

Political Donations and Stock Prices

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Hypothesis

Our belief was that companies would donate to politicians who generally aligned with their interests. As a result of this, one might expect that the success or failure of candidates a company donated to would have an impact on their stock price following election day. Specifically, we wanted to test if companies who donated more to winning candidates experienced a higher percent change in stock than companies who donated more to losing candidates.

Data

We scraped the stock prices of S&P 500 companies from Yahoo Finances, gathering information about stock prices surrounding election days in 2012, 2014, 2016. We then used web scraping the OpenSecrets API to get donation information for those companies in those election cycles. Lastly, we used the CRSP database to gather information like market cap and beta values for those companies. Some outliers in percent change in stock price resulted from penny stocks where the valuation was less than \$.10. A single cent change in the price of these stocks corresponded to a large value for percent change in price. We excluded these from our analysis, since changes in price resulted in significant percent changes. Furthermore, a huge change in price of stock compared to the rest of the companies similar to it likely indicates that a factor unrelated to the political outcome was at play, so the data is better left unused. We created an interactive visualization of the 2016 data here: <http://nikitaramoji.com/snazzy-sports-capstone/>.

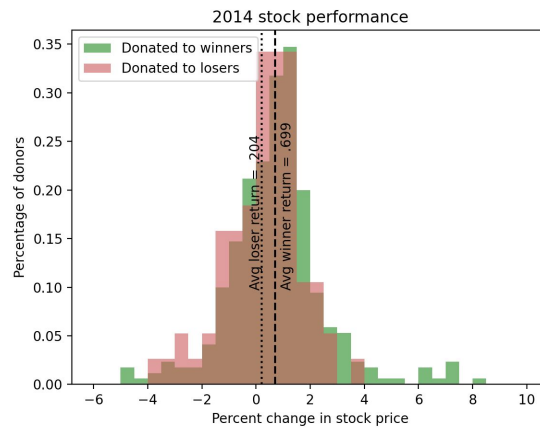
Findings

Claim #1: Companies that donated more to winning candidates performed better in the stock market than companies that donated more to losing companies.

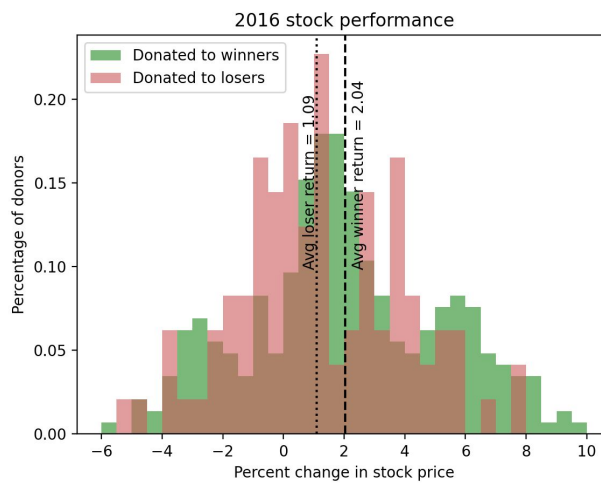
Support for Claim #1:

We ran a 2 sample T-test on the mean change in stock price for 2014 and 2016, and found that there was a significant difference between the two means, getting p-values of 0.0392 and 0.0163 respectively. In 2014, companies that donated more to winners got an average of +0.699 as opposed to +0.204. In 2016, companies that donated more to winners got an average of +2.04 as opposed to +1.09.

2014 Graph



2016 Graph



Claim #2: The success of candidates plays a significant role in this increase in stock prices.

Support for Claim #2:

We ran a multivariate regression on donations, controlling for the year, party of candidate, political chamber, market cap, and previous percent increase in stock price. Overall, we found a significant positive coefficient on candidate success, with a coefficient of around 0.14 and a very small p-value ($\lll 0.05$).

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Dep. Variable:          pct_chg      R-squared:                0.260
Model:                  OLS          Adj. R-squared:           0.260
Method:                 Least Squares  F-statistic:              2901.
Date:                   Thu, 07 May 2020  Prob (F-statistic):       0.00
Time:                   17:53:31      Log-Likelihood:           -2.0741e+05
No. Observations:      82424         AIC:                      4.148e+05
Df Residuals:          82413         BIC:                      4.149e+05
Df Model:               10
Covariance Type:       nonrobust
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              coef      std err          t      P>|t|      [0.025      0.975]
-----+-----+-----+-----+-----+-----+-----
const                1.6807      0.038      44.649      0.000        1.607        1.754
candidate_won         0.2387      0.029       8.155      0.000         0.181         0.296
is_pres              -0.2131      0.066      -3.240      0.001        -0.342        -0.084
is_senate            -0.1136      0.030      -3.794      0.000        -0.172        -0.055
is_2012              -4.4604      0.029     -155.320      0.000        -4.517        -4.404
is_2014              -2.0187      0.026     -79.004      0.000        -2.069        -1.969
prev_pct_chg         -0.0687      0.009      -7.282      0.000        -0.087        -0.050
market_cap           -0.0008      0.000      -6.966      0.000        -0.001        -0.001
donation_amt         -0.0002      0.001      -0.155      0.877        -0.002         0.002
dem_won              -0.0968      0.024      -4.015      0.000        -0.144        -0.050
betav                 0.8571      0.020      43.069      0.000         0.818         0.896
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Omnibus:                19990.665      Durbin-Watson:            0.031
Prob(Omnibus):          0.000          Jarque-Bera (JB):        400411.410
Skew:                   -0.669         Prob(JB):                 0.00
Kurtosis:               13.714         Cond. No.                 751.
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