

Notes and Comments

The Electoral Consequences of Gender in Australia

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The increasing importance of women in politics is a common feature of almost all advanced industrial societies. Women have become increasingly active in most aspects of political life during the 1970s: as voters, as lobbyists and, perhaps most significantly of all, as candidates for election to public office. The traditional prejudice against women in public life, which assumes women to be less suited to politics by temperament and training, suggests that they could be expected to receive fewer votes than men in an election.¹ But it is unclear to what extent this prejudice has been mitigated by the broad changes which have taken place in women's roles in recent years. Can we still expect women candidates to fare less well than their male counterparts?

Such evidence as there is in Australia suggests that the parties are less likely to nominate women but that, once nominated, women candidates fare neither better nor worse than men. Sawyer concludes that 'the differential electoral fortunes of male and female candidates has always reflected the failure to pre-select women for safe and winnable seats, not any failure to win votes.'² In a similar vein Mackerras argues that 'the average performance of women is neither better nor worse than that of men. Women will be elected when parties select them for winnable seats.'³ Research in the United States and Britain also suggests that a candidate's sex does not matter: Darcy and Schramm found that sex did not matter in the United States, controlling for incumbency and party, and in an analysis of three British general elections, Hills concluded that 'the gender of a candidate makes only a very small difference to the voters.'⁴

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¹ See, for example, H. Erskine, 'The Polls: Women's Role', *Public Opinion Quarterly*, xxxv (1971), 275-90 and M. Ferrell, 'A Woman for President: Changing Responses, 1958-72', *Public Opinion Quarterly*, xxxviii (1974), 390-9. However, the contrary argument has also been made that women candidates should receive more votes because they receive more public attention. See Donald Stokes and Warren Miller, 'Party Government and the Saliency of Congress', *Public Opinion Quarterly*, xxxvi (1962), 431-6 and S. Tolchin and M. Tolchin, *Clout: Womanpower and Politics* (Englewood Cliffs, N.J.: Prentice-Hall, 1973).

² Marian Sawyer, 'Women and Women's Issues in the 1980 Federal Elections', *Politics*, xvi (1981), 243-9, p. 245.

³ Malcolm Mackerras, 'Do Women Candidates Lose Votes? Further Evidence', *Australian Quarterly*, lii (1980), 450-5, p. 454.

⁴ R. Darcy and Sarah Slavin Schramm, 'When Women Run Against Men', *Public Opinion Quarterly*, xli (1977), 1-12, p. 9; Jill Hills, 'Candidates: The Impact of Gender', *Parliamentary Affairs*, xxxiv (1981), 221-8, p. 227.

Historically, there has been substantial prejudice in Australia against women entering politics. In addition to the traditional view that politics is a male profession, Australians have inherited many social and political attitudes about women from their male-dominated convict and frontier pasts. As in the United States, there were few women in the early years of the settlement, and this trend continued on the nineteenth-century frontier, where men were forced to rely on one another in a comradeship sense of 'mateship'.⁵ The political legacy of these attitudes has been a paucity of women in Australian public life. Although women's suffrage was granted throughout the Australian Commonwealth as early as 1902, it was not until 1943 that a woman, Enid Lyons, was elected to the federal House of Representatives, and then she had inherited the seat (along with a large majority) from her husband, a former prime minister. Until 1980, when three women candidates were successful, there had never been more than two women in the House of Representatives, and more usually there was none.

The 1970s saw increasing pressure from women's organisations, such as the Women's Electoral Lobby founded in 1972, for the two major political parties to adopt more female election candidates and to take positive policies on women's issues. The Labor party has gone furthest to accommodate these interests, and nominated twenty-three women in the 1980 federal election, compared to four in the 1974 election. The Liberals have not increased their numbers of women candidates, and in 1980 they nominated six, the same number as in 1974. Women candidates have, however, been more numerous in the minor parties. For example, in 1980 the Australian Democrats, a centre group formed in the mid-1970s, nominated thirty-one women candidates, or around a quarter of their total.⁶

Australia thus represents an important case study for examining the electoral impact of gender during the 1970s. By applying multivariate techniques to data based on the 1974, 1977 and 1980 Australian federal elections, each three years apart, this note analyses the electoral consequences of a candidate's gender. Unlike previous work, the multivariate techniques we use permit us to control for a wide range of influences on the vote, and enable a more accurate estimate to be made of the electoral disadvantage of women candidates.

