

MRP

Therapeutic indications, administration, case studies & health warnings

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Therapeutic Indications

Why use MRP?

Apply topically

- Goal:
 - Instead of estimating national vote (intention) shares, estimate constituency vote (intention) shares.
- Benefits:
 - Direct: where we actually care about seats, and the votes to seats translation is not straightforward.
 - Indirect: forces us to pay more attention to the composition of the electorate.
 - Indirect: the required larger sample sizes also enable us to correct more potential sources of bias with our samples.

Administration

Decomposing the problem

- Population: Who can vote?
 - Data from census, population surveys, electoral registration, past election results and surveys
 - Need an answer for constituency x demographics x past vote
- Turnout: Who will vote?
 - Data from past election turnout and past and/or present surveys/polls
 - Need an answer for constituency x demographics x past vote
- Choice: Who will vote for whom?
 - Data from current surveys/polls of vote intention
 - Need an answer for constituency x demographics x past vote
- Together, are there patterns in how peoples' votes are changing that might add up to aggregate patterns in the election outcomes?

Case Studies


2017

DAILY NEWSPAPER OF THE YEAR

THE TIMES

Wednesday May 31 2017 | thetimes.co.uk | No 72237

Only £1 to subscribers **£1.60**



Hot! Hot! Hot!

The fashion director's guide to colour *Read*

Alice Thomson

Do we really want more faith schools? *Comment*

Shock poll predicts Tory losses

Controversial YouGov estimate points to hung parliament with 20 fewer seats for May

Sam Coates Deputy Political Editor

The Conservative Party could be in line to lose 20 seats and Labour gain nearly 30 in next week's general election, according to new modelling by one of the country's leading pollsters.

YouGov's first constituency-by-constituency estimate of the election result predicts that the Tories would fall short of an overall majority by 16 seats, leading to a hung parliament.

The central projection of the model, which allows for a wide margin of error, would be a catastrophic outcome for Theresa May, who called the election when polls pointed to a landslide result. Her support appears to have plunged after the poor reception of the party

Latest projections
(Actual number of seats at time of dissolution of 2015-17 parliament)

Party	Seats	Change
C	390	(332)
Lab	257	(229)
SNP	50	(54)
NI	10	(18)
LD	10	(9)
Plaid Cymru	3	(3)
Green	1	(1)
Other	1	(1)
UKIP	0	(1)

Required majority: 326 seats

Source: YouGov

manifesto, including plans to make more elderly voters pay for home care. YouGov's model puts the Tories on course to win 330 seats, down from the 330 they held when the election was called. Labour would get 257 seats, up from 229; the Liberal Democrats ten, up from nine; the SNP 50, down from 54; the Greens one and Plaid Cymru three. This would leave the Tories 16 seats short of the 326 votes they need for an overall majority in the Commons.

The poll allows for big variations, however, and suggests that the Tories could get as many as 345 seats on a good night, 15 more than at present, and as few as 274 seats on a bad night.

YouGov acknowledged that the predictions were controversial and pointed to significant 'churn' in voting intentions. But Stephan Shakespeare, its chief executive, said that the model had been publicly tested during the EU referendum campaign last year, when it always had Leave ahead.

The model is based on 50,000 interviews over the course of a week, with voters from a panel brought together by YouGov. This allows the pollster to assess the intention of every type of voter, from where they live to how they voted in the EU referendum, their age and social background, to weight the results.

The estimates were met with scepticism by Tory and Labour figures. One prominent Conservative said that the party was expecting a majority of 50 or more, despite an 'atrocious' campaign, and insisted that anger over the manifesto was fading.

A Labour figure in the Midlands said that while the Tory social care blunder had helped, Jeremy Corbyn's unpopularity continued to deter natural Labour voters and the party would be losing rather than gaining seats in the region.

Other pollsters predicted a convincing victory for the Tories. Andrew Hawkins, chairman of ComRes, said: 'If voters behave in the way they broadly did in 2015 then the Conservatives remain on track for a 100-plus majority. This seems, on present assumptions, the most likely outcome.'

