

Analysis of the 2000 & 2004 Presidential Elections

Voter Characteristics and Voter Tendencies

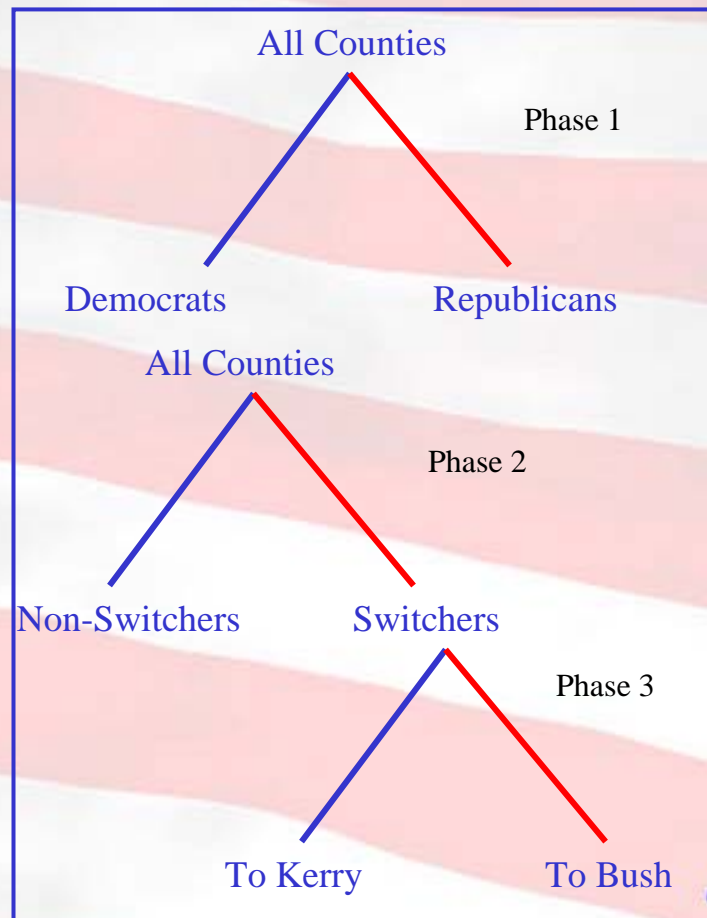


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Goals of Study

- Phase #1: Profile Republicans (Reps) and Democrats (Dems)
- Phase #2: Profile Party Switchers from 2000 to 2004
- Phase #3: Profile those switching to Kerry and those switching to Bush



Variables

- 2000 Winner
- 2004 Winner
- Switch parties
- Bush 2000 Votes
- Bush 2000%
- Gore 2000 Votes
- Gore 2000%
- 3rd Party % 2000
- Bush 2004 Votes
- Bush 2004%
- Kerry 2004 Votes
- Kerry 2004%
- 3rd Party % 2004
- Marital status
- Land area, 2000
- Population, 2000
- Population density, 2000
- Population: % change, 1990-2000
- Median age, 2000
- Males per 100 females, 2000
- % Population white, 2000
- % Bachelor's degree or higher, 1990
- Unemployment rate, 2000
- Personal income: % change, 1990-1998
- Income per capita, 1998



Data Sources

- Census Data
- Bureau of Economic Analysis
- <http://spatialnews.geocom/features/election2000>
- www.cnn.com



Data Caveats

- County level data
- Can't account for candidate appeal
- Bush, Gore, and Kerry are proxies
- Predictor variables same for 2000 and 2004
- Some variable data from different years
- Only two election cycles
- Ignores electoral weights



Data Selection Criteria

- Availability of data
 - Missing for some predictor variables
 - AK, CT, NH, ME, RI don't keep county level data
- Common Sense
 - Domain knowledge
 - Correlated data
- Fitting of Initial Models
 - p-values of variables



Summary Statistics

- 3013 counties
 - 2004: 2490 (Bush), 520 (Kerry), 3(Tie)
 - 2000: 2376 (Bush), 637 (Gore), 0 (Tie)
 - Switch: Gore to Bush (201) , Bush to Kerry (85)