DATA, MEASUREMENT, METHOD

The data are based on the federal election results of 1974, 1977 and 1980.⁷ The dependent variable is the *first preference vote* for each candidate. This is used instead of the two-party preferred vote, which is often only an estimate of the vote since preferences are not allocated unless necessary to determine the winner. Moreover, the

⁵ For an examination of this thesis, see Russel Ward, *The Australian Legend* (Melbourne: Oxford University Press, 1977).

⁶ Sawyer, 'Women and Women's Issues', p. 243. See also Ian McAllister, 'The Australian Democrats: Protest Vote or Portent of Realignment?' *Politics*, xvii (1982), 68–72. On the recent history of the parties, see James Jupp, *Party Politics: Australia, 1966–81* (Sydney: George Allen and Unwin, 1982) and Kate White, 'Women and Party Politics in Australia', *Australian Quarterly*, LIII (1981), 20–39.

⁷ The source for 1974 was Malcolm Mackerras, *Elections 1975* (Sydney: Angus and Robertson, 1975); for 1977, Malcolm Mackerras, *Elections 1980* (Sydney: Angus and Robertson, 1980); and for 1980, Australian Electoral Office, *Analysis of the Final Count* (Canberra: Australian Government Printing Service, 1981).

two-party preferred vote almost invariably involves the two major-party candidates, minor-party candidates having already been eliminated.⁸ The main independent variable is *sex*, scored 1 for female, 0 for male. *Party* is measured by two dummy variables for the major parties, one giving Liberal-Country party candidates a score of 1 and all other candidates 0, and the other giving Labor party candidates a score of 1 and all others 0; minor party candidates are the omitted category. A series of additional independent variables are used to control for any potentially confounding factors, since there is a substantial literature to suggest that such things as position in the alphabet and on the ballot paper, and the number of candidates in the contest, all affect electoral outcomes.⁹

One important control that must be introduced into the analysis is the potential winnability of the seat for the individual woman candidate. It is alleged that the major parties select women candidates for the less winnable electorates, leaving the safe or marginal seats to what they perceive as the electorally more attractive men. One method of controlling for this is simply to examine electorates where the outcome appears to be in doubt.¹⁰ This, however, reduces the number of cases to a handful, and restricts the general conclusions that can be drawn. Another approach is to use swing, and to compare swings in electorates where women candidates stand with state swings and the total Australian swing. This approach, which is used by Sawyer,¹¹ poses two major problems. Firstly, the concept of swing is notoriously difficult to operationalize, especially in preferential voting systems.¹² Secondly, even when it can be taken as an accurate aggregate measure of electoral outcomes, it fails to control for the plethora of

⁸ The Australian electoral system is based on the alternative vote method in single-member constituencies. Electors express a preference for the candidates, and if no candidate receives an absolute majority of the votes on the first count (i.e., the first preference votes), then the candidate with the smallest number of votes is eliminated and his second preferences are distributed among the remaining candidates. This procedure continues until one candidate reaches a majority. The 'two-party preferred vote' refers to the preferences cast solely for the two main parties, Liberal-Country and Labor, after the preferences of all minor candidates have been distributed. Where only two candidates from the two major parties are left in the final count, the exact two-party preferred vote is known; when any candidates from other parties are included in the final count, then the two-party preferred vote can only be estimated. See Joan Rydon, 'The Electoral System' in Henry Mayer and Helen Nelson, eds, *Australian Politics: A Third Reader* (Melbourne: Cheshire, 1973).

