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Export Jobs, Special Interest Groups, and the US Presidential Election of 2016: The Case of West Virginia

Tomi Ovaska
Youngstown State University

Ryo Takashima
Sophia University

Abstract
In this West Virginia case study, we highlight the success of traditional, small special interest groups in the 2016 US presidential election and demonstrate through county-level export-data regression analysis how the grip of small import-competing groups in West Virginia is loosening in a globalizing world. We show how the previously successful anti-import groups now face new small producer and consumer groups that are also well organized and whose income depends on open trade. Using graphical analysis, we also show that when the anti-import groups lose relative standing, society's deadweight loss caused by trade restraints gets increasingly smaller.

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I. Introduction

During the 2016 presidential election, two camps of small special interest groups in West Virginia had opposing views on the benefits of international trade. Following the previous works by Olson (1965), Stigler (1971), Peltzman (1976), and Becker (1983), we establish an empirical connection between the winning candidate's trade orientation and his vote share. Our study also provides evidence on how an antitrade stance in elections is coming under increasing pressure with advancing globalization and the consequent strengthening of new, small, concentrated protrade special interest

groups. We also show graphically how this clash of groups decreases import prices and society's deadweight loss from trade barriers.

With the economic decline of the traditionally politically powerful mining and metal industries, the balance of economic power in West Virginia has been moving toward more protrade industries. This case study explores the collision of these two types of groups and workers: those whose income suffers under international trade and those whose income depends on international trade. The former group's income relies on restricting international trade, while the latter group's income depends on exports and a secure and cheap global supply chain of foreign intermediate goods (inputs) used in domestic production processes.

This study is related to the literature on the effect of international trade—and, more broadly, of globalization—on presidential voting. Many studies have shown the links between various economic factors and voting (e.g., Fair 1978; Quinn and Woolley 2001; Campbell 2008; Campbell and Lewis-Beck 2008; Fair 2009; Erikson 2009; Milner and Tingley 2011; Feigenbaum and Hall 2015; Kayser and Leininger 2015; Lewis-Beck and Tien 2008). However, empirical literature scrutinizing the direct effect of international trade on presidential voting is scarce. The exceptions are Margalit (2011) and Jensen, Quinn, and Weymouth (2017). Margalit (2011) uses plant-level Trade Adjustment and Assistance application data from the US Department of Labor and finds that trade-related job losses hampered support for the incumbent in the 2000 and 2004 election cycles. Jensen, Quinn, and Weymouth (2017) use establishment-level census data to examine how county-level employment variation in firms in comparatively advantaged and disadvantaged sectors affects US presidential elections. They find geographical concentration of high-skilled (low-skilled) employment to be associated with increases (decreases) in incumbent vote shares.

This study contributes to the literature in several ways. First, we depart from the previous incumbent–opposition-party model and focus on the voting shares of a specific candidate, Donald J. Trump, who ran a strong antitrade campaign. The merit of our approach is that the incumbent–opposition-party voting model cannot clearly reveal the implications of voters' preference for open-trade policy since an incumbent may be pro- or antitrade depending on the electoral region where he or she is campaigning. Second, we look at the most recent US presidential election and incorporate the theory of special interest groups (i.e., the logic of collective action) with the

discussion to explain the election's outcomes. Third, we examine West Virginia as a special case study where special interest groups from import-competing industries have traditionally had a loud voice in and impact on elections. We also show that the electoral landscape is undergoing changing dynamics. Last, we argue that this change foments competition among special interest groups, improving societal welfare.

The next section describes West Virginia's economy and changes in its industrial structure. We then analyze the political economy of the 2016 presidential election in West Virginia. Next, we describe our data, the trend of export-related jobs in West Virginia, and regressions highlighting the relationship between Trump's vote share and export-related jobs by West Virginia county. We follow that with an empirical analysis of how export-related jobs are associated with Trump's vote share. Then, we discuss the logic of collective action and apply it to a graphical, hypothetical case study of West Virginia. Finally, we summarize the paper's arguments and findings.

II. The Demographics and Industrial Structure of West Virginia

West Virginia's population in 2017 was about 1.81 million. According to the Bureau of Labor Statistics, from 2003 through 2017, the size of West Virginia's labor market fluctuated between 783,000 and 814,000 and the unemployment rate between 3.3 percent and 12.0 percent, the typical rate being about 1 percentage point above the national rate. The state's 2016 gross domestic product was $70.2 billion, averaging $38,784 per person, placing West Virginia as forty-ninth in the nation, just ahead of Mississippi, according to the Federal Reserve Bank of St. Louis. As measured by GDP, West Virginia's largest industry was government, at $11.61 billion, followed by finance, insurance, real estate, rental, and leasing at $9.65 billion, according to the Bureau of Economic Analysis. Mining completes the big three industries, grossing $8.93 billion. The manufacture of steel and steel products is an important industrial activity, though it is statistically spread among several different activity categories.