Percentage of Counties By Margin of Victory			
2000 Results		2004 Results	
Bush 10%+	63%	Bush 10%+	71%
Bush 3-10%	11%	Bush 3-10%	9%
Bush <3%	4%	Bush <3%	3%
Gore <3%	4%	Kerry <3%	2%
Gore 3-10%	6%	Kerry 3-10%	5%
Gore 10%+	11%	Kerry 10%+	9%



2004 Summary Statistics

	Bush Median	Kerry Median	% of St.Dev. Difference
% White	92.60	79.10	84%
Median Age	37.60	36.10	38%
Unemployment	4.10	4.90	31%
% Bachelor's Degree	11.50	12.95	23%
Personal Income Growth % (1990-1998)	48.50	45.65	13%
Income / Capita (% National Avg.)	75.00	77.35	13%
Population Growth % (1990-2000)	8.90	6.90	13%
Population	23202.50	40046.50	6%
% Males	0.49	0.49	3%
Population / sq.mi.	40.10	55.60	2%
Land area (sq.mi.)	618.00	602.00	1%



Exploratory Research: Cluster Analysis

- K-Means Method
 - Added the % Difference in Votes Variable
 - Two Clusters Optimal
 - Cluster 1 predominantly contained Republican switchers with the following characteristics relative to Cluster 2:
 - Never Married
 - Minority
 - High pop density
 - Slightly more educated
 - Smaller pop growth
 - Higher unemployment
 - Slightly younger
 - Higher avg income

Cluster	% Diff 2000	% Diff 2004	Never Married	MARRIED	Pop/Sq Mile	Population Growth: 1990-2000	Median Age	Males per 100 females	Percent White	Bachelor's degree or higher	Unemployment	Personal income: percent change	Personal income, per capita, 1998: percent of national average	No-Rep	No-Dem	Yes-Rep	Yes-Dem
Cluster-1	14%	17%	25%	56%	314.0	10.4	36.0	98.4	77.4	14.6	5.4	49.7	79.1	56.8%	26.9%	10.6%	5.7%
Cluster-2	33%	39%	18%	64%	56.1	12.0	38.8	98.6	92.2	12.0	4.1	48.8	75.8	93.9%	2.9%	3.0%	0.2%



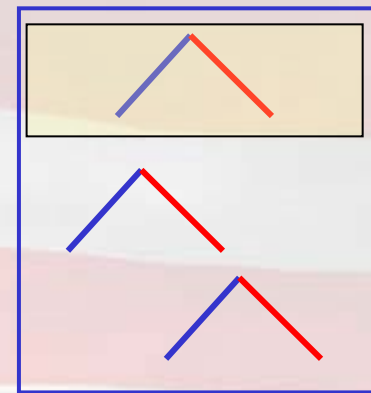
Phase 1: Dems vs. Reps

Method: Logistic Regression

Success Class: Bush

Error Rate: 6.81%

Cutoff: 0.5



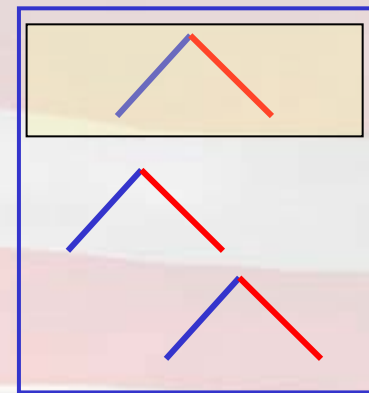
Input variables	Coefficient	Std. Error	p-value	Odds
Constant term	-29.21725845	3.34135723	0	*
Bush 2000 Percent	0.37580416	0.03386881	0	1.45616186
Gore 2000 Percent	0.10071401	0.03100223	0.00115972	1.10596025
Married (%)	0.13556893	0.01445442	0	1.14518809
Population: percent change, 1990-2000	0.01785681	0.00627726	0.00444555	1.01801717
Personal income, per capita, 1998: percent of national average	-0.01064868	0.00410504	0.00948523	0.98940784

- If the percentage of Bush voters in a county in 2000 increased by 1%, the odds they voted for him in 2004 increased by 1.45.