⁹ These variables are defined as follows: *Name* reflects the ordinal position of the first two letters of the candidate's last name, scored so that the candidates in the first third of the alphabet get a score of approximately 1 and those in the last third get a score of approximately 0; *position on the ballot paper* (first, middle or last hence called FirstML) reflects the position of candidate's name on the actual ballot paper. *Number of candidates on the ballot* (LnNCands) is the natural logarithm of the number of candidates; it is included because the vote a candidate gets will depend on, *inter alia*, the number of candidates in the race. For a detailed analysis see Jonathan Kelley and Ian McAllister, 'Ballot Paper Cues and the Vote in Australia and Great Britain: Alphabetic Voting, Sex, and Title', *Public Opinion Quarterly*, forthcoming. We show there that the effect of name is entirely indirect through position on the ballot paper.

¹⁰ See, for example, Mackerras, 'Do Women Candidates Lose Votes?'

¹¹ Sawyer, 'Women and Women's Issues'.

¹² See, for example, Malcolm Mackerras, Campbell Sharman and Brian Austen, 'Discussion: Two-Party Preferred Vote, Pendulums, Swing, Uniformity and Patterns of Electoral Behaviour', *Politics*, xiii (1978), 334-44; and G. A. Snider, 'An Evaluation of Various Measures of Swing Voting in Australia, 1967-1975', *Politics*, xi (1976), 185-9.

influences that might determine the results.¹³ A final method is to use a measure such as the winning party's percentage point margin over the runner-up. Such a measure would, however, be problematic in the case of minor parties, and would, in addition, itself be affected by phenomena we are trying to estimate—the extent of electoral discrimination against women candidates.

For these reasons, we adopt an alternative measure to control for the safety or marginality of the seat for the major parties. It is based on the 1976 census characteristics of each electorate. In another paper, we analysed Australian federal electorates using techniques from factorial ecology and extracted two measures representing the dominant social structural dimensions of the electorates. *Socio-economic status* (SES) is measured by the proportion of the electorate in high ranking occupations, with advanced education, high incomes, and high mortgage payments. *Rural–urban differences* are measured by the proportion of the labour force who are farmers and fishermen, employers or self-employed, and the proportion of dwellings with three or more cars.¹⁴

The SES and rural–urban measures are the dominant characteristics of federal electorates that affect the vote and provide reliable and concise measures of their safety or marginality for a particular party. To illustrate this, Table 1 shows the electorates with the six highest and the six lowest scores for the two measures, along with an estimate of their safety or marginality for the sitting party. The results emphasize the importance of the measures in predicting party support in each electorate. For SES, all six of the highest scoring electorates are safe Liberal seats – that is, they would require a swing of 10 per cent or more against the sitting party to change hands – and five of the six lowest scoring electorates are safe Labor seats, the one exception being the seat of Oxley, held by the previous Labor leader Bill Hayden, which is categorized as 'fairly safe'. The rural–urban measure is of similar importance in predicting party support. These are the measures that we use to control for the potential winnability of the seats.

The exact models used in the analysis are described in the technical appendix.

RESULTS

The results of the analysis are presented in Table 2. In estimating the percentage point difference in the vote caused by women candidates, we present the figures first without controlling for any other factors whatsoever (row 1) and then progressively include a range of variables to control for other potential influences on the vote. Row 2 controls for the candidate's name, the number of other candidates in the contest, and the

¹³ In addition to this, we would argue that Sawyer's results are biased for two reasons. Firstly, only one election is analysed, thereby causing problems with sample size because of the very small number of women candidates. In addition she examines only Labor candidates, ignoring both Liberal-Country party and minor party candidates. Secondly, the analysis does not control for the characteristics of the electorates for which women gain nomination, in spite of the fact (which she herself concedes) that women generally tend to be nominated for less winnable seats than men.

¹⁴ Each measure was operationalized by creating a composite variable from the individual variables using factor score coefficients from the factor analysis, and then scaled on a metric running from 0 to 100. See Ian McAllister and Jonathan Kelley, 'Contextual Characteristics of Australian Federal Electorates', *Australia and New Zealand Journal of Sociology* (forthcoming), Table 3.

