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Constituency Heterogeneity and Vote-Speech Inconsistency on Free Trade in the 114th US Congress

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Abstract

Why do some legislators vote and speak differently in trade-related bills? In this paper, I argue that constituency heterogeneity can largely explain legislators' vote-speech inconsistency in trade-related bills. To avoid offending constituents who hold contrary preferences on trade, legislators can cloud their true preferences on trade by taking inconsistent positions. Thus, legislators who represent districts where constituents' preferences on trade are heterogeneous are more likely to show inconsistent positions in trade-related bills than legislators who represent homogeneous districts. I also argue that pro-trade legislators and anti-trade legislators have different levels of incentives to employ vote-speech inconsistency in response to constituency heterogeneity. Given that trade winners are less likely to punish electorally their incumbents than do trade losers, pro-trade legislators, than anti-trade legislators, have more incentives to take a strategy of *Camouflaging*: A strategy that legislators reduce the visibility of their true position on trade by presenting different positions at different political venues. Most of previous studies examine either legislators' roll call votes or speeches to study dyadic representation. Even researches that analyze both roll calls votes and speeches treat politicians' inconsistency across different political venues (e.g. voting, floor speech, or press release)

as idiosyncratic (e.g. each individuals' character), exceptional cases, or measurement problems. Contrary to the literature, I show that legislators' camouflaging is a rational choice for legislators to protect themselves from electoral punishments by the offending constituents. The analysis based on this nuanced conception of political strategy can provide better understanding about how legislators respond to constituency pressures and behave in the process of trade policy making.

Keywords: Dyadic Representation, US Congress, Constituency Heterogeneity, Free Trade, Text Analysis

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Chapter 1

Introduction

1.1 Inconsistency on Free Trade

In the United States, laying out protectionist sentiment on international trade has been increasingly observed in politicians' campaign speeches. Donald Trump as a presidential candidate promised to cancel North American Free Trade Agreement (NAFTA) and the Trans Pacific Partnership (TPP) and was the most protectionist during the 2016 presidential campaign. Senator Bernie Sanders, who sought to become a presidential nominee of the Democratic party, also opposed the TPP. Even some politicians who had previously supported free trade expressed protectionist sentiment during the 2016 election. For example, Hillary Clinton's record on trade was mixed. She had praised the TPP, referring to it as "the gold standard in trade agreements" as secretary of state during the Obama administration. But then, in Warren, Michigan on August 11, 2016, she said of the TPP that

> "So my message to every worker in Michigan and across Amer-

> ica is this: I will stop any trade deal that kills jobs or holds down wages – including the Trans-Pacific Partnership. I oppose it now, I'll oppose it after the election, and I'll oppose it as President."

U.S. legislators have also shown the inconsistency between their roll call votes and speeches in trade-related bills. Take, for example, Representative Sandy Levin (D, MI-9); he has continuously criticized flaws of the Republic of Korea-United States Free Trade Agreement (KORUS FTA) during the Bush administration. He then switched his position at the end of the ratification process and voted for the KORUS FTA. Another example is the inconsistency in trade-related bills presented by Representative Mike Bost (R, IL-12). He voted for 3 trade-related bills and voted against only 1 during the 114th Congress. Although his voting records showed that he supported three out of four free trade-related bills, 8 out of 9 trade-related press releases he published never showed any sign of strong support for free trade. Rather, his trade-related press releases were mostly about his efforts to pass an anti-dumping and countervailing duty law to protect the steel industry in Illinois.

1.2 Research Question and Arguments

Then, why do some legislators vote and speak differently in trade-related bills? I argue that constituency heterogeneity can largely explain legisla-

tors' vote-speech inconsistency in trade-related bills: Legislators who represent districts where constituents' preferences on trade are heterogeneous are more likely to show vote-speech inconsistency on trade than do legislators who represent homogeneous districts. To avoid offending constituents who hold contrary preferences on trade, legislators in heterogeneous districts can cloud their true preferences on trade by taking inconsistent positions.