Table 1. Structural change in the US and West Virginia economies (% of economy)

Industry	US 2002	WV 2002	US 2015	WV 2015
Private industries	87.07	83.09	87.61	84.21
Agriculture, forestry, fishing, and hunting	0.88	0.43	0.98	0.44
Mining	1.04	6.50	1.83	13.44
Utilities	1.65	3.16	1.59	2.49
Construction	4.54	4.01	4.09	5.39
Manufacturing	13.50	12.30	12.11	10.12
Wholesale trade	5.66	4.90	6.10	4.59
Retail trade	6.77	8.65	5.90	6.76
Transportation and warehousing	2.80	3.17	3.03	2.97
Information	5.04	2.84	4.69	2.08
Finance, insurance, real estate, rental, and leasing	20.59	14.20	20.40	12.87
Professional and business services	10.96	6.52	12.32	7.20
Educational services, health care, and social assistance	7.25	9.51	8.38	9.88
Arts, entertainment, recreation, accommodation, and food services	3.79	4.07	3.96	3.92
Other services, except government	2.62	2.84	2.24	2.06
Government	12.93	16.91	12.39	15.79

Source: Bureau of Economic Analysis.

Table 1 uses the Bureau of Economic Analysis's economic activity classification to compare West Virginia's economic structure to that of the United States. The differences in the structure are comparatively small. West Virginia looks much like America, though with a larger (and highly cyclical) mining sector and a smaller financial sector, according to the Bureau of Economic Analysis. West Virginia also has a high share of government purchases of goods and services. A large share of the state's government activity is income transfers from federal sources. While West Virginia's government sector is relatively large, over the fourteen-year observation period of 2002–2015 the state's the private-sector share has risen faster than the United States', with mining (from the oil and natural gas boom), construction, and professional services showing particularly robust growth. Meanwhile, finance, insurance, and real estate rental and leasing (FIRE), along with manufacturing, have declined in their share of the total.

III. The Political Economy of the Presidential Election in West Virginia

In the 2016 presidential election, Donald J. Trump won a clear majority of votes in all of West Virginia's fifty-five counties (table 2). Monongalia County had the lowest share of votes for Trump, though that share was still over 55 percent of the total. Grant County had the highest share of Trump votes with nearly 90 percent (*New York Times* 2017).

While West Virginia has chosen a Republican candidate in the last five presidential elections, Trump's 2016 victory margin over his opponent in this state was unprecedented. Research into the exact reasons is still ongoing, but it has been suggested that candidate Trump benefited disproportionately from the support of white working-class voters, who have seen their economic standing erode for decades (Cohn 2016). Trump promised on the campaign trail that he would revive West Virginia's traditionally strong and well-paying basic industries: mining (coal, oil, metal) and steel working. Trump also delineated the reasons for West Virginia's malaise—the unfair international trade practices of America's trading partners—and promised quick help for the suffering workers in those industries. Not surprisingly, the trade groups in the affected industries supported Trump.

Table 2. West Virginia counties' lowest and highest vote shares for Trump

County	Trump share (%)	Population
Lowest share		
Monongalia	55.63	104,536
Jefferson	58.11	56,482
Kanawha	60.81	188,532
Highest share		
Doddridge	86.69	8,176
Ritchie	87.29	9,982
Grant	89.46	11,766

Source: *New York Times*, Elections.

Following his campaign theme, in his inaugural address on January 20, 2017, President Trump said, "We must protect our borders from the ravages of other countries making our products, stealing our companies, and destroying our jobs." He continued, "[Import] protection will lead to great prosperity and strength." True

to his rhetoric, as one of his first official actions in office, President Trump withdrew the United States from the world's largest emerging free trade block, the Trans-Pacific Partnership, or TPP (Maudlin 2017). As a consistent critic of the North American Free Trade Agreement, The Office of the US Trade Representative has also renegotiated that treaty, now known as the United States-Mexico-Canada Agreement (pending congressional approval), to purportedly benefit domestic industries.

Not surprisingly, not everyone has agreed with Trump's plan. The Center for Automotive Research alleged that Trump's restrictive trade plans could result in major American job losses (Dziczek et al. 2016, p. 15). The *Economist* (2016) pointed out that "Implicit in […] Mr. Trump's view of international trade [is]: a patriotic contest in which countries strive to take each other's jobs—or seize them back." Not surprisingly, many corporate executives as well as mainstream economists have also expressed their concerns about the president's antitrade policies (Lee 2017; Margolis 2016). Regardless, his trade advisers noted that "President Trump will use all available means to defend American workers and American manufacturing facilities from […] cheating, including tariffs" (Long and Gillespie 2016).

The politically powerful United Steel Workers Union District 8 covering West Virginia is an example of a union that supports Trump: it has maintained a consistent position against cheap imported steel, especially from China. Furthermore, the group has been encouraging presidents to take action to stop steel imports from China and instead rely on US steel, according to the website of United Steel Workers District 8. Referring to steel and aluminum tariffs, the United Steel Workers wrote in a July 11, 2018, press statement, "Congress must be careful not to jeopardize national security, scuttle that investment and throw thousands of workers into the unemployment lines. In addition, the tariffs' opponents must stop deliberately misleading the public about national security [and the] continual diminishment of US steel and aluminum-making capacity caused by unfair trade practices, mostly by China. The tariffs are intended to shore up US capacity to ensure its availability for defense and our critical infrastructure" (United Steel Workers 2018).

