

Bean Counters: The Effect of Soy Tariffs on Change in Republican Vote Share between the 2016 and 2018 Elections

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How do trade wars affect voting for the president's party? President Trump's aggressive tariffs on China, despite his largely rural electoral support base, provide a unique opportunity to analyze the relationship between international trade policy and domestic support. If trade-related considerations were ever decisive to American voters, the stark decrease in soy prices, a direct effect of Trump-initiated tariffs immediately preceding the 2018 midterm election, serves as a critical test for studying their effect. This article shows a robust inverse relationship between county-level soybean production and the change in Republican vote share between the 2016 and 2018 congressional elections.

President Donald Trump shook up trade policy, otherwise typically little watched by the public, with several aggressive tariff actions (Noland 2018). This, in turn, provoked retaliation, notably by China (Li, Zhang, and Hart 2018; Liu and Woo 2018), whose trade barriers targeted President Trump's rural-skewing support base (Monnat and Brown 2017). China's tariffs particularly threatened the soybean sector, which comprised roughly two-thirds of American agricultural exports to China. As the world's largest soybean importer, China had considerable power in soybean markets (Taheripour and Tyner 2018). This market power directly reached American farmers, as China in 2016 imported \$14 billion of American soybeans, over a third of the year's total production of \$41 billion. Unsurprisingly, upon imposition of Chinese tariffs, American soybean prices fell rapidly; the cost of a bushel of soybeans had hovered within a few cents of \$10.25 for most of spring 2018 but fell by over a dollar in June as tariffs bit, ultimately reaching a 10-year low in September during the fall harvest. Even after some recovery, the price remained around \$9.00 at the end of 2018. Soybean producers' revenue thus fell by over 10% from what might

have been anticipated during the planting season, with profits falling concomitantly further.

The soybean sector was not a trivial economic interest: soybeans were the United States' second most valuable crop (behind maize), and output had, spurred by surging Chinese demand, increased dramatically in recent years (USDA 2018). Moreover, this trade conflict's costs would affect not just soybean producers themselves but also whole communities, as soybean farmers' reduced income affected sales of local service providers and even asset values of neighboring homeowners (Scheve and Slaughter 2001). While Secretary of Agriculture Sonny Perdue announced a multi-billion-dollar bailout to ameliorate the trade war's effect on farmers, relatively few of these funds were disbursed promptly, and the effort was perceived as not nearly covering farmers' losses (Rappeport 2018).

Voters in soybean-producing areas thus had an unusually stark impetus to pay attention to, and make electoral decisions because of, trade policy. Indeed, support for Trump and his Republican Party marks a critical test of the relevance of international political economy to American voters: with a

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Data and supporting materials necessary to reproduce the numerical results in the article are available in the *JOP* Dataverse (<https://dataverse.harvard.edu/dataverse/jop>). An online appendix with supplementary material is available at <https://doi.org/10.1086/709434>.

clear shift in market conditions widely attributed to American trade-policy choices, trade policy had unparalleled visibility and importance. If trade-related considerations were ever pivotal in Americans' decisions of whether and for whom to vote, November 2018's general election in soybean country would be the context.

To determine whether voters punish the incumbent president's party for economically consequential international-trade policies, we model the change in the Republican vote share between the 2016 and 2018 elections to the House of Representatives as a function of county-level soy production. We find strong evidence that voters hold the president's party accountable for trade policies. Counties heavily reliant on soy production shifted against the Republican Party by as much as 20 percentage points more than we would otherwise expect.

TRADE POLICY AND VOTING BEHAVIOR

Our central research question asks how trade wars affect support for incumbent political parties. In the United States, trade's economic costs have translated to electoral penalties for incumbents in two ways. First, locales most disadvantaged by free trade may increase support for Democrats, who favor worker compensation and other redistributive policies (Che et al. 2016). Alternatively, trade-induced losses may spark economic nationalism—a protectionist sentiment blaming domestic economic misfortunes on out-groups (e.g., foreigners). Research has observed both electoral responses to trade shocks: Autor et al. (2017) find voters in ethnically diverse districts responding to economic shocks by supporting politicians who advocate for worker compensation policies, while districts with majority non-Hispanic white populations react by increasing support for right-wing, protectionist candidates. Margalit (2011) finds that, while job losses generally cost incumbents votes, this effect doubles in size when offshoring, rather than other factors such as domestic competition, caused the job loss (also see Jensen, Quinn, and Weymouth 2017; Kleinberg and Fordham 2013).