TABLE I *Federal Electorate Characteristics and Party Support**

	Socio-economic Status			Rural-Urban		
	Electorate	Score	Electorate Type†	Electorate	Score	Electorate Type†
Six highest scoring electorates	1. Bradfield NSW	100	Safe Liberal	Maranoa QLD	100	Safe NCP
	2. Kooyong NSW	82	Safe Liberal	Wakefield SA	95	Safe Liberal
	3. Higgins VIC	78	Safe Liberal	Mallee VIC	93	Safe NCP
	4. Ryan QLD	74	Safe Liberal	Barker SA	87	Safe Liberal
	5. North Sydney NSW	73	Safe Liberal	Hume NSW	86	Fairly Safe NCP
	6. Curtin WA	70	Safe Liberal	Murray VIC	83	Safe NCP
Six lowest scoring electorates	1. Oxley QLD	7	Fairly Safe Labor	Chifley NSW	4	Safe Labor
	2. Port Adelaide SA	5	Safe Labor	Kingsford-Smith NSW	3	Safe Labor
	3. Reid NSW	5	Safe Labor	Melbourne Ports VIC	3	Marginal Labor
	4. Prospect NSW	4	Safe Labor	Graynder NSW	2	Safe Labor
	5. Gellibrand VIC	4	Safe Labor	Melbourne VIC	2	Safe Labor
	6. Chifley NSW	0	Safe Labor	Sydney NSW	0	Safe Labor

* Based on 1976 census results, allocated by federal electorate; see text for details.

† Taken from Mackerras (1980), judged by 1977 federal election results. An electorate is considered safe if a swing of more than 10.0 per cent is needed for it to change party; greater than 6.0 per cent but less than 10.0 per cent for fairly safe; and less than 5.0 per cent for marginality.

Source: Computer tape of 1976 census, allocated by federal electoral division, supplied by the Australian Bureau of Statistics.

TABLE 2 *Estimated Percentage Point Advantage (+) or Disadvantage (-) Faced by Women Candidates**

Variables controlled	All three elections	1974	1977	1980
1. No controls	-11‡	-19‡	-8‡	-8‡
2. Controlling for name, number of candidates, position on the ballot	-10‡	-17‡	-6§	-8‡
3. Controlling for (2) and major party nomination	-4‡	-5‡	-2‡‡	-3‡
4. Controlling for (2), (3) and the characteristics of the electorate	-3‡	-5‡	-2	-2‡‡
5. Standard deviation of the estimate in line 4 (N of women candidates/N of total candidates†)	±0.8 (171/ 1,505)	±1.4 (47/ 498)	±1.3 (49/ 505)	±1.1 (75/ 502)

* Expressed as a percentage of the total first preference vote. Estimated from an OLS regression; see text for details of variables and technical appendix for details of the model.

† Estimates for the three elections separately were extracted from a pooled regression using interaction terms, hence the effective number of cases is larger than shown. See technical appendix for details.

‡ p < 0.01 § p < 0.05 ‡‡ p < 0.10

candidate's position on the ballot, since there are slight differences between male and female candidates. Row 3 adds in major-party nomination, which women are much less likely to receive. Finally, row 4 controls for the characteristics of the seat, since women candidates tend to get less winnable seats than men.

To take a concrete example, for all three elections combined (column 1 of the table), male candidates received an average of 26 per cent of the first preference vote while women candidates received only 15 per cent. The difference between these, 11 per cent, reflects the average disadvantage that women candidates faced; that figure is given in row 1. But this comes about in part because women candidates were slightly more likely to run in contests where there were many candidates to split the vote and, for reasons that are obscure, slightly less likely to come first on the ballot paper. Even after adjusting statistically for these differences, the figure in row 2 indicates that women candidates still faced a disadvantage of 10 per cent. But that ignores their main disadvantage: many more women than men run as minor-party or independent candidates because the major parties are reluctant to nominate women. Adjusting for that important difference, women candidates still faced a disadvantage of some 4 per cent (row 3). That is in part because even when they are nominated, it is sometimes for less winnable constituencies. Adjusting for that, row 4 shows that a small but statistically significant disadvantage of 3 per cent still remains. There is of course some uncertainty about this since, even combining three elections, the sample size is still small and some random variation can be expected. Taking this into account, the true disadvantage might well be 0.8 per cent higher or lower (row 5) than we have estimated, that is to say somewhere between roughly 2 and 4 per cent.