Three mechanisms can explain how vote-speech inconsistency helps legislators avoid electoral punishments from the offending constituents.[1] First, the inconsistency leaves voters uncertain about the legislator's true preference on free trade (Alvarez 1997; Bernhardt and Ingberman 1985; Enelow and Hinich, 1984). By being exposed to conflicting positions taken by a legislator, constituents may be less confident in their expectations about the legislator's underlying preference on trade policies. Second, constituents may believe that the legislator's true preference on free trade lies between the legislator's voting and speeches, rather than trusting only votes or only speeches. Third, constituents might have general optimism. When confronted with an inconsistent legislator, optimistic constituents assume that the legislator is closer to themselves and underestimate the

[1]Tomz and Van Houweling (2009) examine how voters respond to candidates' ambiguous position taking in experimental setting. By conducting survey experiments, the paper shows that politicians' ambiguity on specific policies can be a winning strategy especially in partisan setting, in that ambiguity in campaigns attract voters rather than repelling them.

contrary position from their own.[2]

I also argue that pro-trade legislators and anti-trade legislators have different levels of incentives to employ vote-speech inconsistency in response to constituency heterogeneity. This is because trade winners are not likely to participate in politics as much as trade losers do. Two types of imbalances between trade winners and trade losers can help explain why there is an asymmetry of political participation. First, it is an imbalance in sentiment about gains and losses. Psychological studies have documented empirical evidences of *loss aversion*: the tendency of people to prefer avoiding losses to acquiring equivalent gains (Kahneman and Tversky 1984; Kahneman, Knetsch, and Thaler 1991). On trade issues, the pain of losing jobs and decreasing profits from reduced market share for trade losers would be larger than the pleasure of having additional profits from increased exports for trade winners. Second, it is an imbalance between clear, present benefits and possible future benefits. Trade winners who can achieve the potential gain in the future are unlikely to expend the same efforts as trade losers will to preserve a current market (Schattschneider 1935, 283). In other words, people have *present bias*: the tendency of people to give stronger weight to payoffs that are closer to the

[2]Psychological studies have shown that there is systematic patterns of people overestimating the probability of desirable events (e.g., Irwin 1953; Rosenhan and Messick 1966; Krosnick 2002, 125). This optimistic misperception can be better observed among constituents who have the same partisanship with candidates (Bartels 1988, 98-101).

present time than future payoffs (O'Donoghue and Rabin, 1999). Because of the two imbalances between trade winners and trade losers, trade losers are more likely to punish electorally their incumbents for not adopting their preferences than trade winners do.

In this paper, I introduce a new concept of a political strategy: *Camouflaging*. *Camouflaging* is a strategy that legislators reduce the visibility of their true position on trade by presenting different positions at different political venues. Given that trade winners are less likely to punish electorally their incumbents than do trade losers, taking camouflaging strategy, voting for free trade deals inside Congress and speaking against free trade outside Congress, can be a winning strategy for pro-trade legislators, while anti-trade legislators do not have equivalent incentives to take camouflaging strategy. Following the logic, I argue that pro-trade legislators are more likely to employ vote-speech inconsistency on trade than do anti-trade legislators.

My arguments extend the theories of political representation by considering the vote-speech inconsistency a rational political action. Previous studies examine either legislators' roll call votes (Hiscox 2002; Milner and Tingley 2011; Feigenbaum and Hall 2015; Clinton 2006) or speeches (Grimmer 2013) to study representation. Even researches that analyze both roll calls votes and speeches treat politicians' inconsistency across different political venues (e.g. voting, floor speech, or press release) as idiosyncratic

(e.g. each individuals' character), exceptional cases, or the problems of measurement[3]. But in this paper, I argue that legislators' camouflaging is a rational strategy in political representation: legislators in heterogeneous constituency cloud their true preferences on trade to avoid electoral punishments from the offending constituents. The analysis based on the nuanced conception of political strategy, camouflaging, can provide better understanding about how legislators respond to constituency pressures and behave in the process of trade policy making.

