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Sectoral Analysis of Economic Factors Affecting Congressional Voting on Free Trade Agreements: A Case Study of KORUS FTA

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Abstract

This study seeks to discover why representatives vote for or against free trade agreements. It draws upon the sector theory of political economy to explain why legislators vote for free trade agreements, while also drawing upon assumptions from electoral theory to explain legislative behavior. According to the theory, representatives from districts dominated by export sectors, or import-complement sectors, will vote for free trade agreements while those from import-competing districts will vote against them. The theory is tested using the case of the U.S. House of Representatives vote on the enactment of the U.S.-Korea Free Trade Agreement (KORUS FTA) in 2011. The results seem to show that the presence of a significant agricultural sector in a district had a modest positive effect on the likelihood of a legislator voting for KORUS FTA. However, the largest coefficient was on education, the control variable for the factor model, suggesting that support for free trade agreements divided more along factoral lines than sectoral ones.

1. Introduction

Since the latter years of President Obama's second term, and bleeding into the presidency of Donald Trump, there appears to be a partial party realignment on the matter of free trade. Historically, Republicans were considered to be the party of free trade while the Democrats, being the party of Labor, were generally less keen on free trade agreements. However, this simple dichotomy fails to capture the nuance of positions on trade. For example, the Trans-Pacific Pact failed to pass under a Republican controlled Congress. From this example it is clear that support and opposition to trade does not supervene on just partisanship and ideology. I theorize that what determines representatives' stances on trade is the sectoral composition of their districts. I then proceed to address the extant literature regarding free trade, electoral rationality, and the sectors and factor models of political economy. The theory is tested using an ordinary least squares regression of congressional voting data from the implementation of the U.S.-Korea Free Trade Agreement (KORUS FTA).

Any study of political economy, such as trade or immigration, falls into either the category of factor or sector theory. The factor model emphasizes tensions between factors in the economy. In practice, differences between labor factors are usually measured by educational attainment. This model suggests that the Labor would be more opposed to free trade agreements due to being comparatively immobile across industries, while capitalists would support free trade if they could readily shift their capital away from import-competing industries. In contrast, the sector model states that political friction will be strongest between sectors or industries; for instance those working in import-competing industries will oppose free trade, while those in export focused industries would support free trade agreements, regardless of whether they are Capital or Labor.

Previous research has demonstrated that support for trade agreements breaks down along either industry or factors depending on inter-industry factor mobility[2]. According to the Stolper-Samuelson Theorem, under the assumption of perfect factor mobility between industries within a country, trade will breed conflicts between broad classes[7]. In

contrast, the Ricardo-Viner model, in which at least one factor is held immobile between industries, suggests that conflict will arise between different industries[5]. Hiscox (2002) showed how changing factor mobility in the United States changed the makeup of the coalitions that emerged in support and opposition to trade agreements[2]. However, the paper neglected to include a control variable for partisan affiliation, despite the fact that previous papers had demonstrated that it was a good predictor of legislators' votes on trade legislation[2]. The author justifies his decision by pointing to multicollinearity between partisan affiliation and class and industry characteristics. Nonetheless, ideological preferences of legislators should be accounted for in some fashion in any model which seeks to measure coalitional conflict over trade policy through the lens of legislative voting.

Kucik and Moraguez (2017) draws on a large body of political science literature that demonstrates that ideological preference is a strong predictors of legislators' voting patterns across a number of issues[3]. The authors measure ideology using the DW_Nominate scores for each legislator. They use a measure of import penetration to record each district's economic interest, and the causal mechanism by which district interests influence congressional votes on trade legislation is firmly rooted in sector theory[3].

However, Scheve and Slaughter (2001) found that at the individual level, attitudes toward trade were better explained by the factor model[6]. Additionally, Mansfield and Mutz (2009) found that neither the factor nor sector theory predicted individuals' attitudes towards trade barriers well; the only exception was when education was used as a measure of skill within the factor model[4]. The authors found that attitudes were more shaped by perceptions of the overall health of the United States economy[4].

The individual level results from Mansfield and Mutz (2009) throw the foundation for both the sector and factor models into question; if individuals do not form opinions on trade based on either their factor type or their sector of employment, then we should not expect to see coalitions rise along either of these lines, but rather along perceptions of overall economic health.

2. Theory and Methodology

2.1 Theory

I theorize that congressmen will vote for free trade agreements based on the industrial composition of their districts, with those whose districts are heavily import-competing voting no, and those with strong export industries voting yes.

This theory relies on a number of assumptions. It assumes that legislators are electorally motivated. This is a basic assumption of electoral politics; a legislator cannot pursue his or her preferred policies if that legislator is not in power. Therefore, the first goal of every legislator is reelection. This assumption necessarily implies that legislators will seek to assemble electoral coalitions and maintain those coalitions by voting for the interests of their constituencies. Additionally, reelection requires funds, both to cover the cost of operations and deter challengers. Because politicians are electorally motivated and require funds for reelection, they will naturally court the largest industrial presence in their district, which would be best able to contribute funds to their campaigns.

