FORECAST ERROR: BETTING SUPPLEMENT 3: 2019 ELECTION

"Bet or be silent."[0401a]

Jeremy Corbyn, Boris Johnson and Jo Swinson

"Chronicle" article by Jonathan Walker, updated 09:29, 9 Dec 2019, see https://www.chroniclelive.co.uk/news/north-east-news/general-election-2019-who-bookmakers-17370173

1. PREAMBLE

The scheduled article of the "Forecast Error" series for 2019 covered political betting. By late 2019 the article had been written and was being revised for publication, but then the 2019 UK General Election was announced. It was far too late to update the article so the editor of *Significance* asked for a coda. This article is the result.

For compatibility purposes we will use the MAE and WIN and bias metrics. To be compatible with the betting article we will use three-party-forced (Con/Lab/Oth). We recorded the data over time but do not have time to format the time data for calculations, so we shall use the latest data by 23:59 November 11th and 21:59 November 12th 2019. Those are the latest available data by the day before the polls opened, and the last available data before the polls closed.

2. ELECTION RESULTS

The 2019 UK General Election was on 2019-12-12 and was the election of Members of Parliament (MPs) to represent the 650 constituencies in the UK House of Commons, the lower house of the Parliament of the United Kingdom. The polling stations closed at 10pm and the vote count was completed by 2:40pm[1215a] the next day when the last remaining constituency (St Ives) declared. The election resulted in an overall majority and most seats for the Conservative Party. The Prime Minister remained Boris Johnson, the leader of that party. The final results are given in "Appendix 1: 2019 UK General Election Results" but the values on a three-party-forced basis for UK, GB and NI at the time were:

Table 1 (B1): results of the 2019 UK General Election

Party (3pf)	UK MPs	UK MP Share	UK Votes	UK Vote Share	GB MPs	GB Votes	GB Vote Share	NI MPs	NI Votes	NI Vote Share
Con	365	56.15%	13,966,451	43.63%	365	13,961,018	44.73%	0	5433	0.68%
Lab	203	31.23%	10,269,076	32.08%	203	10,269,076	32.90%	0	0	0.00%
Oth	82	12.62%	7,776,593	24.29%	64	6,982,992	22.37%	18	793601	99.32%
Total	650	100%	32,012,120	100%	632	31,213,086	100%	18	799034	100%

3. 2019 ACCURACY OF BETTING ODDS (FIXED ODDS AND EXCHANGE)

The latest available data by the day before the polls opened, and the last available data before the polls closed, are given below

Table 2 (C3): accuracy of the 2019 books the day before the election

Book	Book	BE/ms	CL/ms	LK/ms	WH/ms	BE/om	CL/om	LK/om	WH/om
	Tstamp	11/12/2019 22:58:12	11/12/2019 22:58:12	11/12/2019 22:58:12	11/12/2019 22:58:12	11/12/2019 23:19:13	11/12/2019 23:19:13	11/12/2019 23:19:13	11/12/2019 23:19:13
	Source	[1215f]	[1215f]	[1215f]	[1215f]	[1215g]	[1215g]	[1215g]	[1215g]
Raw odds	Lab	_23/1	_12/1	_12/1	_10/1	_44/1	_20/1	_20/1	_16/1
	Con	_1/25	_1/25	_1/25	_1/25	_4/11	_4/11	_4/11	_4/11
	LD	_979/1	_200/1	_200/1	_100/1	_979/1	_500/1	_500/1	_250/1
	UKI								
	GRE		_1000/1	_1000/1	_500/1			_1000/1	
	AOP	_979/1				_979/1			
	NOM					_14/5	_5/2	_5/2	_9/4
	BRX		_500/1	_500/1	_500/1	_979/1			
Odds (3pf),	Lab	0.042	0.077	0.077	0.091	0.022	0.048	0.048	0.059
	Con	0.962	0.962	0.962	0.962	0.733	0.733	0.733	0.733
	OTH	0.001	0.008	0.006	0.012	0.265	0.288	0.289	0.312
Odds (3pf),	Lab	0.041	0.074	0.074	0.085	0.022	0.045	0.045	0.053

