Between sense and nonsense

The predictive power of the electoral pendulum

The electoral pendulum performs no better than an alternative method, the cube law, in predicting the overall result of an election. In its common, alternative use as tool to predict individual seat changes, it is successful less than half of the time.

Discussion paper

Bill Browne

May 2022

ABOUT THE AUSTRALIA INSTITUTE

The Australia Institute is an independent public policy think tank based in Canberra. It is funded by donations from philanthropic trusts and individuals and commissioned research. We barrack for ideas, not political parties or candidates. Since its launch in 1994, the Institute has carried out highly influential research on a broad range of economic, social and environmental issues.

OUR PHILOSOPHY

As we begin the 21st century, new dilemmas confront our society and our planet. Unprecedented levels of consumption co-exist with extreme poverty. Through new technology we are more connected than we have ever been, yet civic engagement is declining. Environmental neglect continues despite heightened ecological awareness. A better balance is urgently needed.

The Australia Institute's directors, staff and supporters represent a broad range of views and priorities. What unites us is a belief that through a combination of research and creativity we can promote new solutions and ways of thinking.

OUR PURPOSE – 'RESEARCH THAT MATTERS'

The Institute publishes research that contributes to a more just, sustainable and peaceful society. Our goal is to gather, interpret and communicate evidence in order to both diagnose the problems we face and propose new solutions to tackle them.

The Institute is wholly independent and not affiliated with any other organisation. Donations to its Research Fund are tax deductible for the donor. Anyone wishing to donate can do so via the website at https://www.tai.org.au or by calling the Institute on 02 6130 0530. Our secure and user-friendly website allows donors to make either one-off or regular monthly donations and we encourage everyone who can to donate in this way as it assists our research in the most significant manner.

Summary

Since its introduction in the early 1970s, the Mackerras pendulum has been used to predict overall election outcomes by looking at what would happen if the overall swing towards one or the other major party were uniform across every seat.

The stated expectation for the pendulum is that seats that are predicted to fall that do not fall should be roughly balanced out by seats that are not predicted to fall, that do fall. In other words, the pendulum's prediction is only the net seats gained or lost by the major parties – not which particular seats will fall or not fall.

The electoral pendulum has served as a "good guide" (predicting within two of the correct net seat change) in two of the last seven elections. An alternative tool, the "cube law", predicts within two of the correct net seat change in five of the last seven elections.

Net seat changes themselves become less useful for predicting the final government after an election when crossbenchers are elected that may hold the balance of power. The pendulum could predict the net seat change between Labor and the Coalition and yet fail to predict which party will form government.

The pendulum is also used as a tool by political parties to direct resources to marginal seats, by political commentators to assess the prospects of particular electorates and by politicians to assess their electoral fortunes. This may not be its intended use, but the pendulum is probably used for this purpose at least as often as it is used for its original purpose.

Used in this way, it is more likely to be wrong than right, predicting less than half of major party–major party seat changes in the last four elections, and a third or less of all seat changes in the past three elections.

The electoral pendulum is a tool for predicting net seat changes, but it does not make notably better predictions than other tools make. It also tempts commentators and politicians to misuse it to predict results in individual seats, where its predictions are more likely to be wrong than right.

Figure: Seat changes predicted by pendulum
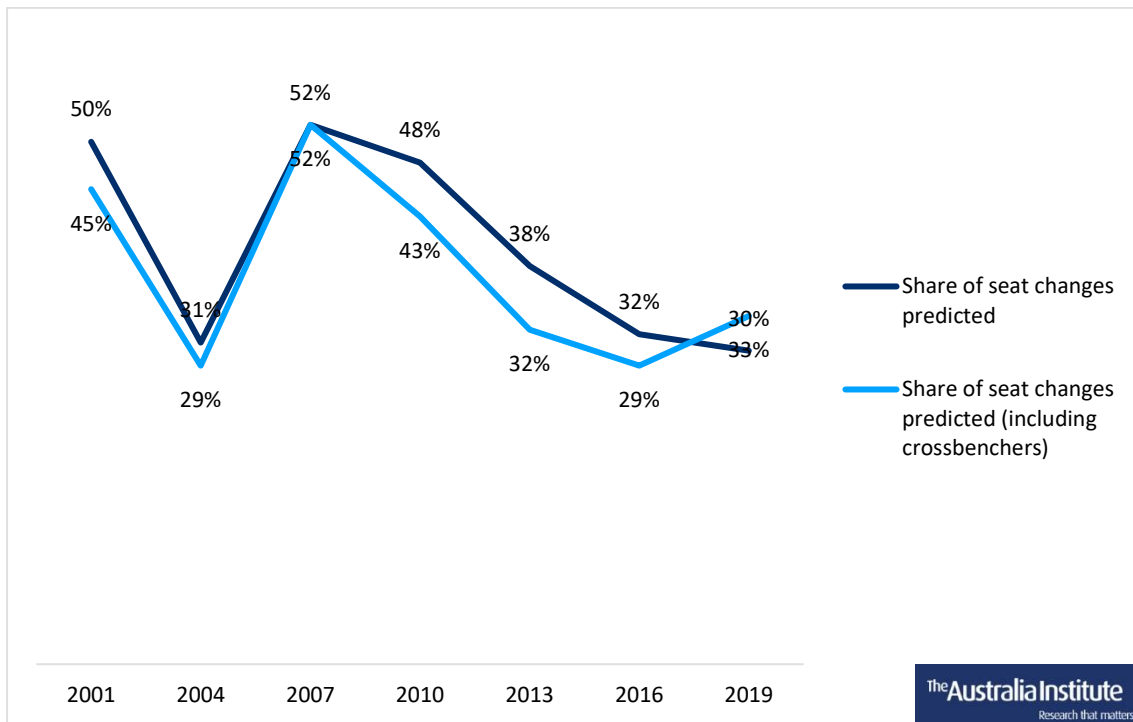
Introduction

> The pendulum of the mind alternates between sense and nonsense, not between right and wrong.
>
> – Carl Jung (attributed)

Since the early 1970s, Australian political scientists have used the concept of the "pendulum" to predict the results of lower house elections. The pendulum, as developed by Malcolm Mackerras, presents all seats on two-party preferred (2PP) terms: from those with the highest 2PP result for Labor to those with the highest 2PP result for the Coalition.

