Forecasting Elections
Session 10

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MIT Department of Political Science
17.263: American Elections
Roadmap

News

Fundamentals

Polls

Forecasts
News
With Cross Talk, Lies and Mockery, Trump Tramples Decorum in Debate With Biden

Interrupting Joe Biden nearly every time he spoke, President Trump made little attempt to reassure swing voters about his leadership. Mr. Biden hit back: “This is so unpresidential.”
Trump’s Answer on White Supremacists Reverberates After Debate

President’s remarks draw criticism from members of both parties; Debate commission says it will consider changes to remaining debates

Aides to President Trump said Wednesday there was nothing to clarify about his debate remarks about the far-right group Proud Boys.

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Fundamentals
The Predictability of Elections

- The economy
- National security
- Incumbency
Income Growth and Incumbent Party Performance

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The “Bread and Peace” Prediction for 2016

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Income Growth

![Real Disposable Personal Income Graph]

Source: U.S. Bureau of Economic Analysis
Fred.stlouisfed.org

47%!

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COVID Relief

Chart 1. Dollar Change in Personal Income and Select Components, United States: 2020 Q1-Q2
(Millions of Dollars)

- Personal Income: 1,446,296
- Transfer receipts: (COVID relief) 2,450,566
- Net earnings: -920,386
- Property income: -83,884
GDP Growth

Real GDP: Percent change from preceding quarter

U.S. Bureau of Economic Analysis

Seasonally adjusted at annual rates
Limits of Fundamentals-Only Forecasts

- Small sample size (and range)
  - Large sampling error
  - Easy to over-fit
  - Out-sample-predictions particularly unreliable
- Doesn’t incorporate all information (bug or feature?)
  - In particular, polls
Polls
The Evolution of Election Polling

The Quota-Sampling Era (1930s–1940s)

- Interviewers sent to locations across the country and instructed to select interview subjects according to specific demographic quotas (e.g., 70% men).
- Pollsters such as George Gallup predicted the 1936 election when much larger (but non-representative) samples failed, but had their own failure in 1948.
The Evolution of Election Polling

The Quota-Sampling Era (1930s–1940s)

The Random-Digit-Dialing Era (1950s–1990s)

- Call randomly sampled phone numbers and interview survey respondents remotely.
- High phone ownership and response rates $\Rightarrow$ representative samples.

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The Evolution of Election Polling

The Quota-Sampling Era (1930s–1940s)

The Random-Digit-Dialing Era (1950s–1990s)

The Cell Phone and Internet Era (2000s)
  - Collapsing telephone response rates (< 10%)
  - Shift to internet-based polls, many sampled using techniques similar to quotas (and heavily weighted).

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Presidential Approval

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## Trial Heats

<table>
<thead>
<tr>
<th>Poll</th>
<th>Date</th>
<th>Sample</th>
<th>MoE</th>
<th>Biden (D)</th>
<th>Trump (R)</th>
<th>Spread</th>
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<tbody>
<tr>
<td>RCP Average</td>
<td>9/16 - 9/30</td>
<td>--</td>
<td>--</td>
<td>49.7</td>
<td>43.1</td>
<td>Biden +6.6</td>
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<tr>
<td>Economist/YouGov</td>
<td>9/27 - 9/30</td>
<td>1350 LV</td>
<td>4.0</td>
<td>50</td>
<td>42</td>
<td>Biden +8</td>
</tr>
<tr>
<td>Reuters/Ipsos</td>
<td>9/25 - 9/29</td>
<td>864 LV</td>
<td>3.8</td>
<td>51</td>
<td>42</td>
<td>Biden +9</td>
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<tr>
<td>Rasmussen Reports</td>
<td>9/23 - 9/29</td>
<td>3000 LV</td>
<td>2.0</td>
<td>51</td>
<td>43</td>
<td>Biden +8</td>
</tr>
<tr>
<td>Monmouth*</td>
<td>9/24 - 9/27</td>
<td>809 LV</td>
<td>3.5</td>
<td>50</td>
<td>45</td>
<td>Biden +5</td>
</tr>
<tr>
<td>JTN/RMG Research*</td>
<td>9/24 - 9/26</td>
<td>752 LV</td>
<td>3.6</td>
<td>51</td>
<td>45</td>
<td>Biden +6</td>
</tr>
<tr>
<td>Harvard-Harris</td>
<td>9/22 - 9/25</td>
<td>LV</td>
<td>--</td>
<td>47</td>
<td>45</td>
<td>Biden +2</td>
</tr>
<tr>
<td>NY Times/Siena</td>
<td>9/22 - 9/24</td>
<td>950 LV</td>
<td>3.5</td>
<td>49</td>
<td>41</td>
<td>Biden +8</td>
</tr>
<tr>
<td>The Hill/HarrisX</td>
<td>9/22 - 9/25</td>
<td>2768 RV</td>
<td>1.9</td>
<td>45</td>
<td>40</td>
<td>Biden +5</td>
</tr>
<tr>
<td>ABC News/Wash Post</td>
<td>9/21 - 9/24</td>
<td>739 LV</td>
<td>4.0</td>
<td>54</td>
<td>44</td>
<td>Biden +10</td>
</tr>
<tr>
<td>Emerson</td>
<td>9/22 - 9/23</td>
<td>1000 LV</td>
<td>3.0</td>
<td>48</td>
<td>44</td>
<td>Biden +4</td>
</tr>
<tr>
<td>USC Dornsife</td>
<td>9/16 - 9/29</td>
<td>5096 LV</td>
<td>--</td>
<td>51</td>
<td>43</td>
<td>Biden +8</td>
</tr>
</tbody>
</table>
Aggregating Polls

Poll aggregators such as RealClearPolitics and FiveThirtyEight summarize the results of many polls. But how to summarize?

- RCP: Simple (rolling) average

Figure: Real Clear Politics poll average
Poll aggregators such as RealClearPolitics and FiveThirtyEight summarize the results of many polls. But how to summarize?

- **RCP**: Simple (rolling) average
- **538**: Local polynomial trend, weighting by poll quality and sample size and adjusting for house effects.
Forecasts
Polls versus Fundamentals

Polls (and poll averages) are not necessarily good forecasts. They are an estimate of where the race stands now (a “nowcast”), not where it is heading.

Sources of error in poll-based forecasts:

- Sampling variability (random)
- Sampling bias (e.g., undersampling of low-education white men in 2016)
- Real opinion change (semi-systematic, e.g., races tend to tighten)

Early in the campaign, fundamentals-based forecasts are often more predictive than polls-based. Polls became more predictive over time, partly because they move toward the fundamentals.
Combining Information

This suggests that we can obtain more accurate predictions by combining information derived from polls with that from the fundamentals.

Bayes’ rule:

\[
Pr(O \mid P, F) \propto Pr(O \mid F) \times Pr(P \mid O, F)
\]
Example: Bush vs. Dukakis (1992)

Predictions in 1992
Two-party vote share for George H. W. Bush, %

Raw polling

Fundamentals-based prediction

Polls-plus-fundamentals-based prediction

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The Economist’s Popular Vote Forecast for 2020

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The Economist’s Electoral College Forecast

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The Problem of Uncertainty

Forecasts have uncertainty, and ideally that uncertainty should be well calibrated.

- Forecasts with 80% certainty should be wrong 20% of the time.

A big challenge with election forecasts is there is not enough data to calibrate uncertainty, especially in the tails of the distribution.

States and other lower-level elections add additional information, but it’s hard to say how much since forecast errors are likely to be correlated across states.

- e.g., Trump’s overperformance in Wisconsin AND Michigan AND Pennsylvania
Correlation across States

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