overround removed	Con	0.957	0.919	0.921	0.903	0.718	0.686	0.686	0.664
	OTH	0.002	0.008	0.006	0.011	0.260	0.269	0.270	0.282
Results (3pf)	Lab	0	0	0	0	0	0	0	0
	Con	1	1	1	1	1	1	1	1
	OTH	0	0	0	0	0	0	0	0
Metrics (3pf)	MAE	0.029	0.054	0.053	0.064	0.188	0.209	0.210	0.224
	Precision	0.001	0.003	0.003	0.004	0.037	0.043	0.043	0.049
	WIN	1	1	1	1	1	1	1	1
	Bias(L)	0.041	0.074	0.074	0.085	0.022	0.045	0.045	0.053
	Bias(C)	-0.043	-0.081	-0.079	-0.097	-0.282	-0.314	-0.314	-0.336
	Bias(O)	0.002	0.008	0.006	0.011	0.260	0.269	0.270	0.282

Table 3 (C4): accuracy of the 2019 books immediately before the polls closed

Book	Book	BE/ms	CL/ms	LK/ms	WH/ms	BE/om	CL/om	LK/om	WH/om
	Tstamp	12/12/2019 20:21:14	12/12/2019 20:21:14	12/12/2019 20:21:14	12/12/2019 20:21:14	12/12/2019 21:37:29	12/12/2019 21:37:29	12/12/2019 21:37:29	12/12/2019 21:37:29
	Source	[1216a]	[1216a]	[1216a]	[1216a]	[1216b]	[1216b]	[1216b]	[1216b]
Raw odds	Lab	_25/1	_12/1	_12/1	_12/1	_48/1	_16/1	_16/1	_16/1
	Con	_1/33	_1/25	_1/25	_1/33	_4/11	_4/11	_4/11	_4/11
	LD	_979/1	_200/1	_200/1	_100/1	_979/1	_500/1	_500/1	_250/1
	UKI								
	GRE		_1000/1	_1000/1	_1000/1			_1000/1	
	AOP	_979/1				_979/1			
	NOM					_11/4	_5/2	_5/2	_9/4
	BRX		_500/1	_500/1	_500/1	_979/1			
Odds (3pf),	Lab	0.038	0.077	0.077	0.077	0.020	0.059	0.059	0.059
	Con	0.971	0.962	0.962	0.971	0.733	0.733	0.733	0.733
	OTH	0.002	0.008	0.006	0.011	0.270	0.288	0.289	0.312
Odds (3pf), overround removed	Lab	0.038	0.074	0.074	0.073	0.020	0.054	0.054	0.053
	Con	0.960	0.919	0.921	0.917	0.717	0.679	0.678	0.664
	OTH	0.002	0.008	0.006	0.010	0.264	0.266	0.267	0.282
Results (3pf)	Lab	0	0	0	0	0	0	0	0
	Con	1	1	1	1	1	1	1	1
	OTH	0	0	0	0	0	0	0	0
Metrics (3pf)	MAE	0.027	0.054	0.053	0.055	0.189	0.214	0.214	0.224
	Precision	0.001	0.003	0.003	0.003	0.038	0.044	0.044	0.049
	WIN	1	1	1	1	1	1	1	1
	Bias(L)	0.038	0.074	0.074	0.073	0.020	0.054	0.054	0.053
	Bias(C)	-0.040	-0.081	-0.079	-0.083	-0.283	-0.321	-0.322	-0.336
	Bias(O)	0.002	0.008	0.006	0.010	0.264	0.266	0.267	0.282