The 2PP margin by which the median seat is held is the "uniform swing" required for the government to change: if every seat in the country experienced that 2PP swing, the opposition would hold more seats than the government.

The pendulum is not expected to exactly predict the individual seats that will fall.[1] Even when Mackerras first wrote publicly about the pendulum he re-assessed seats based on local factors and "a well-informed sense of 1972's electoral breeze". In addition, since 1972 most elections have seen seats gained and lost by both sides; if the pendulum works, it works because "errors" cancel one another out.[2]

Another complication of the pendulum is that it does not capture the decisions of members of Parliament (MPs) after an election. The pendulum showed 76 MPs on the right and 74 MPs on the left after the 2010 election,[3] but that did not stop Rob Oakeshott and Tony Windsor from supporting the minority Gillard Government.

This report asks whether the pendulum is a "good guide" for election watchers and, if so, is it understood and used appropriately by the public.

---

[1] Malcolm Mackerras writes: "I do not claim that swings are uniform. What I claim is that deviations from uniformity can be relied upon to cancel out." Mackerras (n.d.) *Mackerras Pendulums*, https://www.malcolmmackerras.com/mackerras-pendulums

[2] Goot (2016) *The Transformation of Australian Electoral Analysis: The Two-Party Preferred Vote - Origins, Impacts, and Critics*, pp. 69, 74–75, 76, https://www.researchgate.net/publication/299382053_The_Transformation_of_Australian_Electoral_Analysis_The_Two-Party_Preferred_Vote_-_Origins_Impacts_and_Critics

[3] Simms & Wanna (2012) *Julia 2010: The caretaker election*, pp. 333–334

Net seat gains/losses

The 1990 evaluation of the pendulum by British psephologist David Butler described it as a "good guide" in elections where its prediction was within two of the actual result, and otherwise where its prediction was four or more out (there were no elections where the pendulum was three seats out in the period Butler considered).[4]

In our evaluation of the seven House of Representatives elections 2001–2019, the pendulum has an "error" of 1 in two elections, an error of 3 in three elections and an error of 5 in two elections, as shown in Figure 1. By Butler's measure, that makes the pendulum a "good guide" in only two of the last seven elections.

Error in this context is measured by comparing the net seat gain/loss "predicted" by the pendulum (i.e. if the election's two-party preferred swing had been uniform) with the actual net seat gain/loss. A negative error indicates that the pendulum overestimated the number of seats gained by the beneficiary of the swing; a positive error indicates that the pendulum underestimated the number of seats gained by the beneficiary of the swing.

For example, in 2001 the Coalition government was expected to win an additional 8 seats on a swing of 2.0 percentage points. It only won 5 seats, a pendulum error of -3.

Figure 1: Pendulum error, net seat gains/losses

---
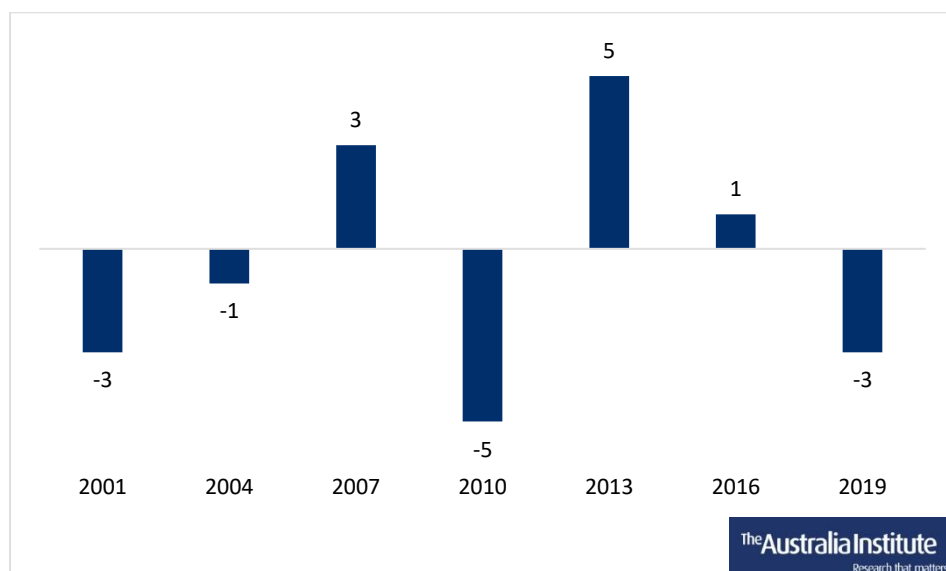
[4] Goot (2016) *The Transformation of Australian Electoral Analysis: The Two-Party Preferred Vote - Origins, Impacts, and Critics*, p. 76

Table 1: Seats changing hands, net (major parties only)

|	2001	2004	2007	2010	2013	2016	2019
Swing	2.0 LNP	1.8 LNP	5.4 ALP	2.6 LNP	3.6 LNP	3.1 ALP	1.2 LNP
Successful predictions							
Major party seats that fell to swing recipient, within the swing	5	4	16	12	8	6	3
Unsuccessful predictions							
Seats that fell to swing recipient, outside of swing	1	4	9	4	9	7	2
Seats that fell to other major	1	4	2	2		1	1
Seats that didn't fall to swing recipient, within the swing	3	1	4	7	4	5	4
Total unsuccessful	*5*	*9*	*15*	*13*	*13*	*13*	*7*
Results							
Actual net change	5	4	23	14	17	12	4
Predicted net change	8	5	20	19	12	11	7
Error	**-3**	**-1**	**3**	**-5**	**5**	**1**	**-3**

Individual seat gains/losses

Although the pendulum is built around the conceit of how individual seats are affected by the uniform swing, it does not predict the results in individual seats. Psephologists, including its creator Malcolm Mackerras, have not claimed that it is able to do so.[5]

However, how the pendulum is theoretically used and how it is used in practice are very different. We have heard from backbenchers' offices that they take seriously the position of their own electorate on the pendulum. This is dangerous, since our research shows that in most elections the pendulum predicts well under half of all seat changes; with the growing minor party and independent vote, the predictive power appears to have declined in recent years.

We can assess the pendulum on its own terms: comparing only Labor–Coalition seat changes. By this measure, the pendulum's accuracy has declined from 2007, where it predicted 52% of seat changes, to 2019, where it predicted 30% of seat changes (the navy line in Figure 2).