The effect of gender on the vote for all candidates in all three elections combined (first column) is the most reliable estimate, since it is based on the largest sample. It reveals that a woman candidate can expect to lose 11 per cent of the first preference vote in total (row 1). Once other factors have been controlled for, the net disadvantage attributable solely to gender is 3 per cent (row 4).¹⁵ This is, we believe, the most accurate estimate heretofore available of the electoral disadvantage women candidates face from the voters, as opposed to the problems they face in gaining nomination from major parties and in winnable seats. Significantly, in some sense the largest disadvantage women face is not from the voters, but from the party selection committees. Of the total disadvantage of 11 per cent, not getting a major-party nomination accounts for 6 per cent, twice the disadvantage accounted for by the voters.¹⁶ The results also show that while women who manage to secure a major-party nomination tend to get

¹⁵ This will hold, of course, only so long as the model is specified correctly and the indicators used are perfect measures. While it is unlikely that an empirical analysis will completely fulfil these two conditions, we believe that inaccuracies caused by variables omitted from the analysis or by measurement error will be small, and will not affect the interpretation of our findings.

¹⁶ The figures of Table 2 permit straightforward decomposition of the total disadvantage faced by women candidates. The total electoral disadvantage for woman candidates is 11 per cent (row 1). Of this 11 per cent is due to name, number of candidates, and position on the ballot (11 in row 1 minus 10 in row 2), 6 per cent to the fact that women tended not to receive a major-party nomination in that election (10 in row 2 minus 4 in row 3), and 1 per cent to characteristics of the seat (4 in row 3 minus 3 in row 4). For technical details, see Duane F. Alwin and Robert M. Hauser, 'The Decomposition of Effects in Path Analysis', *American Sociological Review*, xI (1975), 37-47.

TABLE 3 *Estimated Percentage Point Advantage (+) or Disadvantage (-) Faced by Women Candidates, by Party**

Variables Controlled	Panel A: Labor candidates only				Panel B: Liberal-Country candidates only				Panel C: Minor-party candidates only			
	All three elections	1974	1977	1980	All three elections	1974	1977	1980	All three elections	1974	1977	1980
1. No controls	-8†	-5	-9†	-6‡	-17†	-23†	-7	-13†	0	0	0	1
2. Controlling for name, number of candidates, position on ballot	-8†	-7	-8‡	-7‡	-16†	-21†	-5	-13†	1	0	1	0
3. Controlling for (2) and characteristics of the electorate	-4†	-2	-5‡	-3§	-14†	-19†	-9§	-8§	0	0	1	0
4. Standard deviation of the estimate in line 3 (N of women candidates/ N of total candidates)	±1.4 (41/377)	±3.8 (4/128)	±2.1 (14/124)	±1.7 (23/125)	±3.1 (15/436)	±4.5 (6/159)	±6.7 (3/137)	±5.2 (6/140)	±0.4 (115/692)	±0.6 (28/211)	±0.7 (29/244)	±0.6 (46/237)

† p < 0.01 ‡ p < 0.05 § p < 0.10

Notes

* See footnotes of Table 2 for details.

less favourable electorates,¹⁷ this accounts for only 1 per cent of the disadvantage. This suggests that the tendency for parties to nominate women and other newcomers only for the less desirable seats is only a small part of the electoral disadvantage that women face.

The data also permit us to examine changes over time, comparing the disadvantage women candidates faced in the 1974, 1977 and 1980 elections (columns 2–4). This, however, is purchased at the cost of greater statistical uncertainty due to the small numbers of candidates involved, particularly women candidates, and is reflected in the generally lower levels of statistical significance. With this caveat in mind, it does appear that the net disadvantage of a woman candidate (row 4) has declined, from 5 per cent in 1974 to 2 per cent in 1980, suggesting that the voters are becoming less prejudiced against women standing for public office. Once again, the type of seat women were nominated to contest accounted for only a small part of the disadvantage they faced.