US metal producers are undoubtedly active on the trade front: of the first ten domestic investigations of unfair trade practices (filed by US manufacturers) listed at the US International Trade Commission's (USITC) website, eight had to do with metal sheet and pipe products.

A USITC finding in favor of the plaintiffs (a violation of domestic law on dumping or unfair trade practices) opens the door for the president to enact countervailing duties on imports. US metal producers are not alone in seeking rents from governments, of course. The West Virginia Coal Association, for instance, is lobbying the US government to enact a production subsidy in the form of a tax credit for coal (IEEFA 2018).

While import-competing West Virginian trade associations, notably associated with metalworking and mining, applaud President Trump's antitrade focus, some others, such as the West Virginia Manufacturers Association, have expressed an increasingly vocal opposite view to his antitrade agenda. This association notes that its member firms' annual exports in 2018 were $3.64 billion, half of which went to US free trade agreement partners, and that already in 2011 more than 20 percent of its members' jobs depended on trade (NAM 2019). The president of the West Virginia Manufacturers Association, Rebecca McPhail, stated, "The optimism US manufacturers have experienced recently could fade due to retaliatory tariffs from other countries. We're at this intersection in the state where a lot of positive things are happening," she said. "We just don't want to delay that, or even cancel it, because of this particular issue" (Garland 2018). Any trade disruption could quickly wreak havoc in the state's high-value-added industries. According to material on its website in October 2018, the West Virginia Oil and Grocer Marketers Association has taken a similar view on the importance of international trade to its industry's future fortunes, be it in terms of global supply chains for inputs or the volume of exports, which could be threatened by trade wars.

In the initial round of antitrade measures, President Trump set, with a few exceptions, tariffs of 25 percent and 10 percent on all steel and aluminum for imports, respectively, effective June 2, 2018, per the United States Trade Representative website. China responded in kind, with new import tariffs for US-made goods in an equivalent dollar amount. The tit-for-tat has currently led to 10 percent tariffs on $250 billion worth of goods and services from China, rising to 25 percent in January 2019 (Buckley 2018). In addition, per the Office of the United States Trade Representative (USTR 2019), new tariffs of 10 percent on approximately $300 billion of Chinese imports have been announced but are currently on hold pending further negotiations. Even the closest US allies have started proceedings for countertariffs against the United States, with the United States now

pondering new countermeasures. To the delight of the many financially struggling West Virginia industries, however, the efforts of its many special interest trade groups to get relief from foreign competitive pressures seemed to finally bear the fruit they had been seeking for years. West Virginia steel makers—including AK Steel, ArcelorMittal, Charleston Steel, Harsco—and the 13,300 jobs they support, along with about 16,000 West Virginia coal workers, are the beneficiaries of the new US trade measures.

The above scenario is a classic example of Mancur Olson's "logic of collective action": concentrated benefits for small interest groups (e.g., firms and workers) and dispersed benefits for large groups (e.g., the US population of 330 million and the West Virginia population of 1.8 million). While the rent-seeking benefits are measured in the tens of millions of dollars for the West Virginia firms, the cost of the new antitrade policies per average American or West Virginian is negligible. Given the small personal cost, individual Americans and West Virginians are expressing "rational ignorance" on the issue (Downs 1957). The balance of special interest group competition changes when new special interest groups whose interests do not coincide with the old ones' interests enter the political market.

IV. Data, Regressions, and Analysis

The Brookings Institution's export database provides information on export-supported jobs based on production location at the county level for goods and services, up to NAICS 4 resolution industries[1]. The database estimates exports of goods and services for each of the 3,113 counties in the fifty states plus the District of Columbia. "The US exports in this database are a sum of Census goods domestic exports and BEA private services exports, without waste, scrap, and re-exports, US government miscellaneous services, transfers under US military agency sales contracts, and constitutes 85.9 percent of the total US exports (on a balance-of-payments basis) in 2014, reported by BEA," explains Brookings' methodology document (Brookings Institution 2015, p. 4).

The database covers exports for ninety-one detailed goods export industries and forty detailed services export industries. In estimating each county's exports, Brookings makes the following assumption:

[1] US statistical agencies use the North American Industry Classification System (NAICS) in the collection, analysis, and publication of statistical data on the US economy. The industry detail included in NAICS data increases with the associated code number.

"The estimation technique allocates US exports for a given industry to each county based on their share of national production in that particular industry. This approach assumes that if Los Angeles County produces 5 percent of the national value-added of computer manufacturing, then this county also exports 5 percent of US computer and electronics" (Brookings Institution 2015, p. 2).