Looking only at seat changes between the major parties neglects the important role that independents and minor parties play, both in deciding which party forms government and in affecting the tenor and policy of that government. When seats gained or lost by crossbenchers are included, the pendulum's accuracy in predicting individual seat changes has declined from 52% in 2007 to 33% in 2019 (the cyan line in Figure 2).

Figure 2: Seat changes predicted by pendulum

---
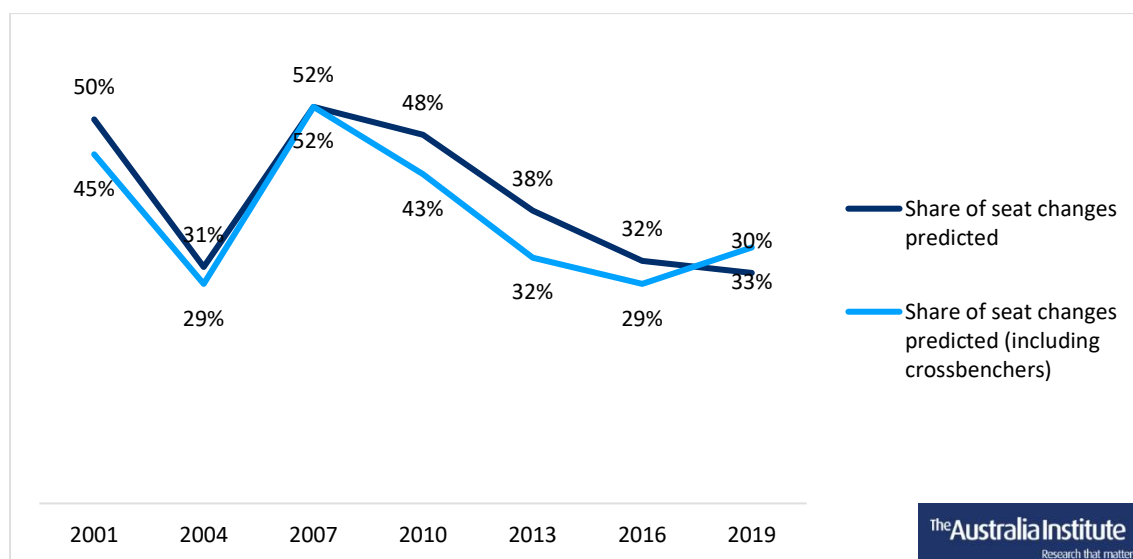
[5] See for example Goot (2016) *The Transformation of Australian Electoral Analysis: The Two-Party Preferred Vote - Origins, Impacts, and Critics*

In all cases, we have considered the Coalition parties (Liberal, National, Country Liberal and Liberal National) as a single party; a Liberal seat falling to the Nationals is not counted as a seat change in Table 2. The WA Nationals are assessed according to whether they sat in the Coalition party room at the time.

One question is whether to use the 2CP or 2PP margin for crossbencher-held seats. For example, in 2004 the seat of Cunningham was held by the Greens. Antony Green's 2004 pendulum places Cunningham in a separate "Independents/Greens" column), with a 2.2% margin vs Labor. Malcolm Mackerras' pendulum places it in the Labor column, with a 10.7% margin vs the Coalition. There was a 1.8% uniform swing to the Coalition, yet Cunningham fell to Labor, meaning that Green's pendulum had an error but Mackerras' pendulum did not.

This scenario occurred with Wentworth in the 2019 election: independent Kerryn Phelps held the seat on a margin of 1.1% vs the Coalition, but the 2PP margin was 10.8% for the Coalition vs Labor. The seat fell to the Coalition, "predicted" by the 1.2% national swing, but there was no change in who held the seat in 2PP terms.

Cunningham was counted as an unsuccessful prediction and Wentworth a successful one.

Figure 3: Pendulum performance in predicting individual seat changes
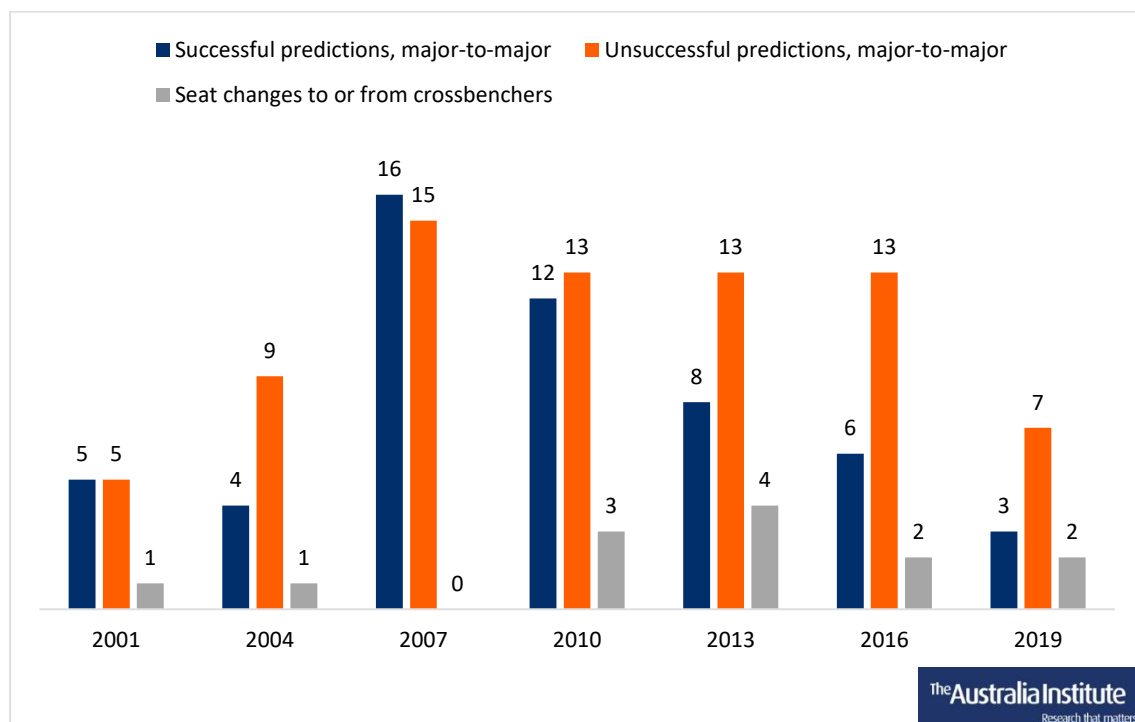
Table 2: All seats changing hands