These odds appear well behaved. Let's look at them graphically.
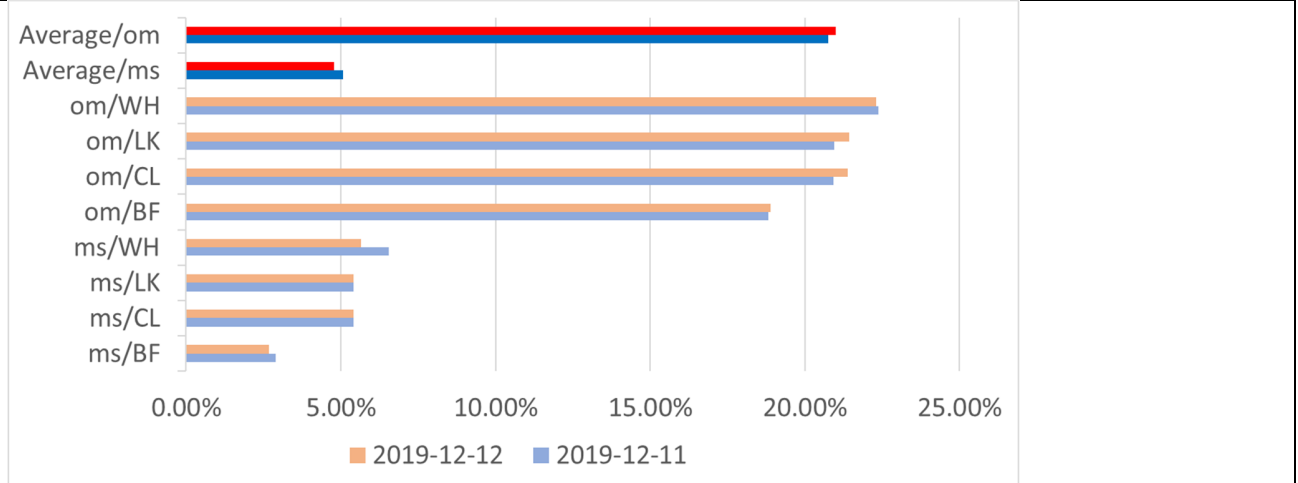
4. UK ACCURACY BY ELECTION

So we have compiled betting statistics for the 2019 UK General Election. We have converted the MAE's for each election to 3pf (Lab/Con/Other) without the overround, and calculated other summary metrics. We will now plot the following concepts:

- Average MAE: how accurate is each book on a 3PF basis?
  Polls have to be accurate to around 2.7% to be regarded a success, so how accurate are odds?
- Average WIN. Do the books predict the winner or not?
  For a given election, how many of the bookies predicted the winner
- Bias(Labour), Bias(C), Bias(Oth). How biased are the books?
  Are the odds biased in favour of Labour, Conservative or other?

The graphs are below. First, we consider Mean Absolute Error: MAE. How close were the odds?

Mean Absolute Error of the book

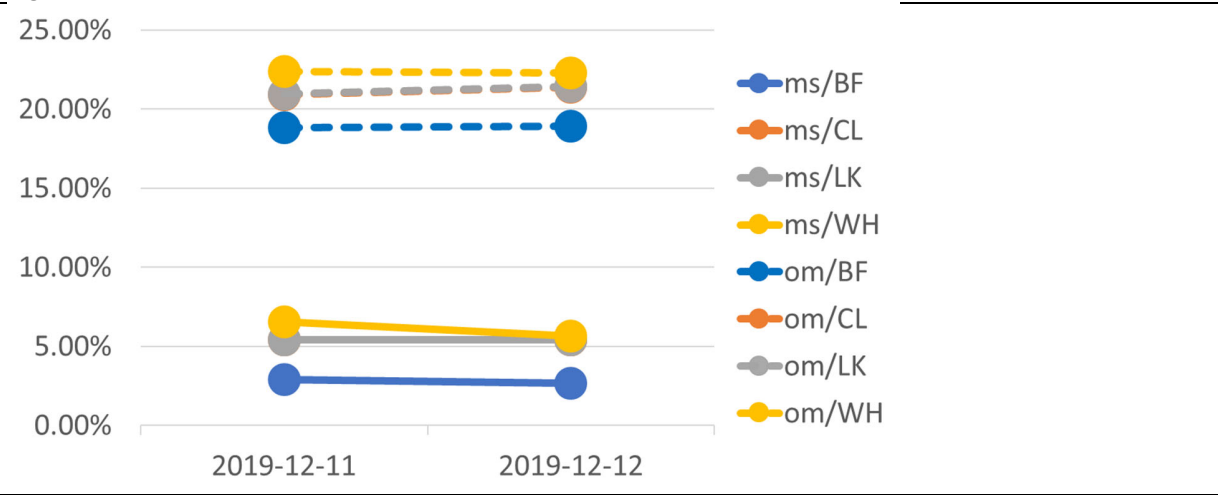Figure 1 (A12): Average MAE and MAE for each bookmaker, 2019 election, Con/Lab/Other basis