The database provides two types of export-supported jobs: total export-supported jobs and direct export-supported jobs. Direct export-supported jobs are jobs supported by exports in the industries producing the exported good or service. Total export-supported jobs includes direct export-production jobs, jobs with the suppliers of intermediate inputs to exporting industries, and jobs in the transportation and wholesale trade industries across the United States. The database, then, calculates export-supported jobs by $1 million worth of sales for each industry classification: "For direct export-production jobs, it employs the Bureau of Labor Statistics job multipliers that show the number of direct jobs, full-time or part-time, supported by $1 million worth of sales (valued in production price) of the products of an industry. For total export-supported jobs, it employs the BLS job multipliers that show the number of direct and indirect jobs, full-time or part-time, supported by $1 million worth of sales (valued in production prices) of the products of an industry" (Brookings Institution 2015, p. 3).

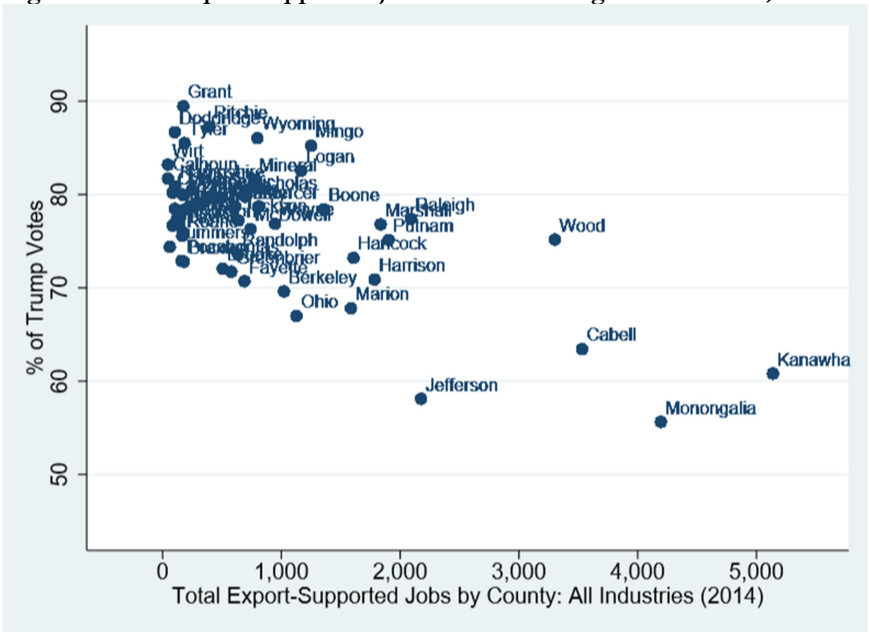
While President Trump's trade policies match the interests of some West Virginia interest groups, they do go against a slowly evolving trend: West Virginia's dependence on foreign trade has been consistently rising in recent years. Figure 1 shows the change in direct and total export-supported jobs in West Virginia during 2003–2014. When including all industries, the number of total export-supported jobs in West Virginia has increased during that time from 30,306 to 48,956, or 61 percent. In fact, all industries have experienced an increase in total export-supported jobs. Among them the number of total export-supported jobs in manufacturing far exceeds all other industries, it being more than double the number of jobs in the second-place mining, oil, and gas extraction industry.

Figure 1. Direct and total export-supported jobs in West Virginia, 2003–2014

Source: The Brookings Institution International Database.

The correlation between the share of 2016 presidential votes won by Donald Trump and total export-supported jobs in 2014 in West Virginia is negative. As figure 2 shows, this correlation is not surprising given his strong anti-free-trade rhetoric. The Trump vote in counties with a large share of export-supported jobs is clearly lower than it is in counties with few or no such jobs. Since the largest counties (Kanawha, Monongahela) have the most trade ties to the world, they separate quite prominently from counties with few direct foreign ties. Also notable is how many West Virginia counties have practically no export-supported jobs. Hence, while the citizens of those counties still reap the (in many ways invisible) benefits of foreign trade through a cheaper and wider selection of goods and services, the protrade position has no direct relevance to voting in those West Virginia counties.

Figure 2. Total export-supported jobs in all West Virginia industries, 2014



Source: The Brookings Institution International Database.

Table 3 shows the descriptive statistics for all variables used in regressions. Some variables that were never statistically significant are not shown in the regression table. Noteworthy is candidate Trump's domination in every county of West Virginia, his smallest winning percentage being 5 percentage points and his largest being 7 percentage points higher than that of Mitt Romney in 2012.

