

Did Trump Change Minds or Voters? Using Merged Voter Files and Precinct-Level Election Returns to Decompose the Sources of Electoral Change, 2012 to 2016

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- Long-standing question: what explains election-to-election changes in outcomes? (e.g. Campbell 1960, Hill 2017)

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- Coarsely speaking, two possibilities:

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 - **Turnout**: Changes in who votes (Hall and Thompson 2018)

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 - **Persuasion**: Changes in preferences of two-election voters

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- Math favors persuasion ($1 - (-1) > 1$)

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- Math favors persuasion ($1 - (-1) > 1$)
- Polarization, decline of floating voters may favor turnout (Smidt 2017)

Prior Approaches

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- Secret ballot → only know vote choice at precinct level

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 - 1 Panel data

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 - 1 Panel data → but survey response correlated with political engagement; may overstate persuasion
 - 2 Model-based approaches (e.g. Imai et al. 2008; Hill 2017) → but models of ecological inference can be sensitive to assumptions

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- Our approach = **data, measurement-oriented**: use multiple voter files from key states to observe precinct-level counts of turnout patterns

Choosing States

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- Seek states which:

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- Seek states which:
 - 1 are jointly demographically diverse

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- Seek states which:
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- Seek states which:
 - 1** are jointly demographically diverse
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 - 3** have available, affordable voter files after both 2012, 2016
(~~Arizona, Iowa, Wisconsin~~)

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 - 4 record partisan affiliation/partisan primary participation
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 - 5 record voting outcomes consistently at low levels of aggregation (~~North Carolina~~)

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- States analyzed here: Florida (FL), **Georgia (GA)**, Nevada (NV), **Ohio (OH)**, and Pennsylvania (PA)

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- To come: Michigan

Data Processing

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Within each state, we:

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- 2** tabulate number of precinct voters who fell into various categories by party, presence, voting (e.g. registered Democrat, present for both elections, voted in 2012)

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- 3 geo-code each 2016 registered voter; generate precinct-weighted demographic estimates from tract-level ACS data

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- 4** merge precinct-level election returns
- 5** apply filters to remove precincts with discrepancies/anomalies

Preliminary Results

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	FL	GA	NV	PA	OH
Total Precincts	5214.000	2814.000	1754.000	8870.000	8624.000
Complete Precincts	5015.000	2154.000	1620.000	8549.000	7115.000
Mean Dem Pct '12	0.512	0.436	0.510	0.565	0.496
Mean Dem Pct '16	0.484	0.442	0.463	0.517	0.416
Mean Dem Pct '16 - Dem Pct '12	-0.028	0.006	-0.047	-0.048	-0.080
Mean GOP Pct '12	0.473	0.553	0.469	0.422	0.478
Mean GOP Pct 12	0.470	0.531	0.469	0.449	0.518
Mean GOP Pct 16 - GOP Pct 12	-0.002	-0.022	0.000	0.027	0.040
Dem Turnout Pct 12	0.431	0.124	0.264	0.553	0.163
Dem Turnout Pct 16	0.411	0.136	0.270	0.541	0.172
Diff Dem Turnout Pct 16-12	-0.019	0.013	0.006	-0.012	0.009
GOP Turnout Pct 12	0.366	0.269	0.270	0.352	0.271
GOP Turnout Pct 16	0.356	0.270	0.274	0.351	0.286
Diff GOP Turnout Pct 16-12	-0.009	0.001	0.004	-0.001	0.015

Table: This table summarizes key political variables for five states.

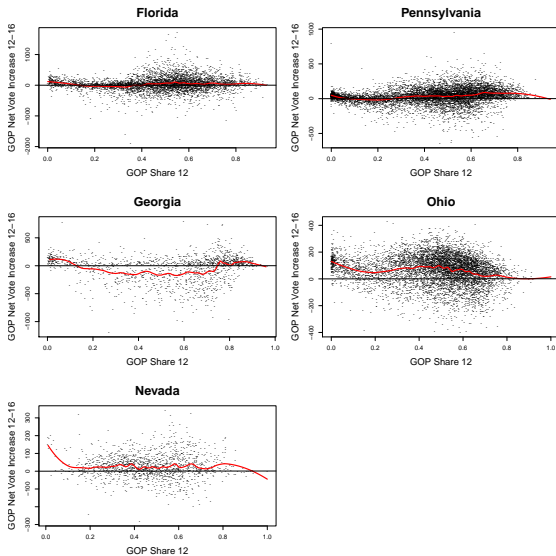


Figure: Net votes for GOP in 2016 in five states by 2012 share backing GOP.