An ICM poll released yesterday gave

Continued on page 8, col 3

2019

DAILY NEWSPAPER OF THE YEAR

THE TIMES

Thursday November 28 2019 | thetimes.co.uk | No 73016

£1.80 Only £1.30 to subscribers

Johnson heads for big majority

Only survey to forecast hung parliament in last election predicts Tories will win 359 seats — giving them cushion of 68

Franch Elliott Political Editor

Boris Johnson is on course for a comfortable majority, according to a polling model that accurately predicted the election outcome two years ago.

The Conservatives would win 359 seats, Labour 211, the SNP 43 and the Lib Dems 13 if the election were held today, according to a seat-by-seat analysis based on current polling by YouGov for The Times.

That result would give Mr Johnson a majority of 68 as he made gains at Labour's expense, particularly in the Midlands and north-east England. Labour would suffer its second-worst postwar defeat, with Jeremy Corbyn's total two above Michael Foot's in 1983.

However, the projected margins of victory are below 5 per cent in at least 30 seats predicted to be Conservative. YouGov cautions that a fall from the present Tory national poll lead of 11 percentage points to less than 7 could yet deny Mr Johnson a majority.

Based on more than 100,000 interviews over seven days, the pollster has modelled voting preferences based on age, gender, education, past vote and other factors, along with local political circumstances. The multilevel regression and post-stratification (MRP) model is then applied to the demographic make-up and individual characteristics of each of the 632 constituencies in the United Kingdom to provide projected vote shares for each seat.

It was used for the first time in a general election in 2017. The Times published a YouGov MRP poll that accurately predicted a hung parliament when many other polls were pointing to a big Tory majority ten days from the vote on June 8.

Today's version is based on national vote shares of the Conservatives on 43 per cent, Labour 32, Lib Dems 14 and the Brexit Party 3. The pollster will repeat the model before election day using updated results. The analysis suggests that this time Mr Johnson is holding off the Lib Dem threat in most Tory seats that voted to remain and will not suffer anything like the wipeout in Scotland that some had predicted.

Of the 58 seats predicted to change hands on December 12, 44 are Tory gains from Labour. However, Labour is within 3 points of retaining 16 seats the model predicts it would lose now.

The SNP would recover some of its losses in Scotland, taking eight seats from rival parties under the model. It predicts that the Tories would lose two of their 13 Scottish seats and Labour would lose five.

The analysis suggests that Labour casualties could include Dennis Skinner in Bolsover and Caroline Flint in Don Valley despite their support for Brexit in the Commons. For the Tories Zac Goldsmith appears doomed in Richmond Park. Mr Johnson is forecast to hold Uxbridge comfortably.

If the prime minister achieves this result he will have torn down the 'red wall' of Labour seats from Great Grimsby to the Vale of Chyd in a realignment of politics. His aide, Dominic Cummings, warned against complacency, writing in his blog: 'Trust me, as someone who has worked on lots of campaigns, things are MUCH tighter than they seem and there is a very real possibility of a hung parliament.'