1.3 Research Methods

In order to examine the effects of constituency heterogeneity on vote-speech inconsistency, I first collected trade-related voting data and trade-related press releases of the House of Representatives in the 114th Congress.[4] I used web scraping method to collect all press releases published by the House of Representatives in the 114th Congress, and then selected only trade-related press releases. By comparing trade positions revealed in roll call voting and press releases, I show that there is a significant discrepancy in legislators' positions on free trade between votes and speeches.

In this paper, I use computer-based text analysis methods to examine

[3]Kim, Londregan, Ratkovic (2018) assume that a single preference structure underlies the political actors' speaking and voting behavior.

[4]This paper analyzes only the 114th Congress, since there were a number of electronically non-available press releases in the previous Congresses. This is because some websites disappear after the owner of the website fails to be re-elected.

legislators' positions on trade revealed in press releases. Manually reading abundant text data such as floor speeches, committee hearings, and press releases to measure policy position would not only require immense resources but also lead to validity problems. Human coding for measuring policy position in a huge number of text data based on consistent criteria would be almost impossible for even expert coders (Grimmer and King 2009). In this paper, I introduce statistical methods and data to overcome these obstacles, providing systematic measurement of legislators' position on trade.

To measure trade positions in legislators' press releases, the first step is to represent the press releases as quantitative data. I employed `GloVe`, a word embedding method, to construct a multidimensional vector space for all terms in press releases (Pennington, Socher, and Manning 2014). By using pro- and anti-trade terms selected by a regularization method, I calculated cosine similarities between all terms in each press release and the selected pro- and anti-trade terms, and then classified each press release document as pro- or anti-trade. Using measurements of trade positions revealed by roll call votes and press releases, I then conducted logistic regressions to examine whether constituency heterogeneity can explain legislators' vote-speech inconsistency. The empirical analysis shows that *legislators who represent districts with constituents' heterogeneous preferences on free trade are more likely to present vote-speech inconsistency on*

free trade issues than legislators who represent homogeneous districts do. The results also show that *pro-trade legislators are more likely to show vote-speech inconsistency than anti-trade legislators are.*

These results contribute to understanding political representation on free trade issues. First, the results of the analysis present that legislators' inconsistent position taking is rational choice to maximize support from voters, rather than idiosyncratic and exceptional cases. Second, the paper examines legislators' speeches as well as roll call votes. The existing researches on trade politics and political representation rely heavily upon roll call votes alone. Although voting is an important political instrument for legislators to reveal their policy positions, voting is a highly constrained mechanism, and thus it is not sufficient to examine dyadic representation. Voting procedures present only a few binary choices on free trade bills, which is difficult to fully reveal legislators' intensities of trade preferences.[5] Moreover, examining speech data can complement present empirical studies on political representation which includes empirical problems of examining the relationship between constituency interests and legislative voting. Legislative institutions intervene between legislators' preferences

[5]Binary choice of voting is not a serious problem to measure legislators' preferences on free trade if there is voting data to contextualize this. However, the current number of trade bills and voting records is too small to fully present legislators' underlying trade preferences. For example, in the 114th Congress, the number of voting records on trade-related bills was only four. This is because a number of proposed bills failed to reach the voting procedure and some trade-related bills were settled with voice votes instead of roll calls.

and their roll call votes. For instance, partisan pressure heavily influences legislative voting (e.g., Brady 1973; Rohde 1991), executive influence is strong (Bond and Fleisher 1990), vote-buying and logrolling occurs (Ferejohn 1974; Groseclose 1993; Snyder 1991) or agenda control prevents legislators from voting on the bills they want to pass or fail (Bach and Smith 1988). On the other hand, compared to their roll call votes, legislators' speeches are less susceptible to partisan pressure as well as legislative institutions. By analyzing both roll call votes and speeches, the paper provides better understanding about how legislators respond to constituency interests by using various political instruments.