This graph depicts the MAEs of the bookmakers for the day before the 2019 election, and immediately before the polls closed, compared on a three-party-forced basis to the result. The threshold is 2.7%. Average in bold. BF = Betfair, CL = Coral, LK = Ladbrokes, WH = WilliamHill.

In our previous article, we selected 2.7% as the acceptable error for multiparty predictions. As before the MAE for overall majority is much above this. But notably the MAE for most seats come close, and in one case – Betfair's most seats immediately before the election – it actually achieves it

Mean Absolute Error of the book: Fixed-Odds Vs Exchange Betting

How about MAEs between modes? Were fixed-odds better than exchange betting? We depict the MAE of the book for each bookie below

Figure 2 (A13): MAE for each bookmaker, 2019 election, Con/Lab/Other basis

This graph depicts the MAE of the odds on most seats (solid line) or overall majority (dashed line) offered by each of four bookies compared on a three-party-forced basis to the result. The threshold is 2.7%. BF = Betfair, CL = Coral, LK = Ladbrokes, WH = WilliamHill.

Betfair Exchange is a betting exchange but the other three bookies are sportsbooks, so we'd expect Betfair to be more accurate given the faster pace of changing the odds. In this case, it appears that it was, although this is a very short timespan.

WIN Index of the book

Now we consider WIN. Did our odds predict who would win? There's no need for a graph here because it's simple: they all got it all right.
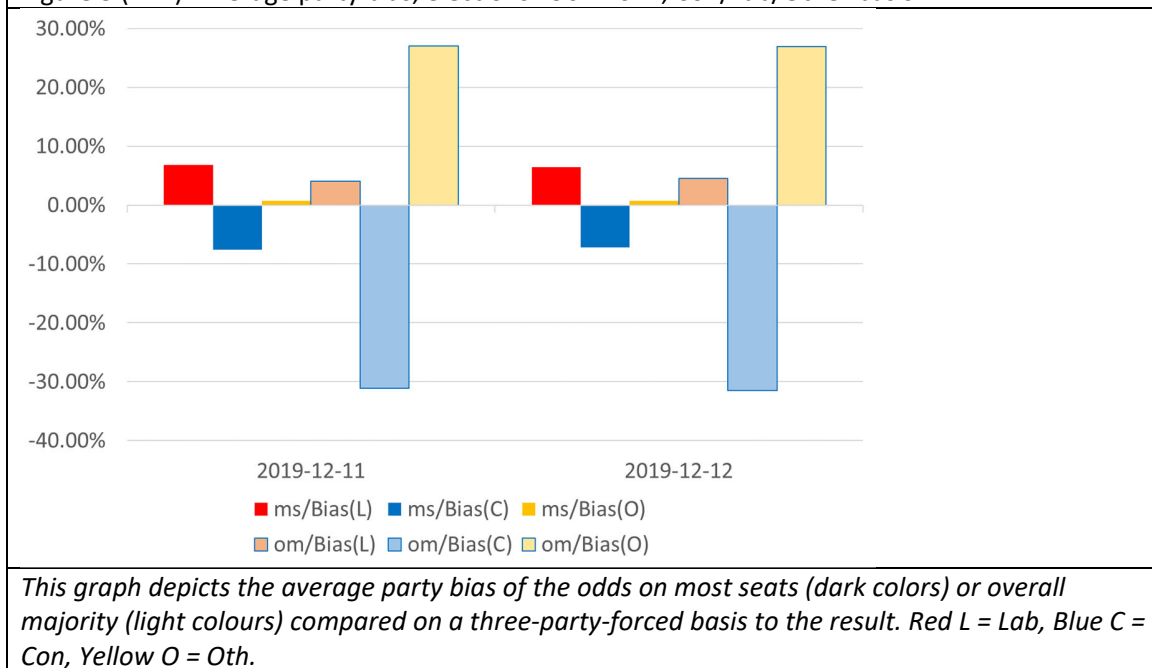
Table 4 (A15): WIN metric for four bookies for the day before, and immediately before, polls closed