While most past research examined backlash against free trade and globalization, the election of Donald Trump set up a critical test of the reverse effect: whether voters also punish politicians for adverse economic effects of protectionism. Elected on an economically protectionist platform, Trump quickly delivered the promised tariffs against China, which were promptly reciprocated by Chinese tariffs against US-produced soy—a production staple of Trump's agricultural support base. The sharp decrease in demand for soybeans led to a substantial price drop, economically imperiling soybean farmers and their communities. Sections of Trump's rural base thus had unusually strong cause to infer a direct

link between trade policy and their personal well-being. This strong policy salience is, however, countered not only by the low baseline lack of interest in foreign affairs but also by intense partisan polarization (Abramowitz and Webster 2016; Gelman et al. 2016). In addition, the separation of power between Congress and the president—with the latter not facing reelection until 2020—may have diluted the clarity of responsibility and tempered soybean communities' ability to hold policy makers accountable in the 2018 elections (Hellwig and Samuels 2008). This article aims to use data on the change in the county-level Republican vote share between the 2016 and 2018 congressional elections to test whether locales highly reliant on soy production saw shrinking support for the Republican Party.¹

RESEARCH DESIGN

The dependent variable is the change in Republican vote share between the 2016 and 2018 general elections to the House of Representatives, Δ Republican Votes, measured as the difference in Republican vote share out of the two-party vote:

$$\frac{\text{Rep 2018}}{\text{Rep 2018} + \text{Dem 2018}} - \frac{\text{Rep 2016}}{\text{Rep 2016} + \text{Dem 2016}}$$

To construct the measure, we assembled county-level vote totals for the two major parties in the 2016 and 2018 general elections for US Representatives. We excluded Alaska (for which county-equivalent units are not consistently defined) and counties where elections were not contested in both election years, since some states do not report votes for uncontested races.² The resulting sample includes 2,414 counties from 49 states.

Figure 1 shows the spatial distribution of the dependent variable. The prevalence of blue accords with pundits' "blue wave" trope describing widespread electoral gains by Democrats. The map colors, of course, solely indicate changes in vote share between the two elections, not actual electoral outcomes. For example, North Dakota elected a Republican to the US

1. With the president not on the ballot in the midterm, we opt for comparing votes for the US Representatives, arguing that a change in the Republican Party's share of the House vote reflects, in part, voters' reaction to the tariffs and their consequences. Although a vote for the Republican Party is obviously not the same as a vote for Trump, in recent elections, voters have demonstrated an increasing tendency to vote for the same party for both congressional and presidential elections. Votes for members of Congress increasingly reflect views of parties rather than views about specific candidates (Fiorina 2017; Jacobson 2015; Sievert and McKee 2019).

2. Reported results include Pennsylvania, which redrew congressional-district boundaries between 2016 and 2018. Omitting redistricted counties from the data set does not substantially change results.