1.4 Outline

The rest of this paper is organized as follows. Chapter 2 provides theoretical frameworks to explain legislators' vote-speech inconsistency on trade. The chapter can be divided into three parts. First, I present a review of political representation literature. In this part, I extend the theories of political representation by including constituency heterogeneity to explain legislators' vote-speech inconsistency on trade. Second, I provide an argument that pro-trade legislators are more likely to employ vote-speech inconsistency on free trade when they represent heterogeneous districts. I introduce a nuanced conception of political representation: *Camouflag-*

ing, which is defined as a strategy that legislators reduce the visibility of their true position on trade by presenting different positions at different political venues. Emphasizing two types of imbalances between trade winners and losers, I explain why camouflaging strategy can be more likely to be a winning strategy for pro-trade legislators than to anti-trade legislators. Lastly, Chapter 2 provides International Political Economy models to identify the winners and the losers from free trade.

Chapter 3 provides a description of legislators' roll call voting data and press releases data on trade-related bills. I then explain the methods used to measure legislators' trade positions in press releases. To measure legislators positions on trade-related bills in press releases, I used computer-based text analysis methods. In this part, I explain how GloVe, the word embedding method used in this paper, can improve the measurement of policy position in text data.

Chapter 4 presents the main empirical results which show that constituency heterogeneity has effects on the probability of legislators employing vote-speech inconsistency. I find that greater constituency heterogeneity increases the probability that legislators show vote-speech inconsistency. I also find that pro-trade legislators more sensitively respond to constituency heterogeneity: pro-trade legislators are more likely to speak against free trade than anti-trade legislators speak favorably about free trade. Finally, I show that legislators' speeches more consistently reflect

constituent interests on free trade than legislators' vote choices. Legislators' roll call votes on trade-related bills are strongly related to legislators' party affiliation, but not to the percentage of low-skill workers, the percentage of high-skill workers, and unemployment rates in their constituency. In particular, legislators who represent districts in Swing states tend to be more responsive to constituent interests through speeches than through voting.

In the conclusion, the paper summarizes the arguments and the empirical findings forwarded in this paper. I also provide the implications of examining the vote-speech inconsistency on free trade.

Chapter 2

Theoretical Framework

2.1 Constituency Heterogeneity and Dyadic Representation

Since the primary goal of legislators is to maximize their chances of reelection (Fiorina 1974; Mayhew 1974), how well legislators act as an agent for the constituency on legislative decisions, dyadic representation, is crucial (Ansolabehere and Jones 2011). Every two years, legislators must face their constituents in their districts to determine whether they will be allowed to continue to remain in their offices. No other actor has quite the same potential for negative sanctions as does the constituency.

Studying the relationship between constituency preferences and legislators' votes has been a cornerstone of empirical studies about representation. The representation literature can be categorized into two groups. One strand of work focuses on the extent to which the legislature in aggregate represents the population (Hurley 1982; Weissberg 1978). Another approach, which is more common, is dyadic and studies how individual

members represent their geographic constituents. The focus is on what accounts for member voting behavior, with explanations ranging across parties, ideology, and constituent interests (Kau and Rubin 1982; Kalt and Zupan 1990; Miller and Stokes 1963; Nelson and Silberberg 1987; Turner 1951; Wahlke, Eulau, Buchanan and Ferguson 1962).