Date	ms /BF	ms /CL	ms /LK	ms /WH	ms /BF	ms /CL	ms /LK	ms /WH	Average /ms	Average/ om
2019-12-11	1	1	1	1	1	1	1	1	1	1
2019-12-12	1	1	1	1	1	1	1	1	1	1

Bias of the individual odds

Now let's consider bias. Do we over- or underestimate a particular party?

Figure 3 (A17): Average party bias, elections 1964-2017, Con/Lab/Other basis

This graph depicts the average party bias of the odds on most seats (dark colors) or overall majority (light colours) compared on a three-party-forced basis to the result. Red L = Lab, Blue C = Con, Yellow O = Oth.

Looking at the Bias parameters we note that in this election, the "most seats" odds were less biased than the "overall majority" odds, and the odds were biased in favour of Labour and Other (hence overestimating their chances) and biased against the Conservatives (hence underestimating their chances).

5. CONCLUSIONS AND VERDICT

In the 2019 UK General Election all the odds for the day before the election, and immediately before the polls closed, correctly predicted the final outcome. As usual the MAE was mostly not within our 2.7% threshold but was close and in one case - Betfair Exchange most seats – the MAE actually did meet it.

Whereas the previous article was at pains to point out that betting odds can go badly wrong, in this case they went very right. How to explain this phenomenon? A possible explanation is presented in the next section.

6. THE "NEW SETTLEMENT": CYCLICALITY IN BRITISH POLITICS

As a preamble to the betting sequence of Forecast Error articles, the author presented a poster at the RSS 2019 Conference in Belfast, and during the presentation a phenomenon was repeatedly emphasized: politics and betting on politics in the United Kingdom, especially post-War, goes in cycles.

The politics of a given moment may be stable, and may have been settled for a long time. But then there are unusual events – the "inciting incidents" in narrative jargon – and existing politics finds it difficult to cope. Politicians used to the existing settlement try to adapt, and may succeed for a while, but eventually politics becomes disrupted.

During this period of disruption, people's voting behavior begins to change. Pollsters, basing their predictions on assumptions that no longer apply, start producing inaccurate polls. Gamblers and bookmakers, basing their assessments on previous behavior, fail to price the betting markets correctly. Long-odds winners begin to appear. Political parties begin to realign, as MPs form into new groups. New politics appear and are winnowed according to whether they cope with these new circumstances

But this period of disruption is not permanent. Eventually politicians appear whose principles align with the new public requirements. They achieve political success and politics achieves a new consensus. This new politics is sometimes referred to as a "new settlement". People's voting behavior stabilizes, and polls and odds become reliable again. A new period of stability commences.

If this cyclical hypothesis is correct, then this explains the recent election. Since the 2008 financial crisis and later crisis in Europe politics in the UK has been disrupted. Low-probability events: the 2010 Coalition, the 2016 EU referendum, the 2017 minority Government, became commonplace. Politicians proposed numerous alternatives, but eventually only one – the Johnson Leave-Deal-Or-No-Deal – achieved electoral success and the "new settlement" for the 2020s now begins.