	2001	2004	2007	2010	2013	2016	2019
Swing	2.0 LNP	1.8 LNP	5.4 ALP	2.6 LNP	3.6 LNP	3.1 ALP	1.2 LNP
Successful predictions							
Major party seats that fell to swing recipient, within the swing	5	4	16	12	8	6	3
Crossbencher seats lost to swing recipient, within the swing							1
Total successful	*5*	*4*	*16*	*12*	*8*	*6*	*4*
Unsuccessful predictions							
Seats that fell to swing recipient, outside of swing	1	4	9	4	9	7	2
Seats that fell to other major	1	4	2	2		1	1
Seats that didn't fall to swing recipient, within the swing	3	1	4	7	4	5	4
Crossbencher seats lost to swing recipient, outside of swing					2		
Swing recipient seats that fell to crossbencher	1			1	2		1
Seats won by crossbench from other major or from crossbench by other major		1		2		2	
Total unsuccessful	*6*	*10*	*15*	*16*	*17*	*15*	*8*
Results							
Share of seat changes predicted (major-major only)	50%	31%	52%	48%	38%	32%	30%
Share of seat changes predicted (including crossbench)	45%	29%	52%	43%	32%	29%	33%

The Australia Institute
Research that matters.

The cube law alternative

In 1906, James Parker Smith observed that the "cube law" could reasonably accurately predict the number of seats won by major parties in first-past-the-post elections.[6] Political scientist Joan Rydon in 1962 observed that the cube law also applied to Australia's two-party-preferred elections, predicting at least some election results as accurately as looking at the uniform swing.[7] The implication is that electorate 2PP results are normally distributed around the national 2PP result.[8]

A simple adaptation of the rule to the current system (described in Appendix 2) shows that it comes respectably close to the actual result for Labor and the Coalition in most elections; in some, it outperforms the pendulum. Figure 4 shows the pendulum and the cube law's errors in the past seven elections regarding the net change in seats between the major parties. The cube law's error was 2 in five of the seven elections, whereas the pendulum's error is sometimes less (as low as 1) or much more (as high as 5).

Figure 4: Error, cube law vs pendulum uniform swing
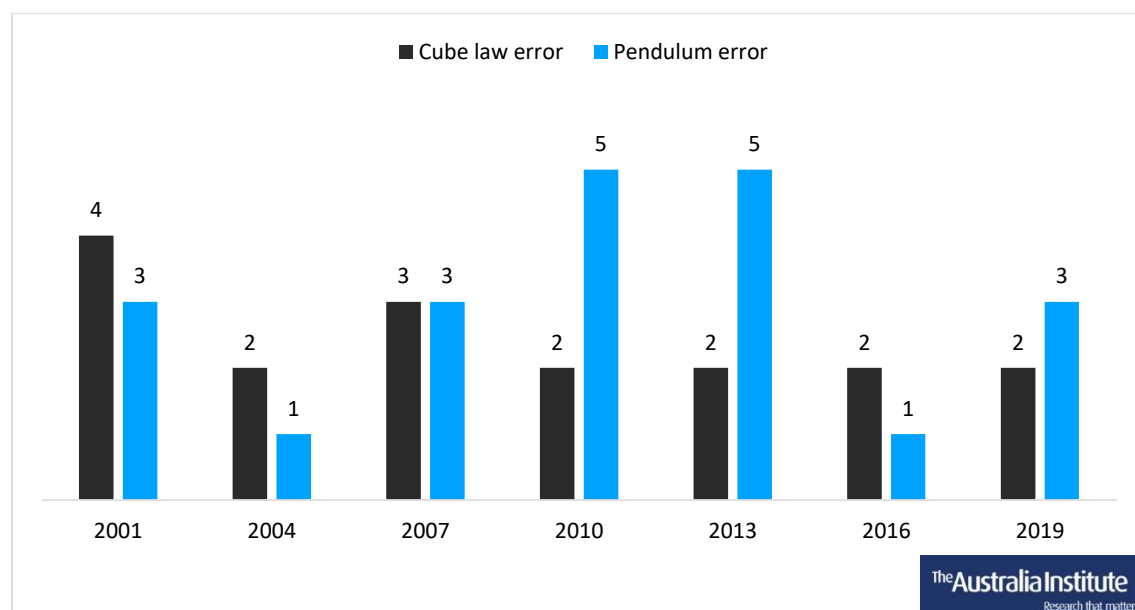
Note: Only the size of the error is shown here, not the direction. For example, an error of -3 (overestimate) and an error of +3 (underestimate) are both shown as 3.

---

[6] Maloney, Pearson, & Pickering (2003) *Behind the Cube Rule: Implications of, and Evidence against a Fractal Electoral Geography*, https://doi.org/10.1068/a35184

[7] Rydon (1962) *Some Aspects of Voting in the 1961 Elections*, https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-8497.1962.tb01033.x

[8] Maloney et al. (2003) *Behind the Cube Rule: Implications of, and Evidence against a Fractal Electoral Geography*

It is worth noting that the cube law appears to have done better over the period of elections examined in this paper (2001–2019) than it does over all federal elections since 1949. It may be that different periods favour different models.

Further tweaks to the cube law, such as applying it state-by-state instead of nationwide or finding a better way of handling seats that are not conventional Labor–Coalition contests may make it an even better predictor.[9]

However, the point is not to propose a replacement to the pendulum, but just to show that the pendulum does not have a special predictive power that other models lack.

Table 3: Cube law predictions, past seven elections

Election	Pool	LNP 2PP	Cube prediction		Actual		Cube error		Pendulum error
			LNP	ALP	LNP	ALP	LNP	ALP	
2019	145	51.5%	79	66	77	68	2	-2	-3
2016	145	50.4%	74	71	76	69	-2	2	-1
2013	145	53.5%	88	57	89	55	-2	2	5
2010	148	49.9%	74	74	72	72	1	2	-5
2007	147	47.3%	62	85	65	83	-3	2	3
2004	147	52.7%	85	62	86	60	-2	2	-1
2001	147	51.0%	78	69	81	65	-4	4	-3

The Australia Institute
Research that matters.