Table 3. Descriptive statistics for all variables

	Obs.	Mean	S.d.	Min.	Max.
Trump's vote share, 2016 (% of total)	55	76.5	6.7	55.6	89.5
Romney's vote share, 2012 (% of total)	55	64.5	6.4	50.6	82.5
Direct export jobs, 2014 (per $1 million worth of output)	55	282.9	402.2	14.5	1,953.6
Total export jobs, 2014 (per $1 million worth of output)	55	672.9	946.0	32.4	4,543.5
Population (in thousands)	55	33.2	33.0	5.8	186.1
Median age, (2012–16 five-year estimate)	55	43.5	3.0	30.6	49.6
Metropolitan area (yes = 1, no = 0)	55	0.4	0.5	0.0	1.0
Manufacturing share (% of the value of total output)	55	11.2	10.5	0.2	54.6
Race composition (% white)	55	95.4	3.4	85.1	99.7
Unemployment rate (%)	55	7.1	2.2	3.4	12.8
Income per household (in thousands of dollars)	55	41.2	7.6	24.5	71.3
Relative income (county average = 100)	55	95.5	17.6	56.7	165.2
Poverty level (% of total population)	55	19.0	4.9	10.0	36.0
No high school (% of adult population)	55	16.8	5.2	8.0	35.1
High school (% of adults with HS diploma)	55	43.7	5.1	30.4	51.1
Tertiary education (% of adults with BA or higher)	55	15.9	6.2	5.2	39.2
Net migration (% of county residents)	55	–5.6	7.3	–22.1	13.6

Sources: *New York Times* Election; Brookings Institution International Trade Database; USelectionatlas.org; USDA Economic Research Service; US Census Bureau Quarterly Census of Employment and Wages; US Census Bureau 2016 American Community Survey; US Census Bureau QuickFacts. The fifty-five West Virginia counties are: Barbour, Berkeley, Boone, Braxton, Brooke, Cabell, Calhoun, Clay, Doddridge, Fayette, Gilmer, Grant, Greenbrier, Hampshire, Hancock, Hardy, Harrison, Jackson, Jefferson, Kanawha, Lewis, Lincoln, Logan, McDowell, Marion, Marshall, Mason, Mercer, Mineral, Mingo, Monongalia, Monroe, Morgan, Nicholas, Ohio, Pendleton, Pleasants, Pocahontas, Preston, Putnam, Raleigh, Randolph, Ritchie, Roane, Summers, Taylor, Tucker, Tyler, Upshur, Wayne, Webster, Wetzel, Wirt, Wood, and Wyoming.

The regression analysis of this study aims to establish the relationship between the Trump vote and the share of direct and total export-supported jobs. The data contains the percentage of the total vote Trump received in each of West Virginia's fifty-five counties and the share of total directly and indirectly supported export jobs in each county in 2014. To account for alternative explanations of the change in Trump's vote share, a group of other county-level control variables is used. These include Mitt Romney's vote share in the 2012 presidential election, the median age, average and relative income, poverty level, race composition, education, population size, net migration, unemployment rate, and the industrial structure. The OLS regression analysis model is estimated by:

$$\% \text{ Trump votes} = \alpha + \beta_1 [\text{Total Export-Supported Jobs}] + \beta_2 [\text{Control Variables}] + \varepsilon$$

Tables 4 and 5 show a significant negative relationship in all models between direct and total export-supported jobs (at the aggregate NAICS 2 level[2]) and the Trump vote percentage. The two regression tables are identical except that the first includes direct export jobs and the second includes total export-supported jobs as independent variables. As for the results, both variables have a negative coefficient. The direct export-supported jobs regressions do have larger coefficients in absolute terms than the total export-supported jobs do. Changes in each variable alone explain a full half of the variability in Trump's vote share in 2016.

With a constant scale of economy and export-supported jobs defined in terms of $1 million worth of production, the regression coefficients in tables 4 and 5 imply that every $1 million increase in the value of West Virginia's economic output leads to a 0.0011 to 0.0090 (0.0121 for a simple regression, not shown in the tables) percentage point reduction in Trump's vote share. The effect is both statistically and economically significant.

When looking at table 4, we see the most consistent regression coefficient for export jobs in the most-controlled model (4–6). The regression coefficient for all three is identical: –0.0036. Scaling up production would mean that a $1 billion increase in output would decrease Trump's vote share by 3.6 percentage points. At the margin, that change could be decisive in a close election. If we assume that one major party candidate's gain is another major party candidate's loss (not precisely true in the presence of third-party candidates or

voting blank), then a mere 1.8 percentage point gain would be enough to close a 3.6 percentage point gap in the polls.

While President Trump's 2016 victory margin in West Virginia was decisive, a relatively small increase in export jobs would have been enough to flip several counties to Hillary Clinton. Trump's West Virginia vote haul in the election was 486,198 versus Clinton's 187,457. Had Trump lost 149,371 of those votes to Clinton, she would have carried the state. For Clinton to carry the state, Trump would have had to lose 22.17 percentage points of his vote.

Let us also assume a constant scale economy, where the number of export jobs per $1 million output stays the same as production increases, and where the estimated coefficients on the export jobs remain the same. Based on models 4, 5, and 6 of table 4, an additional $6.15 billion in production (equivalent to 8.9 percent of West Virginia GDP) would have allowed Clinton to carry the state.

The most vote-rich counties in West Virginia in 2016, in descending order, were Kanawha, Berkeley, Wood, Monongalia, Cabell, Raleigh, Harrison, Putnam, Jefferson, and Mercer. Votes cast in these ten counties amounted to 334,377 votes, or 49.64 percent of the total. For Clinton to win, Trump would have needed to lose an average of an extra 2.22 percentage points in each of these ten counties. The above, based on the regression coefficients, corresponds to an average increase of $615 million in production value in each of the ten counties—just enough to flip the election to Clinton.