Much of the time, constituency interests in aggregate have been used for empirical studies on dyadic representation. A legislator is thought to represent "his district," meaning that he reflects the constituency's general characteristics. However, constituency consists of different subgroups: different occupational subgroups, different ideological subgroups, and various interest groups. On trade issues, subgroups exist within a district: those who benefit from international trade (*trade winners*), those who lose from international trade (*trade losers*), and those who do not have significant influence from international trade (*moderates*). Considering the subgroups that have conflicting interests on free trade, this paper focuses on *constituency heterogeneity* on free trade and the effects of the heterogeneity on legislators' position taking.[1]

When a legislator represents a heterogeneous district, which has both trade winners and trade losers, the optimal policy position for the leg-

[1]Extant literatures have discussed the importance of constituency heterogeneity in various contexts. Bullock and Brady (1983) examine the relation of state homogeneity and party of senate delegations; Goff and Grier (1993) and Ardoin and Garand (1996) examine the relation of district homogeneity to voting indices. See Bond (1983) for the weak relationship between district homogeneity and electoral competitiveness.

islator becomes more complex than when the legislator represents a homogeneous district. This is because, in districts where similar proportions of trade winners and trade losers reside, legislators will be likely to be punished electorally for taking a consistent and clear one-sided position. Contrasting Michigan and California provides a useful illustration. The both states have both trade winners and losers, but in Michigan than in California, protectionist sentiment can be clearly observed because of the concentrated coalition of trade losers (particularly those who work in manufacturing sector). On the other hand, in California, there is no predominant sentiment on free trade, which makes it difficult for legislators to decide which is the optimal positioning on free trade.

To avoid offending constituents who hold contrary preferences on free trade, legislators can take inconsistent positions, which clouds their true preferences on free trade. Inconsistency between roll call votes and speeches can help legislators avoid electoral punishments from constituents who have contrary preferences on free trade in three ways. First, the inconsistency leaves voters uncertain about the legislator's true preference on free trade (Alvarez 1997; Bernhardt and Ingberman 1985; Enelow and Hinich, 1984). By being exposed to conflicting positions taken by a legislator, constituents may be less confident in their expectations about the legislator's underlying preference on trade policies. Second, constituents may believe that the legislator's true preference on free trade lies between the legisla-

tor's voting and speeches, rather than trusting only votes or only speeches. Third, constituents might have general optimism: when confronted with an inconsistent legislator, optimistic constituents assume that the legislator is closer to themselves and underestimate the contrary position from their own. Psychological studies and political psychology researches have shown that there is systematic patterns of people overestimating the probability of desirable events (e.g., Irwin 1953; Rosenhan and Messick 1966; Krosnick 2002, 125). This optimistic misperception can be better observed among constituents who have the same partisanship with their own incumbents (Bartels 1988, 98-101). Thus, legislators cast votes on a free trade bill in a way inconsistent with constituent interests, they have incentives to use their speeches in a consistent way with constituent interests. In this case, inconsistency between voting and speech can occur. In this paper, I test the hypothesis:

Hypothesis 1 *Legislators in heterogeneous districts are more likely to show inconsistent positions than legislators in homogeneous districts do.*

2.2 Different Incentives to Employ Vote-Speech Inconsistency between Pro-Trade and Anti-Trade Legislators

Every two years, constituents decide whether the incumbent continues to remain in the office based on the incumbent's performance. To maximize votes in congressional elections, legislators try to better reflect their constituents' interests. When districts are heterogeneous because of various subgroups, legislators have incentives to take inconsistent positions to cover a broad spectrum of his or her constituents. On free trade, if a district includes similar proportions of trade winners and losers, the legislator has incentives to employ inconsistency by taking both pro-trade and protectionist preferences time to time.

However, there is an imbalance in incentives to represent trade winners and trade losers for legislators. Trade losers are more likely to punish their incumbents' poor performance than trade winners do. This is because people tend to prefer avoiding losses to acquiring equivalent gains (Kahneman, Knetsch, and Thaler 1991). If a legislator does not properly represent trade losers' interests, and thus favor free trade, trade losers (low-skill workers and workers in import-competing sectors) lose their jobs and market share from international trade. When a legislator does not reflect trade winners' interests, trade winners (high-skill workers and exporters) do not gain

additional profits by expanding their business. In the both cases, trade winners and losers are likely to electorally punish their incumbents for their poor representative performances, but the probabilities of punishing the incumbent between trade winners and losers are not the same. Trade losers will be more likely to punish their incumbents than trade winners do because trade losers more dislike having losses from international trade than trade winners dislike not having additional benefits.