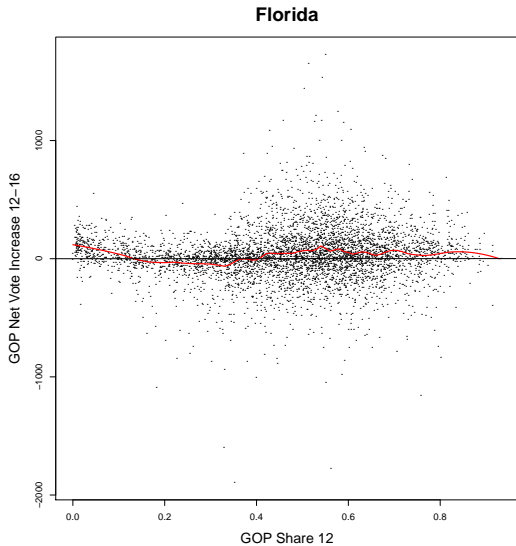


Figure: Net votes for GOP in 2016 in Florida by 2012 share backing GOP.

Pennsylvania

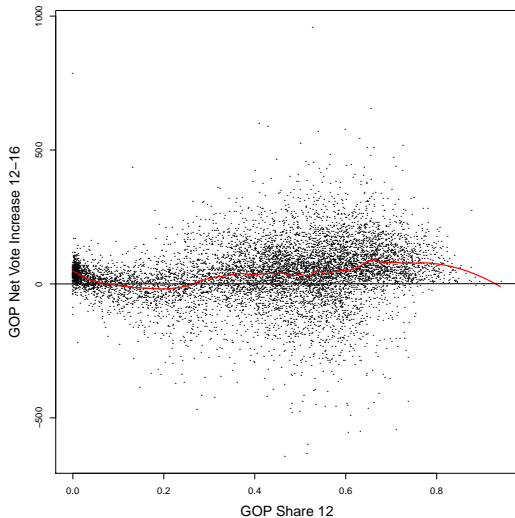


Figure: Net votes for GOP in 2016 in Pennsylvania by 2012 share backing GOP.

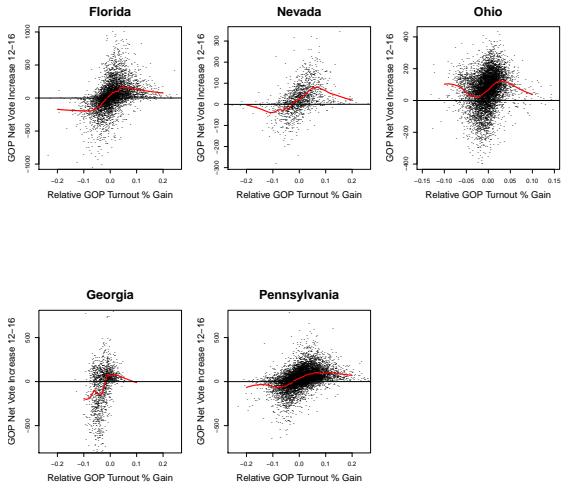


Figure: Net GOP gain in 2016 by turnout shifts among party registrants.

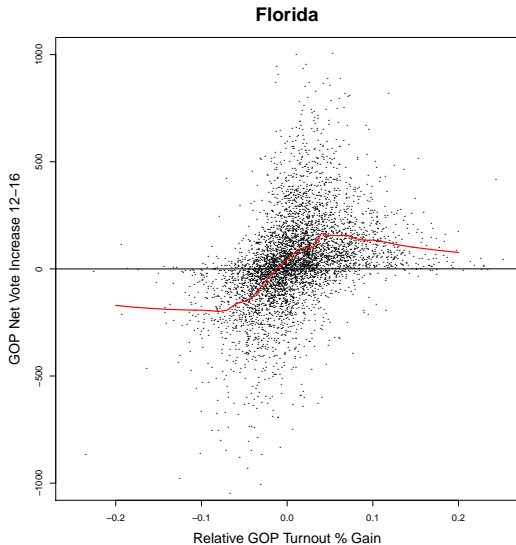


Figure: Net GOP gain in 2016 by turnout shifts among party registrants in FL.