Phase 1: Dems vs. Reps

Best Method: Logistic Regression



Voter Characteristic	Republican	Democrat
Population Growth	Higher growth benefits Republican	Lower growth benefits Democrat
Income per capita	Higher income benefits Republican	Lower income benefits Democrat
Previous Voting %	Voted Republican	Voted Democrat
Marital Status	More married couples benefits Republicans	More single people benefits Republicans

Accuracy: 6.81% error rate



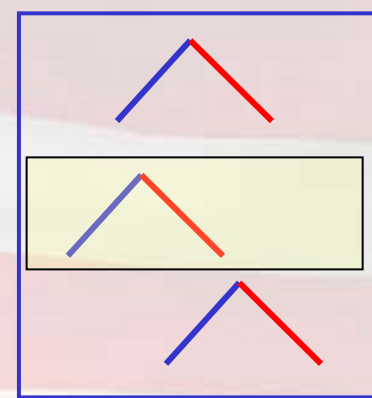
Phase 2: Switchers vs. Non Switchers

Method: Logistic Regression

Success Class: Switched

Error Rate: 38%

Cutoff: 0.095



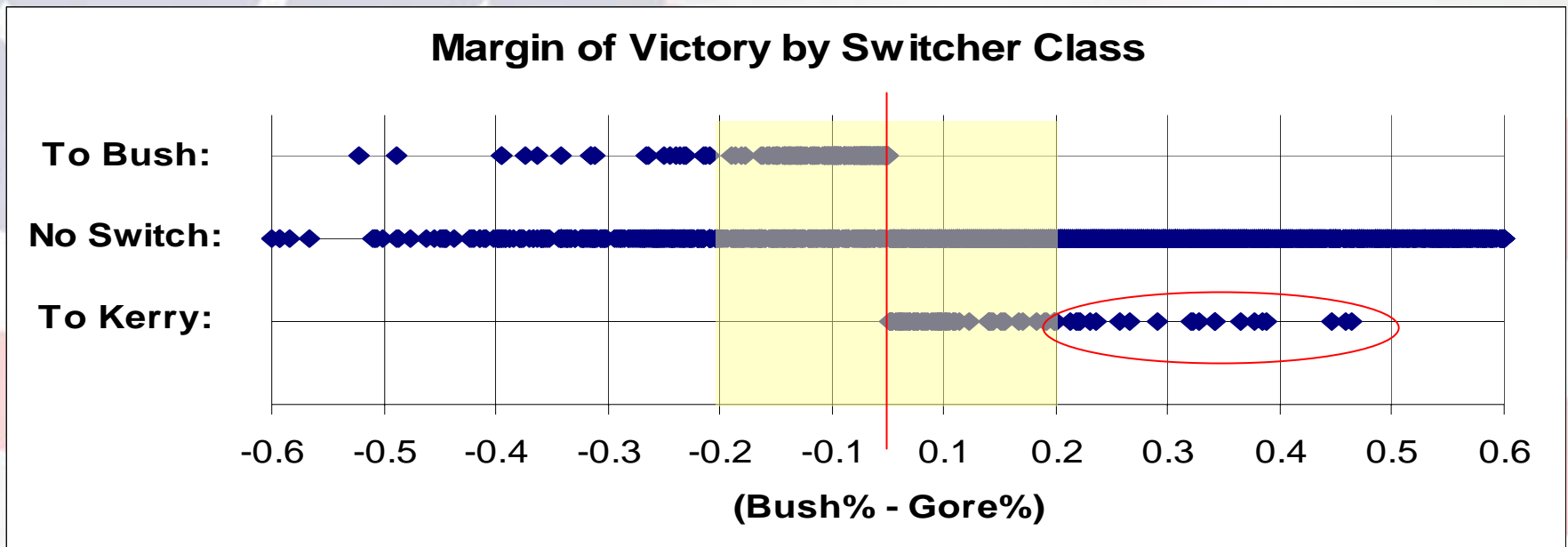
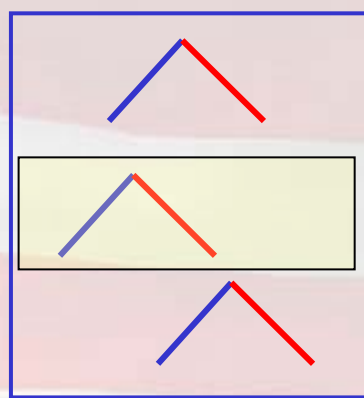
Input variables	Coefficient	Std. Error	p-value	Odds
Constant term	-2.33875346	0.06697287	0	*
MARRIED	-0.30277863	0.05770053	0.00000015	0.73876262
Land area, 2000 (sq. miles)	-0.29714692	0.1049903	0.00465142	0.74293482
Civilian labor force, unemployment, 2000: rate	0.1690321	0.05761117	0.00334607	1.18415821