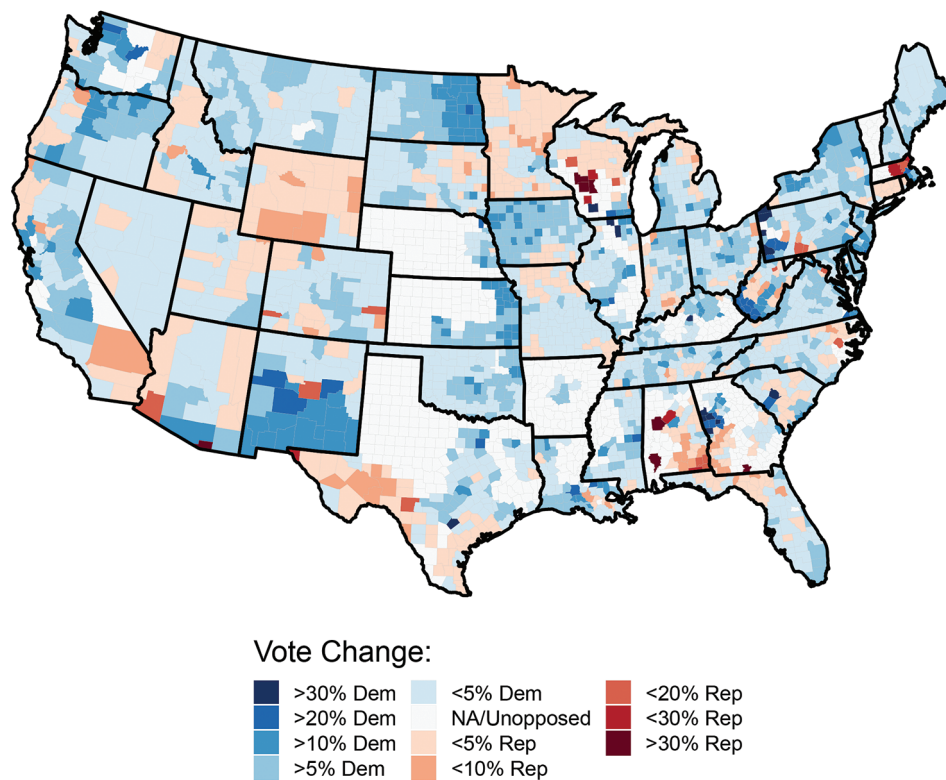


Figure 1. Change in vote share between the 2016 and 2018 congressional elections

House of Representatives in both 2016 and 2018, albeit with a narrower margin in all but one county. In 2016, in an average North Dakota county, the Republican candidate gained about 78% of the vote share, while the corresponding number in 2018 was 69%—a 9 percentage point decrease. As some initial evidence of voters punishing the incumbent party for trade policies, large areas of voter shifts against the Republicans appear in the rural Midwest and along the Missouri and the Mississippi Rivers—hotbeds of soy production.

The key independent variable is a county's economic reliance on soybean output. For robustness, we measure this in two ways: in millions of bushels and in dollar sales. Both measures use 2012 US Department of Agriculture figures and are log normalized in the statistical analysis.

We control for several factors influential for vote choice and turnout: county-level GDP per capita (in US dollars, logged) and its square, unemployment rate, education, urbanization, percentage of black and other racial minorities, percentage of Hispanic/Latino population, percentage of foreign population, and the Republican percentage of the two-party vote in the 2016 election. To account for district-level effects, such as the incumbency advantage and the district's ideological lean, we also estimate a second model only on the counties that lie wholly within a single congressional district. Data on county-level economic outcomes came from

the Bureau of Economic Analysis, while demographic variables are from the most recent US Census American Community Survey (2013–17 averages). We measure educational attainment using two variables: percentage of the adult population with at least a high school degree (High School) and percentage with at least a bachelor's degree (Bachelor's). The variable Δ Incumbent is the change from 2016 to 2018 of a variable equal to 1 if an incumbent Democrat ran for the House in the respective election, -1 if an incumbent Republican did, and 0 otherwise. The variable District Ideology is the Cook Political Report's Partisan Voting Index as of 2015: how many percentage points more Republican the district had voted in recent presidential elections than did the country as a whole. We test our hypotheses by estimating a multilevel ordinary least squares regression with counties (level 1) nested within states (level 2; Gelman and Hill 2007, 263).

RESULTS

Table 1 presents the resulting statistical analysis. The first two models include the full sample, while models 3 and 4 include only counties that are not split between congressional districts. In models 1 and 3, soy reliance is measured in millions of bushels; models 2 and 4 measure soy reliance in terms of soy sales (in thousands of US dollars).