Pennsylvania

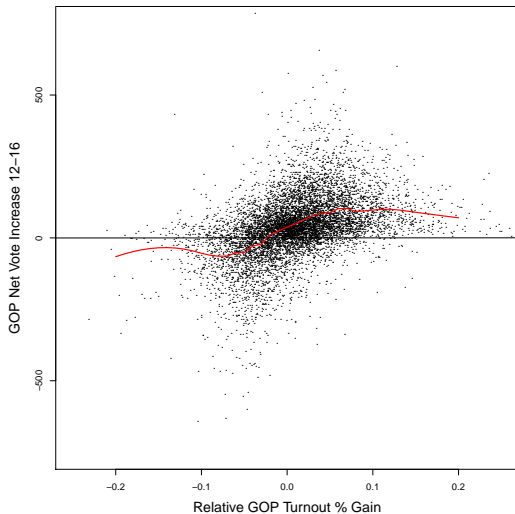


Figure: Net GOP gain in 2016 by turnout shifts among party registrants in PA.

Model-based Strategy 1

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- Fit OLS separately for each state
- Outcome = net 2016 GOP votes (e.g. (2016 GOP votes - Dem votes)-(2012 GOP votes - Dem votes))
- Two classes of independent variables:
 - tabulations of voters by party, vote history, presence
 - precinct-weighted Census demographics (e.g. % Over 65, % Under 18, % NH White, % NH Black, % Hispanic, % with BA, % Employed, % Employed in Manufacturing, etc.)
- Absent omitted variable bias, we have informative priors/expectations for several coefficients

	FL	GA	NV	PA	OH
Pres. '12 Voted '12 Dem.	1.243*	4.757*	0.962*	0.962*	2.592*
	(0.050)	(0.598)	(0.046)	(0.040)	(0.161)
Pres. '16 Voted '16 Dem.	-1.219*	-1.853*	-1.086*	-1.036*	-0.947*
	(0.033)	(0.169)	(0.040)	(0.027)	(0.080)
Pres. Both Voted Both Dem.	-0.061*	0.164*	-0.012	0.158*	0.119*
	(0.021)	(0.039)	(0.033)	(0.013)	(0.019)
Pres. Both Voted '12 Dem.	1.882*	-0.981	1.333*	1.191*	1.466*
	(0.114)	(0.564)	(0.119)	(0.058)	(0.225)
Pres. Both Voted '16 Dem.	-1.297*	-4.897*	-0.774*	0.313*	-1.641*
	(0.153)	(0.544)	(0.189)	(0.091)	(0.208)
Pres. '12 Voted '12 GOP	-1.310*	-2.671*	-0.994*	-1.159*	-1.906*
	(0.052)	(0.195)	(0.060)	(0.048)	(0.123)
Pres. '16 Voted '16 GOP	1.501*	2.005*	1.018*	0.966*	0.420*
	(0.028)	(0.109)	(0.041)	(0.030)	(0.038)
Pres. Both Voted Both GOP	-0.173*	0.149*	-0.102*	-0.040*	-0.006
	(0.019)	(0.028)	(0.028)	(0.014)	(0.014)
Pres. Both Voted '12 GOP	-1.848*	-3.832*	-0.549*	-0.754*	-2.043*
	(0.112)	(0.297)	(0.150)	(0.077)	(0.230)
Pres. Both Voted '16 GOP	0.916*	0.890*	1.574*	2.441*	1.909*
	(0.120)	(0.286)	(0.224)	(0.114)	(0.173)
Pres. '12 Voted '12 Unaff.	0.405*	0.369*	0.327*	0.395*	0.380*
	(0.099)	(0.061)	(0.099)	(0.102)	(0.047)
Pres. '16 Voted '16 Unaff.	-0.598*	-0.495*	-0.157*	-0.415*	-0.220*
	(0.055)	(0.064)	(0.070)	(0.073)	(0.029)
Pres. Both Voted Both Unaff.	0.465*	-0.222*	0.145	-0.817*	-0.042
	(0.049)	(0.049)	(0.079)	(0.051)	(0.022)
Pres. Both Voted '12 Unaff.	0.196	0.695*	0.451*	-0.002	0.197*
	(0.187)	(0.092)	(0.197)	(0.097)	(0.039)
Pres. Both Voted '16 Unaff.	1.348*	0.803*	0.455*	2.461*	0.692*
	(0.180)	(0.132)	(0.221)	(0.198)	(0.063)