Source: Australia Institute calculations. Two-party preferred figures and seat totals in the previous election (from which the "pool" is calculated) are from: AEC (2019) *House of Representatives - Two party preferred results 1949 - present*, https://aec.gov.au/Elections/Federal_Elections/tpp-results.htm; Barber (2017) *Federal election results 1901–2016*, https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1617/FederalElectionResults

---

[9] Applying the cube law state-by-state, instead of for the nation, tends to improve its accuracy. However, it consistently over-predicts the seats won by the party receiving fewer votes in two- and three-seat territories (i.e. the NT and ACT).

The next election

The AEC's redistributions mean the Coalition has lost the seat of Stirling in Western Australia and a nominally Labor electorate, Hawke, has been created in Victoria,[10] for a total of 75 (notionally) Coalition and 69 (notionally) Labor seats.

Six MPs were elected as crossbenchers: Adam Bandt, Rebekha Sharkie, Bob Katter, Helen Haines, Andrew Wilkie and Zali Steggall. Craig Kelly joined the crossbench in February 2021. Depending on how the election goes, any or all of these crossbenchers could play a role in deciding the next government of Australia.

Assuming that all crossbenchers hold their seats, notable milestones would be:

- The Coalition picks up one seat from Labor, securing majority government.
- Labor picks up three seats from the Coalition and is tied at 72 seats each.
- Labor picks up seven seats from the Coalition, securing majority government.

Going by Antony Green's electoral pendulum (but counting Hughes as an independent-held seat),[11] the Coalition would need a 0.2 percentage point uniform swing to secure majority government (LNP 2PP 51.7%). Labor would need a 1.4 percentage point uniform swing to tie with the Coalition on 72 seats (LNP 2PP 50.1%), or a 3.3 percentage point swing to secure majority government (ALP 2PP 51.8%).

The cube law suggests that the Coalition would secure majority government even with a 0.5 percentage point swing in the 2PP to Labor (LNP 2PP 51.0%). The major parties would be expected to tie on a 1.5 percentage point swing (LNP 2PP 50.0%) and Labor to win a majority on a 2.5 percentage point swing (ALP 2PP 51.0%).

Figure 5 demonstrates the relationship between these two models.

---

[10] Green (2021) *2022 Federal Electoral Pendulum*, https://antonygreen.com.au/2022-federal-electoral-pendulum/

[11] Antony Green counts Hughes as a Liberal-held seat based on the 2019 election, whereas the following analysis treats it as an independent-held seat; Green (2021) *2022 Federal Electoral Pendulum*

Figure 5: Expected Labor seats, next federal election
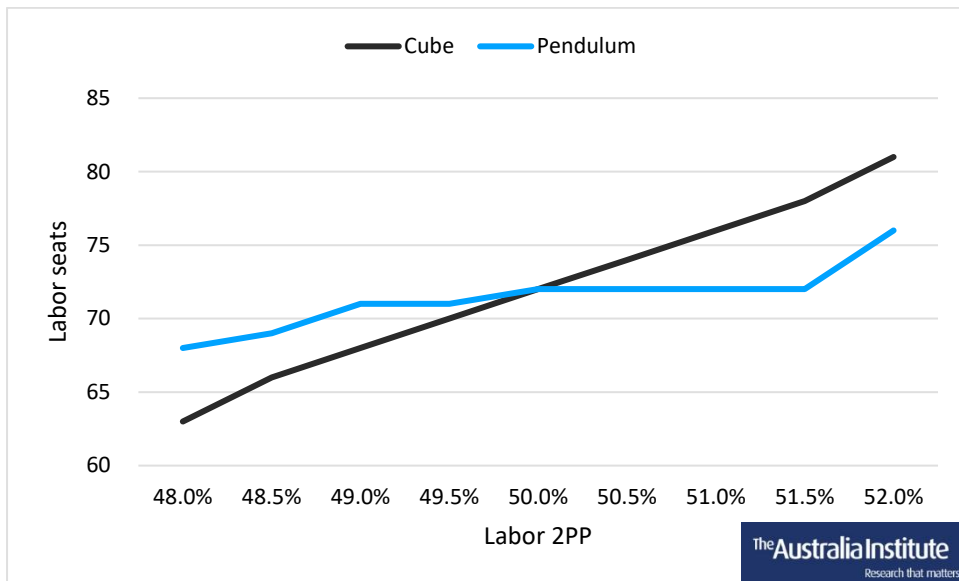
Conclusion

The paradox of the pendulum is that if it points campaigners to seats that they target, so that they win more seats than could be predicted from a national swing, then the pendulum does not work; but if it does work—as it did this time and it has, by and large, before—then we may have to accept the conclusion that when everyone targets the same seats, neither one side nor the other is likely to prevail. … It is the possibility that one side can prevail in the marginals, defying the pendulum, which keeps campaigners enthralled and pollsters floundering in their wake.

– Murray Goot, "National polls, marginal seats and campaign effects"[12]

The pendulum continues to serve its original intended purpose: to roughly predict the net seat gain/loss between Labor and the Coalition given a certain national swing in the two-party preferred vote. However, it is no better at this than other predictive methods like the cube law.

With a growing minor party and independent vote, the usefulness of this prediction – however accurate – is reduced. Two governments in recent years have been minority governments: the Gillard–Rudd government between 2010 and 2013, and the Morrison Government between its loss in the Wentworth by-election and the 2019 election. Tony Windsor and Rob Oakeshott prove that where political scientists place an electorate on the pendulum does not control which major party crossbenchers will support.

Whatever the warnings of psephologists, in practice the pendulum is often applied to predict individual seat results. Here, it proves to be a poor measure – typically predicting fewer than half of all seat changes, and predicting fewer seat changes successfully over time.

