Predict 2020 USA Presidential Election COVID-19 Correlation

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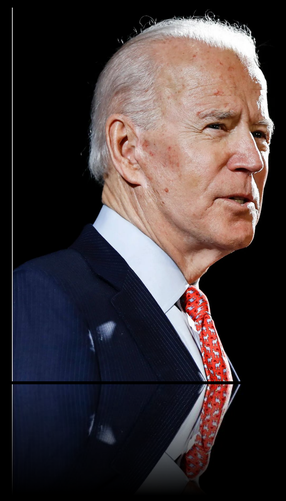
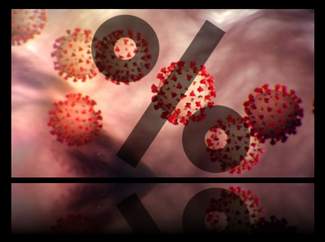
- **Problem:**
  - Should Trump liberate states, or not? And which states should he consider liberating?
  - How can Trump strategize liberating states to help him win the election in this pandemic?
- **Objectives:**
  - Establish a statistical model on studying the COVID-19 and Jobless Rate on 2020 USA Presidential Election Result- on the Swing States
  - What are the risk and consequence if liberating these three swing states on April 17?
  - Which Swing states that Trump should consider to reopen the Business First?





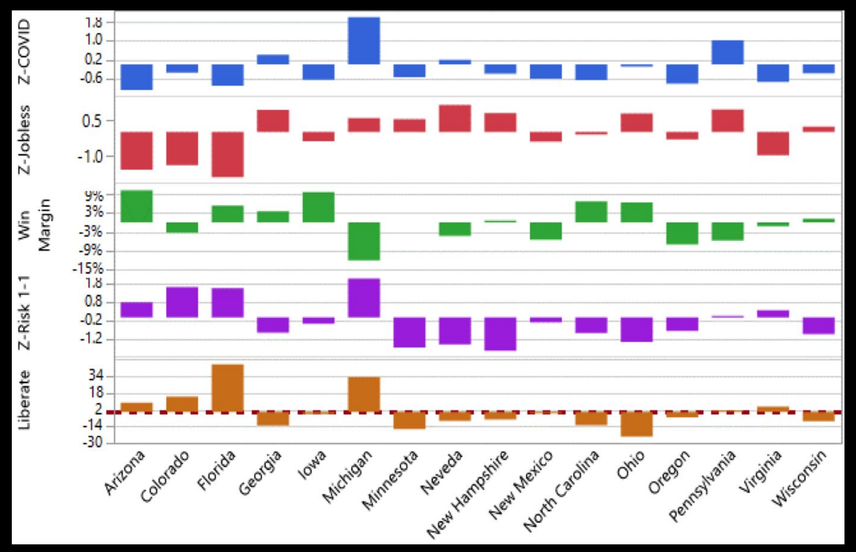
Trump prefers **negative** "Z-COVID"

Trump prefers **negative** "Z-Jobless"

Trump prefers **positive** "Win Margin"

Trump prefers **negative** "Z-Risk 1-1"

Trump prefers **negative** "Liberate"



State	2020 Votes	Z-Infected	Z-Death	Z-Unemployment	Z-COVID	2020 Win Margin	Z-Risk 2-1	Z-Risk 1-1	Liberate Index
Ohio	18	-0.68	-0.37	0.80	-0.08	6.34%	-1.85	-1.32	-23.82
Minnesota	10	-1.41	-0.74	0.56	-0.53	-0.01%	-2.71	-1.64	-16.35
Georgia	16	0.26	0.00	0.96	0.41	3.53%	-0.70	-0.83	-13.25
North Carolina	15	-1.14	-0.74	-0.10	-0.66	6.75%	-1.78	-0.84	-12.58
Wisconsin	10	-0.99	-0.37	0.23	-0.37	1.17%	-1.59	-0.91	-9.13
Nevada	6	-0.40	-0.19	1.16	0.19	-4.28%	-1.74	-1.45	-8.72
New Hampshire	4	-1.43	-0.55	0.81	-0.39	0.60%	-2.79	-1.80	-7.20
Oregon	7	-1.38	-0.74	-0.32	-0.81	-7.00%	-1.79	-0.73	-5.13
Iowa	6	-0.77	-0.74	-0.40	-0.64	9.66%	-1.10	-0.35	-2.11
New Mexico	5	-0.82	-0.55	-0.41	-0.59	-5.53%	-0.96	-0.28	-1.38
Pennsylvania	20	1.36	0.73	0.97	1.02	-5.79%	1.11	0.07	1.39
Virginia	13	-0.67	-0.55	-0.99	-0.74	-1.22%	-0.23	0.38	4.97
Arizona	11	-1.08	-0.55	-1.62	-1.08	10.23%	-0.01	0.81	8.89
Colorado	9	0.22	0.18	-1.43	-0.34	-3.23%	1.84	1.63	14.70
Michigan	16	2.10	3.30	0.61	2.00	-12.10%	4.80	2.10	33.54
Florida	29	-0.37	-0.37	-1.94	-0.89	5.41%	1.20	1.57	45.59

Analysis

- **Upload COVID-19 infected and death cases per 100k, and annual unemployment increase rate**
- To avoid sampling mean and variance bias, **apply Z-standardized transformation** on raw data
- Derive the Z-COVID Index by averaging out previous three Z-scores
- Calculate the 2020 Win Margin with the 2016-2012 Composite Win Margin, standard deviation of the 2016-2012 average, and Z-COVID Index
- Derive the Z-Risk 2-1 and 1-1 Index by averaging out previous three Z-scores
- Calculate the Liberate Index by multiplying the Z-Risk 1-1 with 2020 Votes
- **Liberate Index splits swing states into 3 different groups: green is hard to get back, red is already with Trump and white are the "true swing states"**

Recommendations

- **Scenario One**: President Trump will lose Pennsylvania (20 Votes) and Michigan (16 Votes) due to worse COVID and Jobless Issues. Though Trump will win back New Hampshire (4 Votes).
  - President Trump will win by 7 Votes above the break even line: 39-36 +4= 7
  - Recommend President Trump to give up Pennsylvania and Michigan States unless COVID-19 situation gets much better within the next couple of months
- **Scenario Two**: President Trump may lose Florida (29 Votes) and win Minnesota (10 Votes) and Virginia (13 Votes)
  - President Trump may still win by only 1 Vote above the break even line: 7-29 +23= 1
  - Recommend President Trump to take care of Florida State.
    - it's safer to liberate Minnesota State in late April, but still risky to liberate Virginia State in April