Table: This table presents partial OLS results.

	FL	GA	NV	PA	OH
% over 65 '15	-120.134* (47.027)	-100.303 (123.469)	-73.359* (30.330)	-132.372* (23.707)	-217.651* (31.807)
% under 18 '15	-27.939 (46.971)	-143.637 (75.829)	3.168 (24.892)	-146.901* (17.119)	-88.653* (20.451)
Pop. Density '15	-0.001 (0.001)	-0.003 (0.003)	0.000 (0.000)	0.000 (0.000)	-0.007* (0.000)
Tot. Pop. '15	0.000 (0.001)	0.002 (0.001)	0.002* (0.001)	0.001* (0.000)	0.001* (0.000)
% w BA '15	-739.485* (37.618)	-670.059* (56.089)	-211.085* (21.029)	-216.515* (14.508)	-391.888* (15.929)
% w/o HS Degree '15	-148.676* (39.839)	-328.220* (54.900)	-12.301 (22.094)	-30.876* (14.799)	-51.187* (16.231)
% Employed '15	274.235* (33.576)	122.420* (58.132)	64.785* (19.736)	125.892* (12.341)	-21.762 (16.510)
% Unemployed '15	428.627* (88.722)	211.146 (128.396)	77.334 (48.539)	67.929* (31.151)	117.233* (39.547)
% Hispanic '15	-80.370 (86.241)	29.310 (199.215)	7.029 (25.006)	-11.637 (33.976)	126.125* (48.360)
% Foreign-Born Non-Cit. '15	6.688 (45.331)	265.094* (108.394)	-24.216 (29.563)	42.023 (27.463)	-130.691* (40.794)
% NH White '15	192.639* (86.644)	275.654 (189.885)	106.419* (21.350)	95.274* (33.493)	250.043* (43.903)
% NH As. Am. '15	-30.142 (123.161)	-205.689 (205.293)	69.128* (31.930)	-5.484 (40.201)	263.606* (60.709)
% NH Black '15	-99.742 (86.988)	187.977 (187.634)	54.576 (27.850)	14.910 (33.284)	164.322* (44.084)
Med. Hsh. Inc. '15	-0.001* (0.000)	-0.001* (0.000)	-0.000* (0.000)	-0.001* (0.000)	-0.000 (0.000)
% w SS Inc. '15	232.154* (42.194)	102.507 (81.506)	78.215* (25.349)	33.933* (16.993)	77.913* (22.514)
% w PA Inc. '15	231.622* (113.648)	127.258 (172.005)	-33.357 (48.305)	-63.403* (26.762)	-68.856* (35.045)
% Public Sec. '15	-46.240 (31.121)	28.744 (50.377)	18.757 (19.171)	175.737* (16.090)	153.546* (17.512)
% Manufacturing '15	-116.059 (60.603)	164.278* (51.667)	84.893* (34.491)	116.670* (14.953)	81.835* (13.611)

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Pres. '16 Voted '16 Unaff.	-0.598*	-0.495*	-0.157*	-0.415*	-0.220*
	(0.055)	(0.064)	(0.070)	(0.073)	(0.029)
Pres. Both Voted Both Unaff.	0.465*	-0.222*	0.145	-0.817*	-0.042
	(0.049)	(0.049)	(0.079)	(0.051)	(0.022)
Pres. Both Voted '12 Unaff.	0.196	0.695*	0.451*	-0.002	0.197*
	(0.187)	(0.092)	(0.197)	(0.097)	(0.039)
Pres. Both Voted '16 Unaff.	1.348*	0.803*	0.455*	2.461*	0.692*
	(0.180)	(0.132)	(0.221)	(0.198)	(0.063)

Table: This table presents partial OLS results.