---

[12] In-line citations removed. From Gauja, Chen, Curtin and Pietsch (2018) *Double Disillusion*, http://press-files.anu.edu.au/downloads/press/n4149/html/ch05.xhtml?referer=&page=11

Appendix 1: Seat changes

Election	Pendulum source
2001	Malcolm Farnsworth[13]
2004	ABC News[14]
2007	ABC News[15]
2010	ABC News[16]
2013	ABC News[17]
2016	ABC News[18]
2019	ABC News[19]

Each ABC News pendulum was checked against the pendulum that Malcolm Mackerras prepared for that election.[20]

There is often a difference of 0.1 percentage point between seat figures for the ABC News pendulum and the Mackerras pendulum, although in almost all cases both pendulums showed the same predicted result (i.e., the differences rarely made a difference to whether a seat was in or outside the national swing).[21]

---

[13] Farnsworth (2001) *2001 Federal Election Pendulum*, https://australianpolitics.com/2001/10/10/2001-federal-election-pendulum.html

[14] Green (2004) *2004 Federal Election Electoral Pendulum*, https://www.abc.net.au/elections/federal/2004/guide/pendulumindex.htm

[15] Green (2007) *Pendulum - Federal Election 2007*, https://www.abc.net.au/elections/federal/2007/guide/pendulumindex.htm

[16] Green (2010) *Pendulum - 2010 Federal Election*, https://www.abc.net.au/elections/federal/2010/guide/pendulum.htm

[17] AEAA Green (2013) *2013 Federal Election Pendulum*, https://www.abc.net.au/news/2013-01-30/2013-federal-election-pendulum/9390132

[18] AEAA Green (2016) *2016 Federal Election Pendulum (Update)*, https://www.abc.net.au/news/2016-03-13/2016-federal-election-pendulum-update/9388748

[19] Green (2018) *2018 Federal Redistribution*, https://www.abc.net.au/news/elections/federal-redistribution-2018/

[20] Mackerras (2004) *Coalition could gain control of Senate*, Australian Financial Review; (2010) *Mackerras Pendulum National*, http://resources.news.com.au/files/2010/02/05/1225827/021564-aus-politics-file-mackerras-pendulum-national.pdf; (2013) *Mackerras Pendulum Federal*, http://resources.news.com.au/files/2013/08/04/1226691/084114-aus-web-130805-federal-pendulum.pdf; UNSW@ADFA (2007) *The Mackerras Pendulum*, https://web.archive.org/web/20070903154457/http://www.unsw.adfa.edu.au/hass/staff/pendulum_new.pdf; pendulums for other years kindly provided to the author by Mr Mackerras.

[21] An exception is Wentworth in the 2019 federal election, which ABC News identifies as having a "margin" of 1.1 percent, within the uniform swing of 1.2 percent, and Mackerras identifies as having a "buffer" of 1.3 percent, outside the uniform swing.

The divergence comes about because the two pendulums measure subtly different things. The ABC News pendulum shows the "margin" by which the seat is held: the difference between the winning party's two-party preferred result and 50.0%. The Mackerras pendulum shows the "swing required to lose" (also called the "buffer"), the difference between the winning party's two-party preferred result and 49.9%.

Mackerras' approach has been consistent since he first outlined it in *Australian General Elections* in early 1972:

> Once we have the two-party preferred vote at each election in each constituency it is then simple to work out two further things. The first is the swing required for a party to lose a seat it won in 1969. This is the change in either party's share of the two-party preferred vote required to reduce the 1969 winning party's share to 49.9% and to increase the 1969 losing party's share to 50.1%.[22]

Mackerras used the example of Cook (a southern Sydney seat) which was then marginal, now safely held by Scott Morrison. The actual 1969 two-party preferred votes were:

Dobie (Liberal)	26,861	52.81%
Mallam (Labor)	24,001	47.19%

Based on these figures, Mackerras concluded: "Swing required to lose 2.9% (actual). Classification: Marginal Liberal".[23] By contrast, the ABC News pendulum would have listed the margin in Cook as 2.8 percent given the same figures.

The term "margin" is also used differently, with ABC News using it to describe the gap between the winning party's 2PP and 50.0% and Mackerras using it to describe the gap between the winning party's 2PP and the losing party's 2PP, i.e., twice the ABC News figure. This paper uses the ABC News definition which has now become standard Australian practice. Mackerras argues that his use of the word "margin" is to be preferred because it aligns with international practice. He gives the example of a 52–48 division of the vote. Outside of Australia, an analyst would say: "the margin was 4 per cent".

---

[22] Mackerras (1972) *Australian General Elections*, p. 4, Angus and Robertson
[23] Mackerras (1972) *Australian General Elections*, p. 49

2001 ELECTION

Swing: 2.0 to Coalition[24]

Table 4: 2001 Labor seats

Seat	Margin	State	Original party	Within uniform swing?	Change?
Dickson	0.1%	QLD	Labor	Yes	Yes (Coalition)
Bass	0.1%	TAS	Labor	Yes	
Ryan	0.2%	QLD	Labor	Yes	Yes (Coalition)
Canning	0.4%	WA	Labor	Yes	Yes (Coalition)
MacMillan	0.6%	VIC	Labor	Yes	
Dobell	1.5%	NSW	Labor	Yes	Yes (Coalition)
Macarthur	1.7%	NSW	Labor	Yes	Yes (Coalition)
Kingston	1.9%	SA	Labor	Yes	
Parramatta	2.5%	NSW	Labor*		Yes (Coalition)

Note: Parramatta was a Coalition-held seat that was notionally Labor after redistributions.

Table 5: 2001 Coalition seats

Seat	Margin	State	Original party	Within uniform swing?	Change?
Ballarat	2.8%	VIC	Liberal		Yes (Labor)
New England	13.7%	NSW	National		Yes (Independent)

Other notable electorates

The sitting member for Kennedy, Bob Katter, left the National Party in 2001 and ran as an independent, winning re-election.

The division of Farrer, held by a National, was won by a Liberal.

---

[24] Throughout the appendix, the following was used to calculate 2PP swings: AEC (2019) *House of Representatives - Two party preferred results 1949 - present*, https://aec.gov.au/Elections/Federal_Elections/tpp-results.htm

2004 ELECTION

Swing: 1.8 to Coalition

Table 6: 2004 Labor relevant seats

Seat	Margin	State	Original party	Within uniform swing?	Change?
Brisbane	1.0%	QLD	Labor	Yes	
Kingston	1.3%	SA	Labor	Yes	Yes (Coalition)
Wakefield	1.3%	SA	Labor*	Yes	Yes (Coalition)
Stirling	1.6%	WA	Labor	Yes	Yes (Coalition)
Hasluck	1.8%	WA	Labor	Yes	Yes (Coalition)
Bonner	1.9%	QLD	Labor*		Yes (Coalition)
Bass	2.1%	TAS	Labor		Yes (Coalition)
Greenway	3.1%	NSW	Labor		Yes (Coalition)
Braddon	6.0%	TAS	Labor		Yes (Coalition)

Note: Bonner was a newly created, notionally Labor seat. Wakefield was a Coalition-held seat that was notionally Labor after redistributions.