Since party nomination plays such an important role, and the voters who support each party are so different, it is useful to examine the candidates of each party separately. This is done in Table 3, which reports analyses confined to Labor party candidates (Panel A), Liberal and Country party candidates (Panel B), and minor-party and independent candidates (Panel C). Looking at the three elections combined, we find that once a woman has passed the hurdle of winning a nomination from one or other of the major parties, the disadvantage remains, but is appreciably greater for a Liberal than a Labor woman candidate and non-existent for women minor-party candidates. A liberal can expect to lose 14 per cent of the first preference vote, controlling for all other things, while her Labor competitor would expect to lose only 4 per cent and minor-party candidates lose nothing (row 3). Why Liberal women candidates face a greater disadvantage from the electors than Labor women is unclear. It could be argued that Labor voters are ideologically more predisposed to give women equal political opportunities. However, it is also true that Labor voters possess less education than Liberal voters, and since lack of education is a major source of prejudice against women, it could be argued that for that reason alone Labor voters would be less favourable to women. It is perhaps interesting that Labor women tend to suffer a disadvantage from the type of electorates they are nominated for – that accounts for a 4 per cent disadvantage – which is exactly equal to the disadvantage they face from the voters. It is not clear why women minor-party candidates face no disadvantage, but it may be that, since they have no chance of being elected anyway, voters pay little attention to their personal characteristics or alleged fitness for office. Voters are therefore attracted to them entirely on symbolic grounds, in protest or in support of a particular cause.

The results point to a reduction in the disadvantages faced by Liberal women candidates in more recent elections. The disadvantage they face drops from 19 points in 1974 (Table 3, row 3) to 8 in 1980, a drop of more than half. There is, however, no such trend for Labor women candidates. The disadvantage they face has not declined although it is still much smaller than the disadvantage faced by Liberals, representing a

¹⁷ For example, women who secure Labor party nomination get, on the average, electorates with a socio-economic status 9 points higher (on a scale of 0 to 100) than male candidates; that is of course a disadvantage since high status electorates are harder for Labor candidates to win. Conversely, women who get Liberal or Country party nominations get electorates which average 3 points lower in socio-economic status than male candidates; that is of course a disadvantage for them.

continuing disadvantage of between 2 and 5 per cent. It seems that the broad social trends that favour women's participation in politics and the economy show few signs of entirely eliminating the disadvantage faced by women candidates. The overall decline noted earlier in Table 2 appears to occur only for Liberal-Country party candidates.

CONCLUSION

In conclusion, we have found that women candidates in the three federal elections covered here have lost votes, net of a wide range of factors, including whether or not they were nominated by a major party or were selected for a potentially winnable seat. Although the effects were not large, it shows that there *is* an electoral disadvantage involved in a woman standing for elected office in Australia, which in marginal electorates could have crucial consequences. Technically our estimates are, we believe, substantially superior to any previously available. But the possibility of error of course remains and, in that case, our estimates may *either* understate *or* overstate the disadvantage faced by women candidates.¹⁸

Although women candidates do seem to face some disadvantage from the electorate, we also found that the discrimination against women within the party selection committees was generally greater than that found within the electorate; the major hurdle for a woman candidate remains not in persuading the electors to vote for her in preference to a man, but in persuading her party political peers to select her in preference to a man. Once securing major party backing a woman candidate, especially a Labor candidate, could expect her vote to be only slightly, albeit significantly, lower than the vote for comparable male candidates.

TECHNICAL APPENDIX

This appendix reports the exact regression models underlying the results reported in the text. The equations are estimated by ordinary least squares regression with, in most cases, various dummy variables and multiplicative interaction terms which make the regressions mathematically equivalent to analysis of covariance. Subject to the usual assumptions of linearity and correct specification of variables and models, these OLS estimates are the best linear unbiased estimates. The use of dummy variables and interaction terms is covered in many standard texts.¹⁹ The variables used are defined in the text.

¹⁸ For example, if local party organizations generally offer less wholehearted support for women candidates than for male candidates, and if that has a substantial effect on the vote, then our estimates would *overstate* the disadvantage women candidates face from the electorate (since the organizational disadvantage would mistakenly be attributed to gender). But on the other hand, if for example, women candidates are generally better qualified than male candidates, and if the quality of the candidate has a substantial effect on the vote, then our estimates *understate* the disadvantages faced by women candidates (since the advantage due to quality would mistakenly be deducted from the disadvantage due to gender). We doubt that biases due to such factors – which might well cancel each other out – would be large enough to affect our conclusions.