I further assume that voters care about and can recognize their economic interests, and will vote accordingly. Given the spotty empirical record regarding whether or not voters vote according to their economic interests and the outsize role political polarization plays in elections, this assumption is controversial. Nonetheless, I believe it is an acceptable assumption to make in this case; in matters of trade, there is a readily observable causal connection between freer trade, greater competition, and the employment opportunities in a given industrial sector. Moreover, even if voters are not attentive to federal trade policy, businesses cannot afford to be indifferent. A basic truth of economics is that as an economy becomes more regulated you will observe higher levels of rent seeking behavior from agents operating in that economy[1]. Federal trade policy has the potential to drastically change the environment in which businesses operate; given this, they have a strong incentive to exert considerable pressure on representatives from their respective districts to shape trade policy in a way beneficial to them.

I assume that factors are relatively immobile between sectors in the short run. This assumption proceeds from the specialized requirements between industries; a welder cannot become a computer programmer overnight, and vice versa. What's more, an entrepreneur who is invested in the electronics industry cannot simply shift his capital into agriculture on short notice. Computer servers make for poor plows and grain silos cannot store virtual data. This short run factor immobility means that both Labor and Capital have a vested interest in defending their particular industry from competition. This assumption, if true, would lead us to expect more tension between sectors rather than factors.

Since legislators are electorally minded, they will respond to the signals from their constituents, who are "locked" into their respective industries in the short run, and will consequently vote consonant with the interests of their

industries; additionally, rent-seeking behavior from firms will reinforce this trend, and may even compensate for voter apathy on the issue. Therefore, in any given case, one would expect that legislators from districts with high concentrations of import-competing industries will vote no on free trade agreements, while those from export heavy districts will vote yes.

2.2 Method

The hypothesis regarding congressional votes on free trade agreements will be tested by conducting an observational study of the congressional vote to implement KORUS FTA. The regression focuses on the House of Representatives, because the bill was passed by a very wide margin in the senate, so there would be very little sample variation there; additionally, members of the house face election more often and have smaller constituencies than senators, which would suggest, according to the assumptions, that they would be more responsive to particular sector interests in their districts. Therefore, individual members of Congress are the basic units of analysis.

$$vote = \beta_o intercept + \beta_1 party + \beta_2 dw\_nominate + \beta_3 agriculture + \beta_4 construction + \beta_5 manufacturing + \beta_6 education \quad (1)$$

In order to understand how industrial sectors influence each congressperson's stance on trade, I observe their vote to implement KORUS FTA, and code it as a dummy variable. This is the dependent variable in the model, and will take on a value of 1 or 0 depending on whether the particular representative voted for or against KORUS FTA. Each congressperson's vote on KORUS FTA will be a proxy for their support or opposition to free trade. Data from the U.S. Census is used to instantiate sector effects into the model. According to most lay analyses prior to the implementation of KORUS FTA, the U.S. sector that would benefit the most from the free trade agreement was agriculture. The sector that would experience the greatest loss in output was manufacturing. Additionally, construction is included due to the fact that the sector uses imported resources such as steel for inputs and as such is expected to favor freer trade since that would lead to cheaper inputs and lower costs. I measure the industrial character of each congressional district by using three variables from the 2011 American Community Survey 5 Year Estimates: Agriculture, Forestry, Fishing and Hunting, and Mining; Construction, and Manufacturing. Each variable is coded as a percent of the working age population per district. The probability of a yes vote is expected to correlate positively with Agriculture and Construction, while having a negative correlation with Manufacturing.

Furthermore, factor influences are controlled for by including the percentage of the adult population of each congressional district that has attained a bachelor's degree or higher. The factors model would lead one to expect that support for free trade would have a positive correlation with the level of educational attainment in a given district.

In addition to sectoral composition, I also control for non-economic factors that may influence congressional voting. Political party is controlled for by assigning a dummy variable with a value of 1 for Republicans and 0 for Democrats. The Republican Party has typically been associated with support for free trade agreements, while the Democratic Party is strongly connected to labor interests, which typically oppose free trade. Since members of Congress self-select into their parties, it is reasonable to suppose that a representative who is a Republican will be more likely to support free trade agreements.

I also control for ideological differences among representatives by using each representative's DW_Nominate score. Party affiliation does not fit cleanly with ideological character; there can be conservative Democrats and liberal Republicans. Additionally, within liberalism and conservatism, there are different views on trade. Despite some outliers, ideology and party affiliation are closely associated, and including both variables could lead to multicollinearity; however, given how imperfectly party affiliation captures an individual congressperson's policy preferences, I still think that both variables should be included.