Table 7: 2004 Coalition seats changing hands

Seat	Margin	State	Original party	Within uniform swing?	Change?
Adelaide	0.6%	SA	Liberal		Yes (Labor)
Hindmarsh	1.0%	SA	Liberal		Yes (Labor)
Parramatta	1.2%	NSW	Liberal		Yes (Labor)
Richmond	1.7%	NSW	National		Yes (Labor)

Table 8: 2004 crossbencher seats changing hands

Seat	Margin	State	Original party	Within uniform swing?	Change?
Cunningham	2.2	NSW	Greens		Yes (Labor)

Note: Labor won Cunningham in the 2001 election, but lost it to the Greens in a by-election.

2007 ELECTION

Swing: 5.4 to Labor

Table 9: 2007 Labor seats changing hands

Seat	Margin	State	Original party	Within uniform swing?	Change?
Cowan	0.8%	WA	Labor		Yes (Coalition)
Swan	0.1%	QLD	Labor		Yes (Coalition)

Table 10: 2007 Coalition relevant seats

Seat	Margin	State	Original party	Within uniform swing?	Change?
Kingston	0.1%	SA	Liberal	Yes	Yes (Labor)
Bonner	0.5%	QLD	Liberal	Yes	Yes (Labor)
Wakefield	0.7%	SA	Liberal	Yes	Yes (Labor)
Parramatta	0.8%	NSW	Liberal*	Yes	Yes (Labor)
Makin	0.9%	SA	Liberal	Yes	Yes (Labor)
Braddon	1.1%	TAS	Liberal	Yes	Yes (Labor)
Hasluck	1.8%	WA	Liberal	Yes	Yes (Labor)
Stirling	2.0%	WA	Liberal	Yes	
Wentworth	2.5%	NSW	Liberal	Yes	
Bass	2.6%	TAS	Liberal	Yes	Yes (Labor)
Moreton	2.8%	QLD	Liberal	Yes	Yes (Labor)
Solomon	2.8%	NT	CLP	Yes	Yes (Labor)
Lindsay	2.9%	NSW	Liberal	Yes	Yes (Labor)
Eden-Monaro	3.3%	NSW	Liberal	Yes	Yes (Labor)
Bennelong	4.1%	NSW	Liberal	Yes	Yes (Labor)
Dobell	4.8%	NSW	Liberal	Yes	Yes (Labor)
Deakin	5.0%	VIC	Liberal	Yes	Yes (Labor)
McMillan	5.0%	VIC	Liberal	Yes	
Corangamite	5.3%	VIC	Liberal	Yes	Yes (Labor)
Boothby	5.4%	SA	Liberal	Yes	
Page	5.5%	NSW	National		Yes (Labor)
Blair	5.7%	QLD	Liberal		Yes (Labor)
Longman	6.7%	QLD	Liberal		Yes (Labor)
Robertson	6.9%	NSW	Liberal		Yes (Labor)
Petrie	7.4%	QLD	Liberal		Yes (Labor)
Flynn	7.7%	QLD	National		Yes (Labor)
Dawson	10.0%	QLD	National		Yes (Labor)
Leichhardt	10.3%	QLD	Liberal		Yes (Labor)
Forde	11.5%	QLD	Liberal		Yes (Labor)

Note: Parramatta was a Labor-held seat that was notionally Coalition after redistributions.

2010 ELECTION

Swing: 2.6 to Coalition

Table 11: 2010 Labor relevant seats

Seat	Margin	State	Original party	Within uniform swing?	Change?
Herbert	0.03%	QLD	Labor*	Yes	Yes (Coalition)
Robertson	0.1%	NSW	Labor	Yes	
Solomon	0.2%	NT	Labor	Yes	Yes (Coalition)
Macquarie	0.3%	NSW	Labor	Yes	Yes (Coalition)
Swan	0.3%	WA	Labor*	Yes	Yes (Coalition)
Gilmore	0.4%	NSW	Labor*	Yes	Yes (Coalition)
Macarthur	0.5%	NSW	Labor*	Yes	Yes (Coalition)
Dickson	0.8%	QLD	Labor*	Yes	Yes (Coalition)
Corangamite	0.9%	VIC	Labor	Yes	
Hasluck	0.9%	WA	Labor	Yes	Yes (Coalition)
Bass	1.0%	TAS	Labor	Yes	
Bennelong	1.4%	NSW	Labor	Yes	Yes (Coalition)
Deakin	1.4%	VIC	Labor	Yes	
Longman	1.9%	QLD	Labor	Yes	Yes (Coalition)
Flynn	2.2%	QLD	Labor	Yes	Yes (Coalition)
Braddon	2.3%	TAS	Labor	Yes	
Eden-Monaro	2.3%	NSW	Labor	Yes	
Page	2.4%	NSW	Labor	Yes	
Dawson	2.6%	QLD	Labor	Yes	Yes (Coalition)
Forde	3.4%	QLD	Labor		Yes (Coalition)
Leichhardt	4.1%	QLD	Labor		Yes (Coalition)
Bonner	4.5%	QLD	Labor		Yes (Coalition)
Brisbane	4.6%	QLD	Labor		Yes (Coalition)
Melbourne	4.7%	VIC	Labor		Yes (Greens)
Denison	15.3%	TAS	Labor		Yes (Independent)

Note: Dickson, Gilmore, Herbert, Macarthur and Swan were Coalition-held seats that were notionally Labor after redistributions.

Table 12: 2010 Coalition seats changing hands

Seat	Margin	State	Original party	Within uniform swing?	Change?
McEwen	0.02%	VIC	Liberal		Yes (Labor)
La Trobe	0.5%	VIC	Liberal		Yes (Labor)
O'Connor	12.8%	WA	Liberal*		Yes (WA National)

Note: At the time, Tony Crook (the WA National elected in O'Connor) did not sit in the Coalition party room. By the 2013 election, Crook had joined the Coalition.

