Motivation

On July 6, 2018, President Trump’s administration imposed tariffs on $34 billion worth of Chinese goods, including televisions, aircraft parts, and medical devices. In retaliation, China responded by imposing tariffs on agricultural products. China’s decision to impose retaliatory tariffs has had an unfortunate consequence on the agricultural producers of the US—particularly on soybean producers. Many farmers across different states in the U.S. support the Republican party and President Trump.

Method

• Using Ordinary Least Square (OLS) regression, I estimate the factors that contribute towards the reduction/growth in Percent Change in Democratic Vote Share from 2016 to 2018.
• Dependent variable is Change in Democratic Vote Share from 2016 to 2018.
• Independent variables include, Soybean production 2018, Change in Republican Vote Share (2008-2010), Median Household Income, and Unemployment rate.

Results

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Estimates Change Dem Share 16 to 18</th>
<th>CI</th>
<th>p</th>
<th>Estimates Change Dem Share 16 to 18</th>
<th>CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in Democratic Vote Share 16-18</td>
<td>1.34</td>
<td>0.67 – 2.01</td>
<td>&lt;0.001</td>
<td>1.41</td>
<td>0.81 – 2.01</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Soybean Production in 2018</td>
<td>0.17</td>
<td>0.08 – 0.25</td>
<td>&lt;0.001</td>
<td>0.07</td>
<td>-0.01 – 0.14</td>
<td>0.089</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>-0.02</td>
<td>-0.14 – 0.10</td>
<td>&lt;0.001</td>
<td>-0.14</td>
<td>-0.25 – 0.03</td>
<td>0.015</td>
</tr>
<tr>
<td>Median Household Income</td>
<td>-0.15</td>
<td>-0.25 – 0.05</td>
<td>0.003</td>
<td>-0.07</td>
<td>-0.16 – 0.02</td>
<td>0.105</td>
</tr>
<tr>
<td>Change in Republican Vote Share 08-10</td>
<td>-0.30</td>
<td>-0.39 – 0.20</td>
<td>&lt;0.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>512</td>
<td>496</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R² / R² adjusted</td>
<td>0.045 / 0.039</td>
<td>0.095 / 0.088</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Limitations

• The vote share is calculated such that it only considers the Republican and Democratic votes as total votes in our model. It excludes votes received by other parties that participated in the elections for the years mentioned in the model.
• USDA has not reported soybean production data for many counties in 2018 which reduces number of observations when regressing the dependent variable to the independent variables in the model.
• The votes drop off from presidential election to midterm election is not accounted in the model.

Data (2008 – 2018)

• Our soybean production data from 2008 to 2018 comes from United States Department of Agriculture (USDA).
• Our election data for House of Representative comes from Secretary of State website from each state secretary’s website.
• Our Median Household Income and Unemployment rate data comes from either American Community Survey (ACS) or Bureau of Labor Statistics (BLS).

Conclusion

• From our regression results, we can see that soybean production in 2018 had some effect in change in Democratic vote shares from 2016 to 2018 when change in Republican vote shares from 2008 to 2010 was not controlled for in the model.
• However, this effect is reduced as soon as we control for historical voting pattern, the change in Republican vote share from 2008 to 2010.
• Lastly, our analysis is only able to explain very little about the variance in change in Democratic vote share since R-square is very low.

Objective

To examine if counties with high level of soybean production were more likely to shift votes to Democratic candidates to punish the incumbent party for its policy that adversely affected the soybean producers in the following states: Nebraska, Iowa, Kansas, Oklahoma, Missouri, Arkansas, Indiana, Ohio, North Dakota, and South Dakota.

Research Question

Are counties with high soybean production levels more likely to shift their votes to Democratic candidates?