The imbalance in intensity of interest between trade winners and losers have been highlighted in trade politics literature (Schattschneider 1935, 283). It is an imbalance between clear, present benefits and possible future benefits. Trade winners who can have additional profit if increased US imports allowed foreigners to buy more are unlikely to expend the same efforts to achieve the potential gain as trade losers will to preserve a current market. There is another imbalance between those who benefit from international trade and those who pay the costs. It is an imbalance between those who are doing well and those who are facing trouble. Firms with expanding markets and profits tend to concentrate on business: they worry that new trade policy may prevent them from having the potential and additional opportunities to expand their business. It is losers in trade to go into politics to prevent them losing their jobs and protect their businesses.

The imbalances between trade winners and trade losers give pro-trade

legislators (those who voted for free trade bills), than anti-trade legislators (those who voted against free trade bills), more opportunities to take a particular strategy of position taking: *Camouflaging*. In this paper, *camouflaging* is defined as a strategy that legislators reduce the visibility of their true position on trade by presenting different positions at different political venues. Given that trade winners are less likely to punish electorally their incumbents than do trade losers, camouflaging by making pro-trade voting choices inside Congress and making anti-trade speeches outside Congress can be a winning strategy for pro-trade legislators. On the other hand, anti-trade legislators do not have equivalent incentives to take camouflaging strategy, because trade winners are not salient as much as trade losers during elections. Following the logic, I argue that pro-trade legislators have more incentives to take camouflaging strategy than do anti-trade legislators, and thus I test the following hypothesis in this paper:

Hypothesis 2 *Pro-trade legislators are more likely to employ vote-speech inconsistency on free trade when they represent heterogeneous districts.*

In this paper, I also argue that voting is a highly *constrained* mechanism, and not sufficient to fully examine dyadic representation. Voting procedures present only a few binary choices on free trade bills, which is

difficult to fully reveal legislators' intensities of trade preferences.[2] Moreover, examining speech data can complement present empirical studies on political representation which includes empirical problems of examining the relationship between constituency interests and legislative voting. Legislative institutions intervene between legislators' preferences and their roll call votes. For instance, partisan pressure heavily influences legislative voting (e.g., Brady 1973; Rohde 1991), executive influence is strong (Bond and Fleisher 1990), vote-buying and logrolling occurs (Ferejohn 1974; Groseclose 1993; Snyder 1991) or agenda control prevents legislators from voting on the bills they want to pass or fail (Bach and Smith 1988). On the other hand, compared to their roll call votes, legislators' speeches are less susceptible to partisan pressure as well as legislative institutions.

Hypothesis 3 *Legislators' speeches may better reflect their constituent interests than their roll call votes do.*

[2]Binary choice of voting is not a serious problem to measure legislators' preferences on free trade if there is voting data to contextualize this. However, the current number of trade bills and voting records is too small to fully present legislators' underlying trade preferences. For example, in the 114th Congress, the number of voting records on trade-related bills was only four. This is because a number of proposed bills failed to reach the voting procedure and some trade-related bills were settled with voice votes instead of roll calls.

2.3 Who Are The Winners and Losers from Free Trade

In this paper, I construct the indicator of constituency heterogeneity on free trade by using three variables; the percentage of low-skill workers, the percentage of high-skill workers, and the percentage of moderates in a district. To define trade winners and trade losers, this paper follows the Stolper-Samuelson theorem which predicts the winners and losers from international trade based on endowments of factors of productions such as land, labor and capital. The theorem states that international trade benefits the owners of abundant factors and hurts the owners of scarce factors. In case of the U.S., according to the theorem, owners of capital should be winners and the owners of labor should be losers from international trade. I use the percentage of high-skill workers as a proxy for owners of capital, and the percentage of low-skill workers as a proxy for the owners of labor.[3] Prior studies have focused on class cleavage and shown that the predictions made by the Stolper-Samuelson theorem are well observed in both individuals' and legislators' trade preference formation (Rogowski 1989; Milner and Tingley 2011; Beaulieu, et al. 2005; Scheve and Slaughter 2001; Mayda and Rodrik 2005; and Fordham 2008).