7. NEXT STEPS

The Forecast Error betting sequence is now done. The research for it and its sister articles took some years, during which time politics quaked and reset and gamblers gambled. The author was bemused, surprised, scared and eventually numbed by the amount of money political gamblers bet: every year experience or research threw up somebody who had gambled six or seven figures and won…or occasionally lost. It was a privilege, albeit a poignant one, to observe such behavior in real time.

If the "new settlement" theory is correct, political betting in the UK will now settle down. The age of long-odds winners such as the peak 10/1 Leave odds may be over, replaced by a long, dull years-long sequence of short-odds winners, 2/5, 1/3, 1/7…

But this is just the British cycle. There is another election next year, more difficult to poll, with debatable gambling and chaotic emotions, rich data and fake news, high morals and low tricks, and election campaign budgets measured in the hundreds of millions. It is arguably the most spectacular election on the planet, and it is to that election that the Forecast Error series will now focus.

The November 2020 US Presidential Election.

8. REFERENCES

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[1214s] https://www.dataprax.is/tory-landslide-or-hung-parliament

9. APPENDICES

APPENDIX 1: 2019 UK RESULTS

During election night the votes are announced by each returning officer and collated by various different newsgatherers. Soon after those officers send in the forms with the numbers on, which may include minor corrections, and some time later an authoritative list is issued by entities such as the House of Commons Library. But in the first few days after the election there is no authoritative source and there is inconsistency caused by the various sources having different vote numbers due to asynchronicity or differential Speaker assignment. So to avoid confusion a specified source must be chosen. The version we chose was the BBC figures at the time of writing, thus:

	Source	BBC UK			BBC NI			BBC GB		
	Link	[1215d]			[1215e]			Deduced		
Party name (short form)	3PF	UK MP	UK Votes	UK Vote Share	NI MP	NI Votes	NI Vote Share	GB MP	GB Votes	GB Vote Share
Con	Con	365	13,966,451	43.63%	0	5,433	0.68%	365	13,961,018	44.73%
Lab	Lab	203	10,269,076	32.08%	0		0.00%	203	10,269,076	32.90%
SNP	Oth	48	1,242,380	3.88%	0		0.00%	48	1,242,380	3.98%
LD	Oth	11	3,696,423	11.55%	0		0.00%	11	3,696,423	11.84%
DUP	Oth	8	244,127	0.76%	8	244,127	30.55%	0	0	0.00%
SF	Oth	7	181,853	0.57%	7	181,853	22.76%	0	0	0.00%
Plaid	Oth	4	153,265	0.48%	0		0.00%	4	153,265	0.49%
SDLP	Oth	2	118,737	0.37%	2	118,737	14.86%	0	0	0.00%
Green	Oth	1	865,697	2.70%	0	1,996	0.25%	1	863,701	2.77%
Alliance	Oth	1	134,115	0.42%	1	134,115	16.78%	0	0	0.00%
Brexit	Oth	0	642,323	2.01%	0		0.00%	0	642,323	2.06%
Change UK	Oth	0	10,006	0.03%	0		0.00%	0	10,006	0.03%
UUP	Oth	0	93,123	0.29%	0	93,123	11.65%	0	0	0.00%
UKIP	Oth	0	22,817	0.07%	0		0.00%	0	22,817	0.07%
Other (Telegraph)	Oth	0		0.00%	0		0.00%	0	0	0.00%
Ind	Oth	0		0.00%	0		0.00%	0	0	0.00%
Other (Guardian)	Oth	0		0.00%	0		0.00%	0	0	0.00%
YP	Oth	0	29,201	0.09%	0		0.00%	0	29,201	0.09%
Lib	Oth	0	10,876	0.03%	0		0.00%	0	10,876	0.03%
Aontú	Oth	0	9,814	0.03%	0	9,814	1.23%	0	0	0.00%
MRLP	Oth	0	9,739	0.03%	0		0.00%	0	9,739	0.03%
CPA	Oth	0	6,486	0.02%	0		0.00%	0	6,486	0.02%
SDP	Oth	0	3,295	0.01%	0		0.00%	0	3,295	0.01%
AWP	Oth	0	3,086	0.01%	0		0.00%	0	3,086	0.01%
ED	Oth	0	1,987	0.01%	0		0.00%	0	1,987	0.01%
Libertarian	Oth	0	1,780	0.01%	0		0.00%	0	1,780	0.01%
WRP	Oth	0	524	0.00%	0		0.00%	0	524	0.00%
AT	Oth	0	351	0.00%	0		0.00%	0	351	0.00%
Other (BBC)	Oth	0	294,588	0.92%	0	9,836	1.23%	0	284,752	0.91%
		650	32,012,120	100.00%	18	799,034	100.00%	632	31,213,086	100.00%