Speculating further, suppose the value of West Virginia's output keeps rising at an average rate of 2.5 percent per year between the 2016 and 2020 presidential elections. That would be an equivalent of about a $9 billion increase in West Virginia's GDP, from the roughly $70 billion in 2016 to $77 billion in 2020. An increase of this magnitude would increase export jobs considerably. According to our estimates, ceteris paribus, the change would have flipped West Virginia to the Democrats in both 2012 (177,000 vote difference) and 2016 (299,000 vote difference). The moral of the story is that the number of export jobs already matters for presidential election outcomes in a major way, and that influence is only likely to increase in the future.

Table 4. Regression results: Direct export-supported jobs

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Constant	25.196	–1.847	6.416	–3.274	–1.558	0.905
	(20.562)	(11.386)	(10.563)	(10.063)	(9.944)	(15.942)
Direct Export Jobs ($1m. in output)	–0.0090***	–0.0054***	0.0030**	–0.0036***	–0.0036***	–0.0036***
	(0.0019)	(0.0010)	(0.0012)	(0.0011)	(0.0011)	(0.0011)
House-hold Income ($1000s)	–0.064	-0.054	0.035	0.109**	0.103**	0.099
	(0.087)	(0.047)	(0.050)	(0.050)	(0.050)	(0.077)
Race (% white)	0.592***	0.433***	0.364***	0.338***	0.316***	0.313***
	(0.209)	(0.114)	(0.105)	(0.096)	(0.095)	(0.106)
Republi-cans 2012 (Romney's vote share, %)	—	0.632***	0.614***	0.660***	0.654***	0.653***
		(0.056)	(0.052)	(0.049)	(0.048)	(0.054)
Tertiary Education (% of adults)	—	—	–0.301***	–0.179**	–0.172**	-0.174*
			(0.086)	(0.086)	–0.085	(0.099)
Unem-ployment (% of labor force)	—	—	—	0.616***	0.666***	0.671***
				(0.186)	(0.185)	(0.200)
Manufac-turing (% of all industry)	—	—	—	—	0.043	0.042
					(0.026)	(0.028)
Poverty (% of total population)	—	—	—	—	—	–0.010
						(0.136)
Age (median age in county)	—	—	—	—	—	0.001
						(0.151)
Adjusted R^2	0.58	0.88	0.90	0.92	0.92	0.91

***, **, * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels. Standard errors of the coefficient estimates are in parentheses.

Table 5. Regression results: Total export-supported jobs

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Constant	18.859	5.873	4.136	–5.574	–3.594	2.165
	(20.574)	(11.379)	(10.585)	(10.262)	(10.116)	(16.310)
Total Export Jobs ($1m. in output)	–0.0035***	–0.0021***	–0.0011**	–0.0013***	–0.0013***	–0.0013***
	(0.0007)	(0.0004)	(0.0004)	(0.0005)	(0.0004)	(0.0005)
House-hold Income ($1000s)	–0.088	–0.067	0.031	0.100*	0.094*	0.085
	(0.088)	(0.048)	(0.051)	(0.052)	(0.051)	(0.079)
Race (% white)	0.667***	0.473***	0.387***	0.367***	0.367***	0.339***
	(0.208)	(0.114)	(0.105)	(0.097)	(0.096)	(0.108)
Republi-cans 2012 (Romney's vote share, %)	—	0.641***	0.619***	0.655***	0.658***	0.657***
		(0.058)	(0.052)	(0.050)	(0.049)	(0.056)
Tertiary Education (% of adults)	—	—	–0.316***	–0.204**	–0.192**	–0.196*
			(0.088)	(0.089)	–0.087	(0.100)
Unem-ployment (% of labor force)	—	—	—	0.588***	0.644***	0.658***
				('(0.190)	(0.189)	(0.204)
Manufac-turing (% of all industry)	—	—	—	—	0.047*	0.045
					(0.027)	(0.137)
Poverty (% of total population)	—	—	—	—	—	–0.023
						(0.139)
Age (median age in county)	—	—	—	—	—	0.006
						(0.155)
Adjusted R^2	0.56	0.87	0.90	0.91	0.91	0.91

***, **, * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels. Standard errors of the coefficient estimates are in parentheses.

As for the other independent variables in regressions, the proportion of whites (+), success in the previous election (+), the unemployment rate (+), and the percentage of university graduates in the population (–) were all both statistically and economically

significant factors in explaining the 2016 presidential election outcome. Household income, manufacturing's share in the economy, poverty level, and median age never reached statistical significance. In addition, there was group of variables (not shown in the regression tables) that were tested in many different regression models, but displayed no clear relevance to the election outcome. These variables included population number, metropolitan area (dummy), relative income, adults with and without a high school diploma, and net migration.