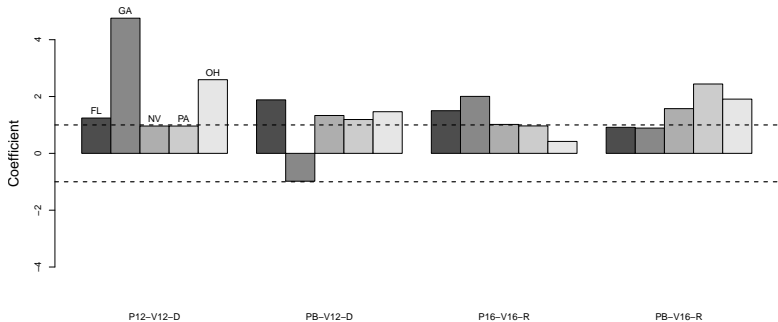


Figure: Coefficients for measures of partisan turnout changes.

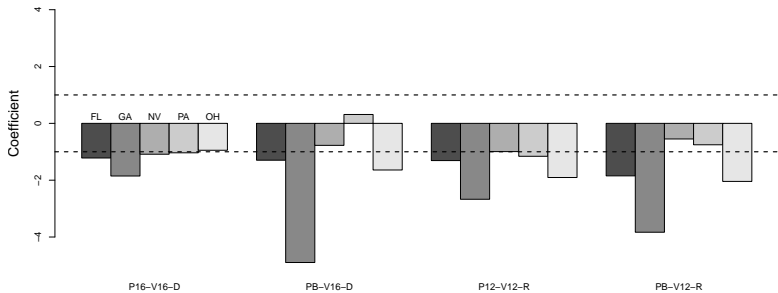


Figure: Coefficients for measures of partisan turnout changes.

Simulated Outcomes

Trump Changed Minds or Voters?

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State	N	Predicted, Observed	Predicted, No 2016-Only
FL	5015	36.00	81.19
GA	2154	-49.51	-13.78
NV	1620	26.10	64.27
PA	8549	38.16	31.22
OH	7115	66.66	47.41

Table: This table presents the estimated shift to the GOP candidate in 2016 given two scenarios estimated using the models above. In the first scenario, all precincts are set to their observed values for all variables. In the second scenario, all 2016-specific turnout is set to zero.

Model-based Strategy 2

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- Use Ecological Inference model of counts outlined in Hill (2017) on homogeneous subsets of precincts
- Here: analyze 575 precincts that are more than 90% non-Hispanic Black, less than 20% with BAs

	Profile	Share	N
	Obama → Clinton	0.552	(194176)
	Obama → Trump/other	0.007	(2347)
	Obama → Abstain/move	0.259	(91080)
	Romney/other → Clinton	0.001	(502)
	Romney/other → Trump/other	0.013	(4514)
	Romney/other → Abstain/move	0.003	(888)
	Abstain/new → Clinton	0.156	(54816)
	Abstain/new → Trump/other	0.010	(3451)

Table:



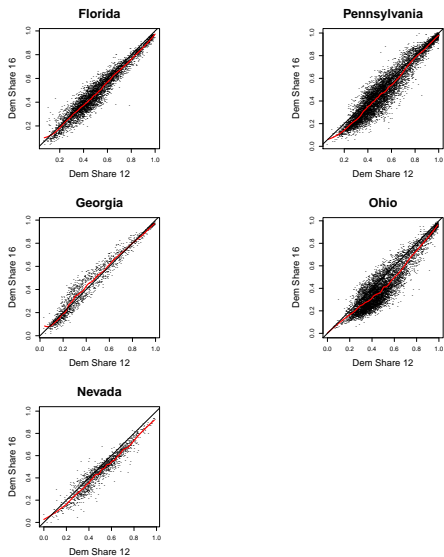


Figure: Share voting Democratic in 2012, 2016.