Election 2019, pages 6-11
Leading article, page 39

EXCLUSIVE

How the map is shaping up

Every gain, every loss, every seat

See inside cover

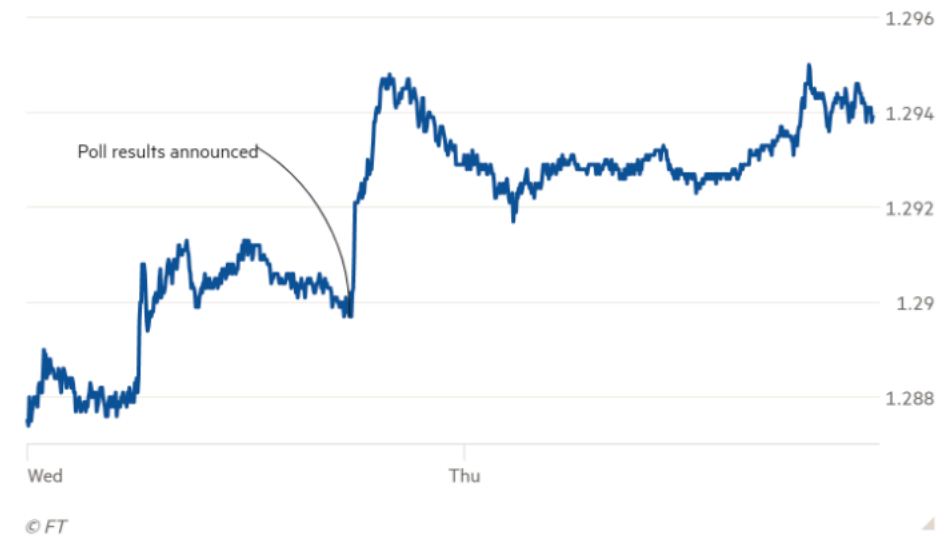


Pound Sterling - United States Dollar



UK pound ticks up after key poll

\$ per £



All the data

2019

- Population: Who can vote?
 - We built a synthetic “sample” of the UK electorate consisting of 2.2 million weighted pseudo-people for whom we “knew” Age x Gender x Qualifications x Ethnicity x Marital Status x Constituency x Local Authority x 2016 Referendum vote x 2017 General Election vote x 2019 EU Parliament vote
- Turnout: Who will vote?
 - We built a model of UK general election turnout based on 4,246 validated respondents from the 2015 and 2017 British Election Studies
- Choice: Who will vote for whom?
 - We built a multilevel regression / machine learning model with all of the individual-level characteristics in our population model, many constituency-level predictors, and interactions thereof. 105,612 respondents from final week of campaign in final version.

Performance

- 2017
 - Overestimated Con-Lab margin by 1.0 % points.
 - Predicted hung Parliament, 305 Con seats (vs 317 actual)
- 2019
 - Underestimated Con-Lab margin by 3.1 % points
 - Predicted Conservative majority, 339 Con seats (vs 365 actual)