The above was then used to derive the following:

Party (3pf)	UK MPs	UK MP Share	UK Votes	UK Vote Share	GB MPs	GB Votes	GB Vote Share	NI MPs	NI Votes	NI Vote Share
Con	365	56.15%	13,966,451	43.63%	365	13,961,018	44.73%	0	5433	0.68%
Lab	203	31.23%	10,269,076	32.08%	203	10,269,076	32.90%	0		0.00%
Oth	82	12.62%	7,776,593	24.29%	64	6,982,992	22.37%	18	793601	99.32%
Total	650	100%	32,012,120	100%	632	31,213,086	100%	18	799034	100%

Other sources include the Guardian and the Telegraph

Source		Guardian		Telegraph	
Link		[1215b]		[1215c]	
Party name (short form)	3PF	UK MP	UK Votes	UK MP	UK Votes
Con	Con	365	13,966,565	365	13,966,565
Lab	Lab	203	10,295,607	203	10,295,607
SNP	Oth	48	1,242,372	48	1,242,372
LD	Oth	11	3,696,423	11	3,696,423
DUP	Oth	8	244,128	8	244,128
SF	Oth	7	181,853	7	181,853
Plaid	Oth	4	153,265	4	153,265
SDLP	Oth	2	118,737	2	118,737
Green	Oth	1	865,697	1	865,697
Alliance	Oth	1	134,115	1	134,115
Brexit	Oth	0	642,303	0	642,303
Change UK	Oth	0	10,006	0	10,006
UUP	Oth	0		0	93,123
UKIP	Oth	0		0	22,817
Other (Telegraph)	Oth	0		0	344,905
Ind	Oth	0	196,843	0	
Other (Guardian)	Oth	0	264,002	0	
YP	Oth	0		0	
Lib	Oth	0		0	
Aontú	Oth	0		0	
MRLP	Oth	0		0	
CPA	Oth	0		0	
SDP	Oth	0		0	
AWP	Oth	0		0	
ED	Oth	0		0	
Libertarian	Oth	0		0	
WRP	Oth	0		0	
AT	Oth	0		0	
Other (BBC)	Oth	0		0	
Total		650	32,011,916	650	32,011,916

The party names (long form and short form) look like this:

Party name (long form)	Party name (short form)
Conservative Party	Con
Labour Party	Lab
Scottish National Party	SNP
Liberal Democrat Party	LD
Democratic Unionist Party	DUP
Sinn Féin	SF
Plaid Cymru	Plaid
Social Democratic and Labour Party	SDLP
Green Party	Green
Alliance Party	Alliance
Brexit Party	Brexit
Independent Group For Change	Change UK
Ulster Unionist Party	UUP
United Kingdom Independence Party	UKIP
Other (Telegraph)	Other (Telegraph)
Independents	Ind
Other (Guardian)	Other (Guardian)
The Yorkshire Party	YP
Liberal Party	Lib
Aontú	Aontú

Monster Raving Loony Party	MRLP
Christian Peoples Alliance	CPA
Social Democratic Party	SDP
Animal Welfare Party	AWP
English Democrats	ED
Libertarian	Libertarian
Workers Revolutionary Party	WRP
Advance Together	AT
Other (BBC)	Other (BBC)

The sources did not differentiate between the various Green parties in the United Kingdom: this and other elisions and errors in the sources are beyond the control of the author.