V. Graphical Analysis: Steel Workers vs. Trade-Dependent Workers in West Virginia

The Logic of Collective Action by Mancur Olson (1965) explains how rent seeking from government takes place. Over the years, many small, highly concentrated groups have used the logic of collective action to their advantage in pursuing favors from the government, be it relaxing (or tightening) economic regulations, the tax code, government spending priorities, gun control, the use of public lands, or subsidies.[3] Some of the most famous examples of the logic of collective action lie in the realm of international trade: in particular, how small, domestic special interest groups have kept foreign competition in check through tariffs, quotas, and nontariff trade barriers, at a high welfare cost to the rest of the nation.

The economic implications of the above dynamics are clear. If the expected net benefit of collective action is large enough, producers (a small, concentrated group) will take collective action and start lobbying for the tariff (or other such trade impediment). In the case of consumers, the payout situation is quite different. The best-case scenario entails a gain of a few dollars per individual and the worst-case scenario entails a loss of all the organizers' money, potentially a high figure. Thus, a small, concentrated producer group will organize to seek rents from the campaigning politicians, while the

[3] The Bureau of Economic Analysis of the Commerce Department has a database on direct subsidies for all US states by economic sector. West Virginia received a total of $113 million in subsidies in 2015. $76 million went to the private sector and $37 million to the government. Within the private sector, agricultural farms received $11 million, and real estate received $60 million. In addition, transportation and warehousing received $2 million, federal civilians received $1 million, and manufacturing received $1 million. The BEA data can be found at the bureau's website under Interactive Data Tables, Regional Data, GDP and Personal Income.

consumers will provide little resistance even though their loss as a group far outweighs the producers' gain.

Figure 3 is a hypothetical presentation of the welfare effects—as measured by consumer, producer, and total surplus—of two small, concentrated groups with opposite goals lobbying politicians. In this case, let the two groups be steel producers and manufacturers. Suppose the West Virginia steel industry produces unique steel products and has faced stiff competition from abroad for years. The foreign producers have undercut West Virginia producers' prices and caused the industry considerable financial distress. The productivity-enhancing measures of the domestic producers have not been enough to close the competitive disadvantage. As a result, the industry (a small group of specialty steel producers) has organized to lobby for rents from the US government.

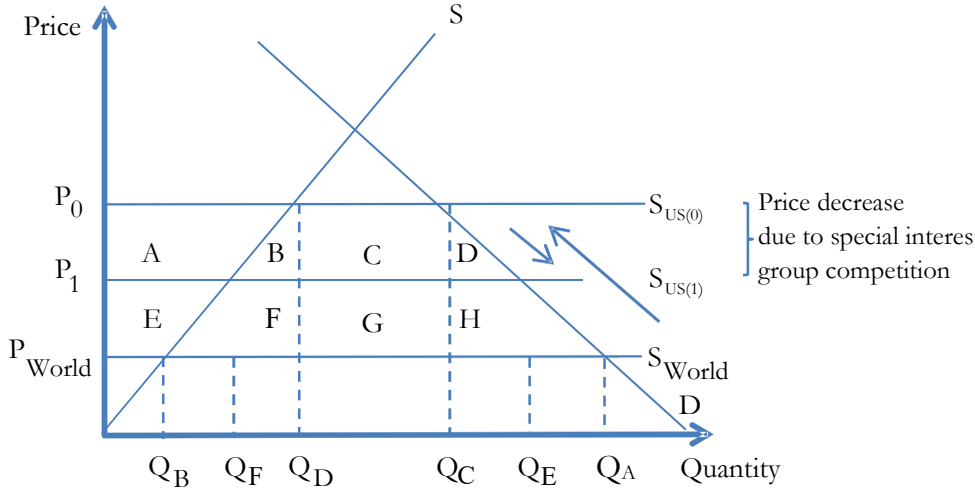
Tullock (1967) and Stigler (1971) argue that politicians are in the business of exchanging votes for political favors—in this case, tariffs (which can be enacted if the US government deems that the foreign producers have violated US pricing or competition rules). As Peltzman (1976) further notes, a necessary prerequisite for a deal between a lobbyist group and politicians must be that both sides benefit from the transaction: the deal has to be mutually beneficial to both the suppliers (politicians) and the recipients (rent-seeking firms and their workers).

First, suppose the domestic steel lobby convinces the US president to enact a unit (dollar per ton) tariff on imported steel, raising the domestic steel price from P_{WORLD} to P_0. As figure 3 shows, however, the steel lobby is not alone anymore in trying to affect to US policy: the rise of antitariff, protrade interest groups is a new reality. As the earlier regression results and Irwin (2017) highlight, many new economic sectors—exporters and the users of steel as an intermediate good—are becoming increasingly active in protrade organizing. Firms in many industries are now in global competition and depend on low-priced inputs to preserve their competitive advantage.

Suppose firms in the protrade sectors start pushing back on tariffs. After all, the benefits the upstream producers (steel producers) get from imports hurt all the downstream producers (manufacturers) of final products. A reduction in tariffs would decrease the cost of imported steel and enable the manufacturers to stay globally competitive. The increasing number of worker-voters (and their sympathizers) in these export-supported jobs—a new voting block—

is starting to pique politicians' interest. As a result, the protrade special interest groups succeed in reducing the tariff, reducing the domestic price closer to the world price, to P_1.