3. Data

At the time KORUS FTA was passed, the House of Representatives was held by the Republican Party, with 242 of the 429 members who voted on KORUS FTA belonging to the party. KORUS FTA passed with 278 votes, or 64% of the House, while 151 members voted against it, including 21 Republicans. Four members did not vote and the Oregon 1st District was undergoing a special election to fill a vacancy at the time.

Table 1. Summary Statistics for Independent Variables

	Mean	Median	Min	Max	STDev
Agriculture	0.019	0.011	0	0.239	0.024
Construction	0.068	0.068	0.023	0.191	0.016
Manufacturing	0.109	0.106	0.024	0.273	0.046
Education	0.279	0.261	0.072	0.655	0.098
DW_Nominate	0.086	0.277	-0.685	0.913	0.451

Agriculture is by far the smallest sector represented, with only 1.9% of each district's labor force employed in the agricultural sector on average; as table 1 shows, the median is even lower suggesting that agricultural employment is concentrated in a few districts which have high proportions of agricultural activity. Conversely, of the three independent variables, Manufacturing is the largest variable on average.

Education varies wildly, with the least educated district having only 7.2% of the adult population possessing an undergraduate degree and above, while in the most educated district, 65.5% of the adult population possess at least an undergraduate degree.

As one would expect from the partisan tilt of the House, the average DW_Nominate score is right of center at 0.086; the median score is somewhat higher, at 0.277. This suggests that the actual ideological character of the House is likely further to the right than the average suggests.

4. Results

The regression results initially appear broadly consistent with the hypotheses. As table 2 shows, the coefficients on Party and DW_Nominate are both positive and statistically significant, suggesting that Republicans and conservatives are more likely to vote for free trade agreements. Even more interesting, party affiliation is the strongest predictor of whether or not a particular representative will vote for KORUS FTA. Of the variables of interest, there are several noteworthy observations. Agriculture appears to have a very pronounced positive effect on the likelihood of voting for a free trade agreement; however, considering that the median share of each district's labor force working in agriculture is 1%, the magnitude of the effect is not quite as large as the coefficient alone would suggest. A 1 percentage point change in the share of agriculture in a district results in a 2 percentage point change in the likelihood of that district's representative voting for KORUS FTA. Interestingly, the coefficient on construction is not statistically significant.

Table 2. Regression Results

n = 429 R^2 = 0.42	
Variables	Coefficients *(Standard Error)*
Intercept	0.301 *(0.182)*
Party	0.340 *(0.119)*
DW_Nominate	0.307 *(0.136)*
Agriculture	2.239 *(0.811)*
Construction	0.021 *(1.28)*
Manufacturing	-0.863 *(0.452)*
Education	0.636 *(0.233)*

The coefficient on manufacturing was, as expected, negative. Additionally, the effect is not inconsiderable, with one standard deviation change in the share of labor involved in manufacturing leading to a 3.9 percentage point decrease in the probability of that district's representative voting for KORUS FTA. However, as table 2 shows, the P value for manufacturing suggests that it is statistically insignificant at the 95% level, although it does become significant at the 90% level. These observations of manufacturing are surprising, negative sign on the coefficient notwithstanding. The coefficient on education is positive, as the factors model would lead one to expect. Additionally, the magnitude of the effect is considerable, with one standard deviation increase in the amount of education leading to a 6.2 percentage point increase in the likelihood of a representative voting for KORUS FTA. Given the superior explanatory power of the education variable, it is possible that factor effects dominate sector effects in explaining congressional voting on FTAs at this time. Overall, these results are consistent with previous literature, which demonstrated that factor variables outperformed sector variables in predicting support for free trade agreements in the 21st century.

5. Conclusion

The results partially confirmed the theory. The effect of agriculture on a representative's likelihood of voting for KORUS FTA was positive, albeit modest, as the theory would lead one to expect. Additionally, the coefficient on manufacturing had the expected negative sign, and was substantively significant. Surprisingly, the manufacturing was statistically insignificant at the 95% level, despite the substantive effect on voting probability that the variable produced. Construction was not statistically significant; it is possible that the more indirect nature of the connection between free trade and construction caused those in that sector to be more apathetic about KORUS FTA. Both party and ideology had the expected effects, with party affiliation having the greatest impact on whether a particular representative was likely to vote for KORUS FTA. This fact could be indicative of an increase in partisan polarization in recent years. The effect of education was considerable and statistically significant. Combined with the weakness of most of the sectoral variables in explaining support for KORUS FTA, it seems to suggest that factoral divisions played a greater in determining support for free trade than sectoral divisions. An alternative explanation is that more educated people could simply have greater knowledge of the various benefits provided by freer trade, and be more inclined to support it[4]. My study could be refined by adjusting the model to a longitudinal method in order to capture the explanatory power of the variables across multiple different FTAs. Another future direction of research could be

a difference in difference model with the Trans-Pacific Pact that would seek to explain why KORUS FTA passed while TPP failed a mere four years later.

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7. References

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