¹⁹ See, for example, E.A. Hanushek and J.E. Jackson, *Statistical Methods for Social Scientists* (New York: Academic Press, 1977).

Let us begin with the figures in the first column of Table 2. The first figure in row 1 (namely, -11) is simply the difference between the vote obtained, on the average, by women candidates and the vote obtained by male candidates in all three elections combined. We then adjust for differences in number of candidates in the election,²⁰ position of the candidate's name in the alphabet, and position on the ballot paper (top, middle or bottom) estimated from equation 1:

$$\text{Vote} = a + b_1 \text{ Female} + b_2 \text{ Name} + b_3 \text{ LnNCands} + b_4 \text{ FirstML}. \quad (1)$$

The figure in row 2 (-10), showing the effect of the candidate's gender net of these factors, is given the metric partial regression coefficient of gender, b_1 .

Row 3 adjusts for the fact that women candidates are less likely than men to obtain major party nomination. It is estimated by adding to Equation (1) dummy variables indicating whether the candidate obtained nomination from the Labor party, or from the Liberal or Country Party (independents and those obtaining nomination from the DLP or other minor parties are the omitted category):

$$\text{Vote} = a + b_1 \text{ Female} + \dots (\text{as Equation 1}) \dots + b_5 \text{ Labor} + b_6 \text{ Liberal}. \quad (2)$$

The coefficient b_1 in Equation (2) is the figure shown in the table (-4).

Finally, row 4 adjusts for the fact that even when the women candidates get major party nominations, they tend to get somewhat less winnable seats than men. The key characteristics of a seat are its socio-economic status and its degree of rurality, so there are two things to adjust for. But making the adjustment is not entirely straightforward since what is a relatively good seat for a Labor candidate is, of course, a bad one for a Liberal candidate (in technical terms, there is an interaction between the characteristic of the seat and the party of the candidate). Using standard techniques, we obtain what is in effect an analysis of covariance by including in the model of Equation (2) a further term for the socio-economic status of the constituency, a product term (socio-economic status of constituency * Labor party nomination), and a second product term (socio-economic status of constituency * Liberal or Country party nomination):

$$\begin{aligned} \text{Vote} = & a + b_1 \text{ Female} + \dots + b_6 \text{ Liberal} \\ & + b_7 \text{ SES} + b_8 \text{ SES} * \text{Lab} + b_9 \text{ SES} * \text{Liberal} \\ & + b_{10} \text{ Rural} + b_{11} \text{ Rural} * \text{Lab} + b_{12} \text{ Rural} * \text{Liberal}. \end{aligned} \quad (3)$$

Then the coefficient b_7 reflects the effect of socio-economic status for minor party candidates, ($b_7 + b_8$) its effect for Labor candidates, and ($b_6 + b_9$) for Liberal and Country Party candidates. Similar adjustments are made simultaneously for rurality (b_{10} , b_{11} , and b_{12}). The effect of a candidate's gender, controlling for all of these various factors, is b_1 in Equation (3) (namely, -3- in row 4 of the table). This equation explains a substantial 83 per cent of the variance in vote.

These figures reflect the experience of the entire population of candidates in these three elections, and hence are not subject to sampling error in the sense a sample survey is. But they are none the less subject to uncertainty due to the modest number of candidates (especially women) in the population, random variations in the characteristics of the candidates and their opponents, the effect of events in the

²⁰ The natural log of the number of candidates (LnNCands) is used instead of the number itself, since each additional candidate can be expected to split the vote proportionately rather than subtract a constant percentage from it, which implies a log model. The choice makes no practical difference for the issues at hand.

campaigns, and a host of other essentially random things. As is conventional in analyses of small populations (e.g., in the analysis of nation-states), we have therefore presented statistical tests based on the usual assumption of random sampling to give some approximate measure of the uncertainty due to the unmeasured effects of these other factors. These suggest that there is less than one chance in 100 that the apparent disadvantages faced by women candidates are in fact due to chance. More concretely, row 5 of the table gives the standard error of estimate (plus or minus 0.8) which suggests that the true effect of gender is very likely to be somewhere between a 2 per cent disadvantage ($-3 + 0.8 = -2.2$) and a 4 per cent disadvantage ($-3 - 0.8 = -3.8$).