Figure 3. Rent-seeking gains and losses



The welfare analysis of the above situation is straightforward. Suppose the price of specialized steel in West Virginia (and the rest of the United States) is initially at P_{World}. At that price, Q_B amount of steel is produced domestically, and the rest, $Q_A - Q_B$, is imported. Then the domestic steel producers organize a small trade group, and in exchange for explicit political support in elections, they convince the president to enact a unit tax, $P_0 - P_{World}$, to shield them and their workers from foreign competition. This tax will raise the domestic price to P_0 and triple the amount of West Virginia production to Q_D. In this successful rent-seeking endeavor, the domestic producers (workers) capture the dollar value of the extra producer surplus, $A + E$. Government also collects tariffs from imported steel amounting to the value of areas $C + G$.

The losers in this scheme are domestic consumers (manufacturing firms and their customers who now have to pay for more expensive steel) and foreign steel producers. Domestic consumers of steel lose surplus equal to $A + B + C + D + E + F + G +$ H, while foreign producers also see their steel exports to the United States shrink to $Q_C - Q_D$. The overall welfare loss to the economy is the sum of the production ($B + F$) and consumption ($D + H$) distortions.

While the tariff was welfare destroying for the nation as a whole, it did benefit the West Virginia steel producers: they received a direct transfer of income worth $A + E$ from domestic steel consumers. In addition, the producers can further lobby for a share of the tariff revenue that the federal government collected. Paradoxically, as Olson pointed out, it is improbable that the US consumers who buy goods that contain steel would do anything about their loss since the loss per person is so small. The steel producers, however, are in line to gain millions in extra profits if their lobbying success endures. And the larger the expected net payout, the more likely a highly organized and well-funded rent-seeking effort by the small, concentrated steel-producer group is.

The welfare implications are quite different for the steel consumers. They used to pay the world price, P_{WORLD}, for steel, but as figure 3 shows, tariffs (the possibility of retaliatory countertariffs on US exports by foreign countries not excluded) have caused the cost of steel to triple to P_0, eroding these firms' profits and perhaps driving some of them out of business. These firms used to export a significant amount of their final products with steel as an intermediate component, but this practice is now threatened by rising material costs due to the protective tariff.

Then, suppose one intermediate steel user group gets organized and convinces the president to lower the tariff from P_0 to P_1, thereby reducing the cost of domestic steel by one-third. As a result, domestic steel consumers gain the value of area $A + B + C + D$, while domestic steel producers see their own production drop by one-third to Q_F and their producer surplus decline by the value of area A, or by nearly two-thirds. The government also loses half of its previous tax revenues, the value of area C.

As a result of the intervention of the second rent-seeking group, West Virginia now gains the value of area $B + D$, which includes a transfer of income of A back from producers to consumers of steel. The original deadweight loss for the economy was the production distortion $B + F$ plus the consumption distortion $D + H$. Interestingly, when the new protrade group entered the picture (no matter that its action was motivated by self-interest), a byproduct of its action was that the country's deadweight loss from tariffs went down by the value of area $B + D$ (by one-fourth). The country and West Virginia enjoyed a sizeable overall economic gain as a result.

As Tullock (1967) famously pointed out, the above efficiency gains are real, though likely underestimated since the analysis

excludes the lobbying costs. The result of the above analysis does conform to that of Becker (1983): if in economics or politics something is off balance, corrective forces will step in, starting to push outcomes closer to a point where the marginal benefits of an action equal their marginal costs. In other words, in a changing world, highly concentrated small groups won't stay immune to competition forever. While an economic or political imbalance may last for some time, in the absence of further market failures, it will eventually be corrected by the actions of self-interested politicians and special interest groups who desire to improve their own lot.

Figure 1 showed a steady rise of export-supported workers in West Virginia over the last decades. What this means for the state is that no cost-benefit calculating politician, including presidential candidates, should take for granted that antitrade policies are the winning ticket in future West Virginia or national elections. Furthermore, a rise of new special interest groups is not necessarily welfare reducing. Despite recent antitrade movements by the federal government, advancing globalization will exert increasing pressure on politicians to reduce trade impediments.

VI. Conclusion

This study looked at how advancing globalization combined with the dynamics of the logic of collective action is changing the political-economic landscape in West Virginia. The study first documented the rise of total export-supported jobs in the state. Then a regression analysis was run and a strong negative relationship was found between Donald Trump's vote share in the 2016 US presidential election and the number of export-supported jobs in West Virginia. Next, welfare analysis with producer and consumer surplus was used to highlight the mechanism of how small, concentrated, anti-foreign-trade groups can benefit from rent seeking in West Virginia. The above was contrasted with the new reality, a rising number of West Virginia jobs depending on foreign trade, and how this shift has created a counterforce to the old established rent-seeking groups. Finally, it was shown how competition among rent-seeking groups with opposite aims will increase West Virginia's welfare due to a lower economic deadweight loss from foreign trade restraints.

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