2PP vote proportions as the dependent variable) and/or distributional assumption about the residuals would be more appropriate. Nonetheless, the simple linear regression framework we adopt here seems adequate over the observed range of 2PP vote shares in our data.

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