Predicting Seat Winners

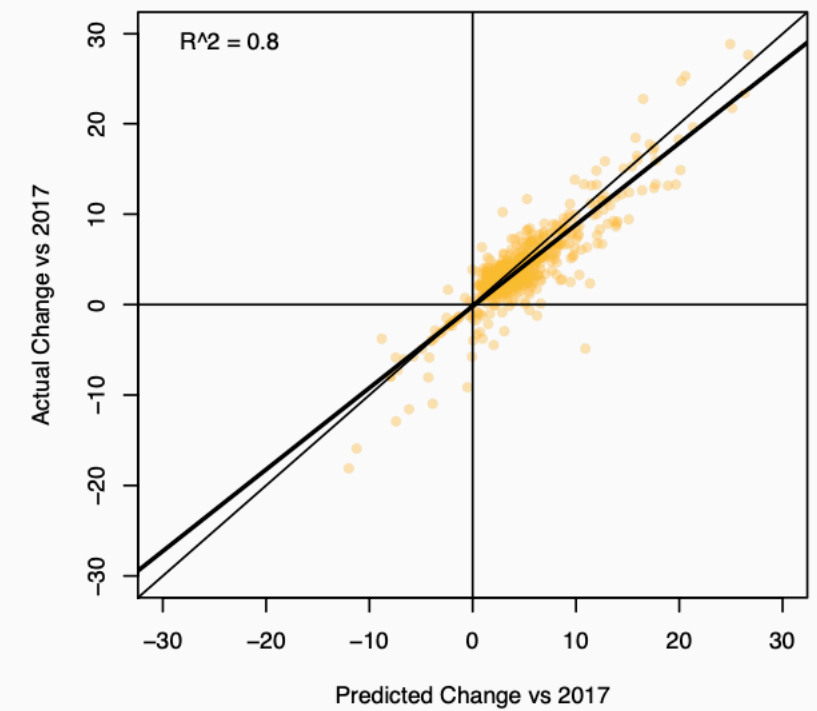
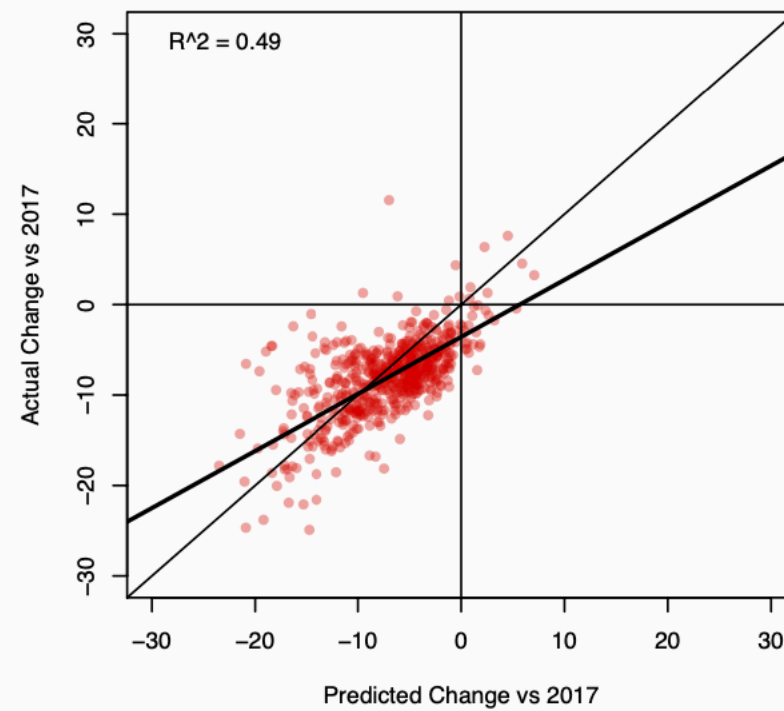
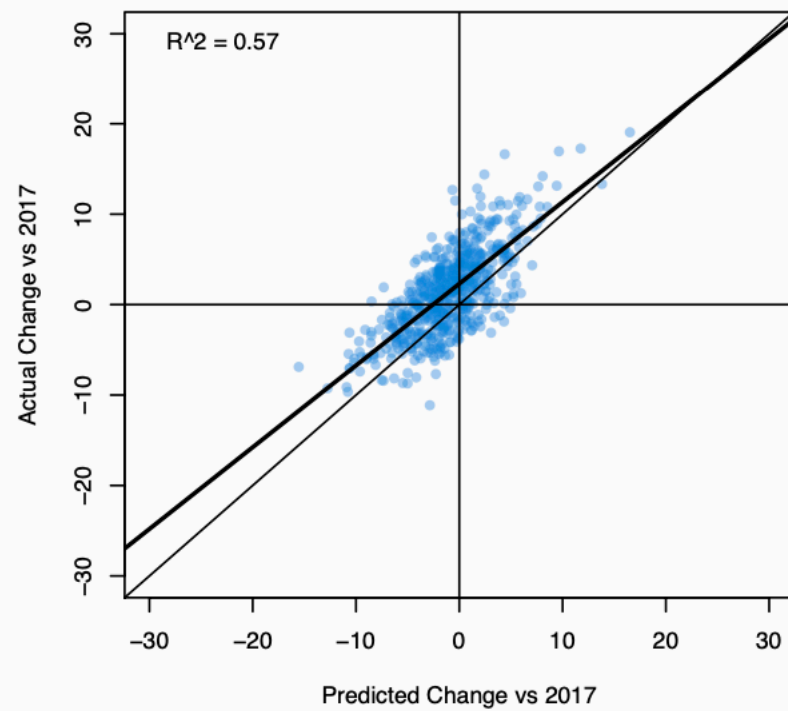
2017 & 2019

Seat Winners Correctly Predicted	Uniform National Swings (E, S, W)	YouGov MRP
2019	585 (92.6%)	590 (93.5%)
2017	580 (91.8%)	587 (92.9%)

Despite misses on overall vote share, on individual seat predications these predictions outperformed uniform national swings, applied at the level of England, Scotland and Wales, using the **correct** national swings in each country.

Predicting Non-Uniform Swing

2019



Constituency Example

Cities of London and Westminster

	Con	Lab	LD	Green
2019 Result	40	27	31	2
2019 MRP	38	25	32	3
2017 Result	47	38	11	2

Health Warnings

Three questions to ask of any MRP you see

- How did you construct your picture of how many people with different characteristics are in each constituency?
 - How many 2019 Conservative voting 30-44 year olds are there in Nuneaton?
- How does your model incorporate the role of political context?
 - Otherwise similar people who live in different constituencies do not generally behave the same way.
- What is the electorate you are assuming will show up and vote?
 - In which ways will it look like 2019 and in which ways not?
- 2024 Bonus: How are you handling the boundary changes?