Table 1. Soy Output and Change in Republican Vote Share between 2016 and 2018 Elections

	All Counties				Single-District Counties			
	Model 1		Model 2		Model 3		Model 4	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Soy production	−1.26*	.29			−1.27*	.28		
Soy sales			−4.00*	.97			−3.85*	.91
GDP/capita, logged	.62*	.30	.62*	.30	.23	.32	.22	.32
(GDP/capita, logged) ²	−.25	.27	−.22	.27	.13	.34	.19	.34
Unemployment	−.01	.02	.01	.02	−.01	.03	.01	.03
High school degree	.17*	.04	.17*	.04	.19*	.04	.19*	.04
Bachelor's degree	−.15*	.04	−.15*	.04	−.06	.05	−.05	.05
Urbanization	−2.24*	.50	−2.21*	.50	−2.60*	.61	−2.58*	.61
Black, logged	−.62*	.17	−.66*	.17	−.23	.18	−.28	.18
Other nonwhite, logged	−.98*	.25	−.96*	.25	−.59*	.26	−.56*	.26
Latino, logged	.08	.29	.06	.29	.43	.33	.41	.33
Foreign, logged	.33	.21	.34	.21	.34	.21	.34	.21
Republican 2016 vote	−.18*	.01	−.18*	.01	−.10*	.01	−.10*	.01
ΔIncumbent					1.62*	.29	1.63*	.29
District ideology					−.12*	.02	−.12*	.02
Constant	−3.56*	.46	−3.56*	.46	−4.11*	.61	−4.11*	.60
Variance:								
States	8.69		8.77		10.23		10.19	
County	28.72		28.74		20.68		20.73	
Observations:								
County	2,414		2,414		1,534		1,534	
States	49		49		31		31	

Note. State-level random effects are not shown. Two-tailed significance tests.

* $p < .05$.

As predicted, soy production has a negative and statistically significant effect in all model specifications. This indicates a direct relationship between county economic reliance on soy production and a decrease in Republican vote share between the 2016 and the 2018 congressional elections, while holding all other variables constant.³ This effect is substantively large: an average rural county with soy production of 10,000 bushels shifted against the Republican Party by as much as 14%—about 11 percentage points more than a comparable county with no soy production (see fig. A1).⁴

Control variables are in expected directions. Republican vote share decreased less where relatively fewer people had a college education and where Republicans gained incumbency advantage, as measured by our ΔIncumbent variable.

3. This result is robust to a variety of specifications and model choices. See the appendix (available online).

4. Ten thousand bushels is typical output for a county with just a handful of soy farms.

In contrast, more urban and racially diverse counties saw relatively larger decreases in Republican vote share between the two elections. The variable Rep 2016 Vote is negative and statistically significant, consistent with the usual midterm election depression in turnout from the president's supporters, satisfied with the status quo, compared to the opposition (Campbell 2015; Tufte 1975). Finally, District Ideology is negative in the last two models, in line with accounts that Trumpism's rise caused previously Republican-leaning areas such as suburbs to drift away from their previous partisan alignment (Campbell 2018).

CONCLUSION

In studies of international political economy, the public often appears marginally sensitive at best to trade policy; when concern for trade does appear, it can reflect identity cues as much as personal pocketbook issues. However, in exploring the effects of one particularly dramatic shift in trade policy, the US-China trade war of 2017–18 and its sudden imposition

of restrictions on American soybean exports, the above analysis finds strong effects. Localities dependent on soybean production that thus suffered most from the trade confrontation tended to see relatively large shifts against voting for the incumbent president's party. This result is particularly notable since most previous studies of trade-policy preferences have found larger public responses to open trade policy, rather than to the protectionist, higher-barrier policy examined here. It is further noteworthy that the result emerges in the contemporary United States, where fervent and polarized partisan identities might be expected to reduce the scope for detectable effects: notwithstanding the Trump coalition's reputation for unshakable loyalty, the president's party still appears to face electoral costs from trade-policy choices. Even if public-opinion polling suggests few voters have deeply considered trade-policy preferences, they may respond when confronted with changes in trade policy itself. Such changes' economic ramifications may matter independently of stated ideological attitudes about trade.

Future research should complement this finding with individual-level analysis to better examine who, exactly, responded to the change in trade policy. Was the effect concentrated among farmers themselves, or did it extend to other locals? And did those who change their voting behavior actually switch parties or simply become less likely to turn out to vote for their partisan preference? It is also worth exploring responses to the ongoing trade conflict in other countries and industries. While the context of American agriculture is *sui generis*, the potential for governments to suffer electoral costs from trade wars may be expanding amid surging populism in many countries.

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