2013 ELECTION

Swing: 3.6 to Coalition

Table 13: 2013 Labor relevant seats

Seat	Margin	State	Original party	Within uniform swing?	Change?
Corangamite	0.3%	VIC	Labor	Yes	Yes (Coalition)
Deakin	0.6%	VIC	Labor	Yes	Yes (Coalition)
Greenway	0.9%	NSW	Labor	Yes	
Robertson	1.0%	NSW	Labor	Yes	Yes (Coalition)
Lindsay	1.1%	NSW	Labor	Yes	Yes (Coalition)
Moreton	1.1%	QLD	Labor	Yes	
Banks	1.5%	NSW	Labor	Yes	Yes (Coalition)
La Trobe	1.7%	VIC	Labor	Yes	Yes (Coalition)
Petrie	2.5%	QLD	Labor	Yes	Yes (Coalition)
Reid	2.7%	NSW	Labor	Yes	Yes (Coalition)
Lilley	3.2%	QLD	Labor	Yes	
Brand	3.3%	WA	Labor	Yes	
Capricornia	3.7%	QLD	Labor		Yes (Coalition)
Page	4.2%	NSW	Labor		Yes (Coalition)
Eden-Monaro	4.2%	NSW	Labor		Yes (Coalition)
Dobell	5.1%	NSW	Labor		Yes (Coalition)
Hindmarsh	6.1%	SA	Labor		Yes (Coalition)
Bass	6.7%	TAS	Labor		Yes (Coalition)
Barton	6.9%	NSW	Labor		Yes (Coalition)
Braddon	7.5%	TAS	Labor		Yes (Coalition)
Lyons	12.3%	TAS	Labor		Yes (Coalition)

Table 14: 2013 Coalition seats changing hands

Seat	Margin	State	Original party	Within uniform swing?	Change?
Fairfax	7.0%	QLD	LNP		Yes (PUP)
Indi	9.0%	VIC	Liberal		Yes (Independent)

Table 15: 2013 crossbencher seats changing hands

Seat	Margin	State	Original party	Within uniform swing?	Change?
Lyne	12.7%	NSW	Independent		Yes (National)
New England	21.5%	NSW	Independent		Yes (National)

Note: The incumbent independents did not contest Lyne or New England.

2016 ELECTION

Swing: 3.1 to Labor

Table 16: 2016 Labor seats changing hands

Seat	Margin	State	Original party	Within uniform swing?	Change?
Chisholm	1.6%	VIC	Labor		Yes (Liberal)

Table 17: 2016 Coalition relevant seats

Seat	Margin	State	Original party	Within uniform swing?	Change?
Petrie	0.5%	QLD	LNP	Yes	
Capricornia	0.8%	QLD	LNP	Yes	
Lyons	1.2%	TAS	Liberal	Yes	Yes (Labor)
Solomon	1.4%	NT	CLP	Yes	Yes (Labor)
Hindmarsh	1.9%	SA	Liberal	Yes	Yes (Labor)
Braddon	2.6%	TAS	Liberal	Yes	Yes (Labor)
Banks	2.6%	NSW	Liberal	Yes	
Eden-Monaro	2.9%	NSW	Liberal	Yes	Yes (Labor)
Lindsay	3.0%	NSW	Liberal	Yes	Yes (Labor)
Page	3.1%	NSW	National	Yes	
Robertson	3.1%	NSW	Liberal	Yes	
Macarthur	3.3%	NSW	Liberal		Yes (Labor)
Bass	4.0%	TAS	Liberal		Yes (Labor)
Macquarie	4.5%	NSW	Liberal		Yes (Labor)
Cowan	4.5%	WA	Liberal		Yes (Labor)
Burt	6.1%	WA	Liberal		Yes (Labor)
Herbert	6.2%	QLD	LNP		Yes (Labor)
Longman	6.9%	QLD	LNP		Yes (Labor)
Mayo	12.5%	SA	Liberal		Yes (NXT)

Table 18: 2016 crossbencher seats changing hands

Seat	Margin	State	Original party	Within uniform swing?	Change?
Fairfax	0.03%	QLD	PUP		Yes (LNP)

Note: The Palmer United Party did not contest Fairfax.

2019 ELECTION

Swing: 1.2 to Coalition

Table 19: 2019 Labor relevant seats

Seat	Margin	State	Original party	Within uniform swing?	Change?
Herbert	0.02%	QLD	Labor	Yes	Yes (Coalition)
Corangamite	0.03%	VIC	Labor*	Yes	
Cowan	0.7%	WA	Labor	Yes	
Longman	0.8%	QLD	Labor	Yes	Yes (Coalition)
Dunkley	1.0%	VIC	Labor*	Yes	
Lindsay	1.1%	NSW	Labor	Yes	Yes (Coalition)
Macnamara	1.2%	VIC	Labor	Yes	
Braddon	1.7%	TAS	Labor		Yes (Coalition)
Bass	5.4%	TAS	Labor		Yes (Coalition)

Note: Corangamite and Dunkley were Coalition-held seats that were notionally Labor after redistributions.

Table 20: 2019 Coalition seats changing hands

Seat	Margin	State	Original party	Within uniform swing?	Change?
Gilmore	0.7%	NSW	Liberal		Yes (Labor)
Warringah	11.1%	NSW	Liberal		Yes (Independent)

Table 21: 2019 crossbencher seats changing hands

Seat	Margin	State	Original party	Within uniform swing?	Change?
Wentworth	1.1%	NSW	Independent	Yes	Yes (Liberal)

Other notable electorates

The member for Chisholm, Julia Banks, left the Liberal Party and ran as an independent, but in the seat of Flinders.

Appendix 2: Cube law methodology

Those seats that Labor and the Coalition won at the last election, plus any new seats created for the election, make up the "pool" of available seats.

This "pool" is distributed according to the ratio of

(the cube of Labor's two-party preferred vote at the election) :
(the cube of the Coalition's two-party preferred vote at the election)

For example:

- At the 2016 election, Labor and the Coalition held 145 seats.
- In the 2019 election, the Coalition received 51.5% of the two-party preferred vote.
- The cube of 51.5% is 0.1366. The cube of 48.5% is 0.1141.
- Therefore, the Coalition is expected to receive 0.1365:0.1141, or 55%, of the 145 seats. That comes to 79.
- That is two higher than the actual seats they received, 77, for an error of 2.
- Labor is expected to receive 45% of the seats, or 66.
- That is two lower than the actual seats they received, 68, for an error of 2.

Figure 6 illustrates the cube law. Between 43% and 57% of the 2PP vote, the cube law predicts that a swing of 1 percentage point in the 2PP will change the share of seats won by about 3 percentage points.

Figure 6: Cube law projected seats for a given 2PP