The second, third and fourth columns of Table 2 give similar estimates for each election separately. It would have been possible to re-estimate the models of Equations (1) to (3) for each election separately (in effect allowing for all possible interactions between the independent variables and election year). Indeed, doing so gives results essentially identical to those reported in the table. But, by dividing the sample into three, that would greatly increase the risk of random error. It is preferable instead to utilize the data more efficiently by adopting analysis of covariance procedures which allow for some, but not all possible interactions. We accordingly assumed that the relation of position of the candidate's name in the alphabet, number of candidates in the contest, position of candidate's name on the ballot paper, socioeconomic status of the constituency, and rurality of the constituency was the same in all three elections and for them estimated a single effect pooled over all three elections. These are stable features of politics, not things that would change appreciably within the nine year span we are dealing with. The effect of a candidate's gender and swings for, or against, the major parties are however things that can be expected to vary. To estimate the effects of row 2, we accordingly modified Equation (1) by adding dummy variables for each election and interaction variables of the form (election * Female):

$$\begin{aligned} \text{Vote} = & a + b_1 \text{ Female} + b_2 \text{ Name} + b_3 \text{ LnNCands} + b_4 \text{ FirstML} \\ & + b_{13} \text{ Elect77} + b_{14} \text{ Elect80} \\ & + b_{15} \text{ Elect 77 * Female} + b_{16} \text{ Elect80 * Female.} \end{aligned} \quad (1A)$$

This is in effect an analysis of covariance. In this equation, the effect of gender in 1974 is b_1 (namely, -17), its effect in 1977 is $(b_1 + b_{15})$, and its effect in 1980 is $(b_1 + b_{16})$.

The adjustments for major party nomination in row 3 of the table build similarly on Equation (2). We add the same terms to Equation (2) plus four interaction terms which adjust for the swing for or against Labor and the swing for or against the Liberal/Country party alliance in each election:

$$\begin{aligned} \text{Vote} = & a + b_1 \text{ Female} + \dots + b_4 \text{ FirstML} \\ & + b_5 \text{ Labor} + b_6 \text{ Liberal} \\ & + b_{13} \text{ Elect77} + \dots + b_{16} \text{ Elect80 * Female} \\ & + b_{17} \text{ Elect77 * Labor} + b_{18} \text{ Elect77 * Liberal} \\ & + b_{19} \text{ Elect80 * Labor} + b_{20} \text{ Elect80 * Liberal.} \end{aligned} \quad (2A)$$

The effect of gender in each of the elections is found in the same way as for Equation (1A).

Similarly, the adjustments for the characteristics of the constituency are estimated by adding the same set of terms to Equation (3):

$$\begin{aligned} \text{Vote} = & a + b_1 \text{ Female} + \dots + b_6 \text{ Liberal} \\ & + b_7 \text{ SES} \dots + b_{12} \text{ Rural} * \text{ Liberal} \\ & + b_{13} \text{ Elect77} + \dots + b_{20} \text{ Elect80} * \text{ Liberal}. \end{aligned} \quad (3A)$$

Finally, because of the vast importance of party nomination and the very real possibility that the Labor electorate would react to women candidates differently than normally Liberal or Country party voters would, we re-estimated the model for each party separately (Table 3). This allows for all possible interactions of the independent variables with party. The results for all three elections combined (columns 1, 5 and 7) are from equations (1), (2) and (3) except that the terms involving party perforce drop out (namely, Labor and Liberal in Equation (2) and those plus the interaction terms such as SES * Labor in Equation (3)). They must be treated with considerable care since sample size leaves something to be desired because we have split the sample into three. The results for each election separately are from Equations (1A), (2A) and (3A) except that all terms involving party drop out again. These results must be treated with great care due to the small sample size.

The correlations, means, standard deviations and regression coefficients for these models are too extensive to present here but are available on request from the authors.