- If a county has 1% higher unemployment, it will have 1.18 odds of switching in the next election holding all other variables constant.



Phase 2: Switchers vs. Non-Switchers

Margin of victory in the 2000 election is relevant



- Intuitively, we find that if a county was on the fence in 2000 the more likely the county was to switch in 2004.
- However, more counties that voted solidly Bush in 2000 switched than counties that voted solidly Gore (despite the Bush mandate)



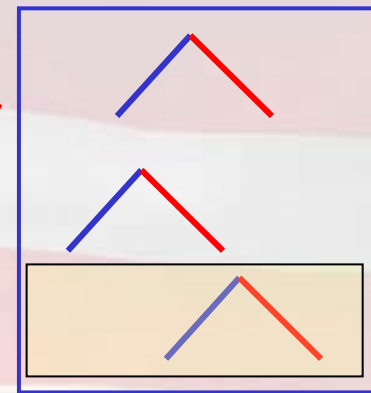
Phase 3: Switchers Profile

Method: Logistic Regression

Success Class: Yes-Bush

Error Rate: 23.78%

Cutoff: 0.5

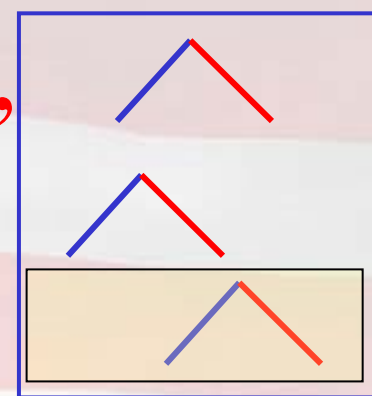


Input variables	Coefficient	Std. Error	p-value	Odds
Constant term	-3.3919	1.7495	0.0525	*
Absolute Margin	-0.0283	0.0129	0.0280	0.9721
Married	0.1007	0.0287	0.0005	1.1059
Land area, 2000 (square miles)	-0.0005	0.0002	0.0219	0.9995
Bachelor's degree or higher, 1990 (% of population)	-0.0670	0.0207	0.0012	0.9352

*Counties that have 1% more married couples have 1.1 odds of switching to Bush.



Characteristics of “Switchers”



	2000 Margin (% points)	2004 Margin (% points)	% Never Married	Land Area (sq. mi.)	Population	Population per sq. mi.	Males per 100 Females	% Bachelor's Degree or higher	Income per Capita, % of National Avg.
AVERAGE									
- To Bush	0.07	0.12	0.22	654.03	72,150.42	169.97	96.89	11.70	75.22
- To Kerry	0.11	0.09	0.27	961.35	128,763.73	299.32	99.78	16.49	80.37
MEDIAN									
- To Bush	0.04	0.07	0.21	537.00	31,314.00	58.50	95.40	10.30	72.90
- To Kerry	0.05	0.05	0.26	664.00	18,251.00	32.20	97.60	13.70	79.30
StDev	0.10	0.13	0.05	673.76	176,039.40	557.89	8.22	7.16	19.90

- Densely populated, male dominated, more educated and higher-income counties tended to switch to Kerry.



Summary of Findings

- A previous close absolute margin of victory in the 2000 election is the most significant characteristic of “switchers”.
- Within the “Switcher” class:
 - Counties switching to Bush were likely to have a greater percentage of married couples
 - Counties switching to Kerry are likely to have a greater percentage of people with college degrees
 - The absolute margin of victory in the 2000 election was greater in counties that switched to Kerry than counties that switched to Bush



Questions ?



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