Unlike the Stolper-Samuelson theorem, there are other international

[3]High-skill workers are defined as those employed in executive, managerial, administrative, and professional occupations. I follow the categorization made by the U.S. Census Bureau. Low-skill workers are defined as workers in manufacture industry.

political economy (IPE) models that differently identify the winners and losers of international trade. The specific factors model and new-new trade theory point out that the Stolper-Samuelson theorem's assumption on factor mobility is problematic. They emphasize that factors of production are immobile between different industries, particularly in the short term. The models argue that different types of land, labor skills, and capital equipment have a specific use when it comes to productions of goods, and thus they cannot be adapted quickly to make other products. For this reason, the specific factors model argues that industry has to be an important criteria of separating trade winners and trade losers: those who are employed in export industries benefit from international trade, while those working in import-competing industries lose from international trade (Jones 1971; Mussa 1974). The new-new theory has narrower focus on analyzing trade winners and losers: firm heterogeneity. Even in the same industry, firms produce different products and different productivities. According to this model, productive firms benefit from international trade, while less productive firms lose from international trade (Krugman 1981; Costantini and Melitz 2008).

Despite evidence supporting the two IPE models provided by IPE literature, I employ the Stolper-Samuelson theorem in this paper. I examine legislators' positions on free trade by aggregating several trade-related votes and trade-related speeches. Some studies examine legislators' trade

preferences by analyzing individual votes (Hiscox 2002; Milner and Tingley 2011), while others do so by aggregating several roll call votes (Feigenbaum and Hall 2015; Clinton 2006). I take the latter approach, since most of the speeches on trade-related issues discuss several trade-related bills at the same time, rather than discussing one specific trade-related bill within a single speech. Since identifying that exporting industries or productive (or competitive) firms tend to significantly differ by each trade-related bill, it is extremely difficult to test the specific factor model or the new-new theory with my aggregated speech data.

Chapter 3

Data and Methods

In this section, I begin by describing legislators' roll call voting data and press releases data on trade-related issues. I then explain the methods used to measure legislators' trade positions in press releases.

3.1 Press Release and Roll Call Voting Data

I first constructed a trade-related press release dataset for the House of Representatives in the 114th Congress (2015-2016)[1]. To select trade-related press releases for the analysis, I began by selecting press releases that included the word "trade" in their titles. By using a computer-assisted web scraping method, I obtained over 700 trade-related press releases on 435 House of Representatives.

I then pre-processed the press releases by removing numbers, symbols, punctuations, common conjunctions, prepositions, auxiliary verbs, pronouns, and articles such as "and" and "the". I left the roots off all

[1]I collected trade-related press releases of the House of Representatives from all representatives' websites.

words. For example, "protection", "protected", "protecting" all have the same root "protect". Next, I count the frequency of every bigram (two consecutive words, e.g. "support trade") in each legislator's press release, excluding bigrams mentioned less than three times. This process creates a list of p bigrams w mentioned in trade-related press releases. I then count w_{mj}, the number of each bigram $j \in \{1,...,p\}$ mentioned in each press release m: $w_m = (w_{m1}, ...w_{mp})$. This creates a press release-to-bigram matrix (number of press releases $\times$ p), summarizing the distribution of bigrams by press releases.

3.2 Selecting Pro- and Anti-Trade Phrases Using Congressional Floor Speeches

To measure legislators' trade preferences through their press releases, I need to establish reference text that will determine whether each press release is pro-free trade or anti-free trade. For these, I use congressional floor speeches[2] of "rigid members"– the members who voted for all the four trade-related bills or voted against three trade bills.[3] If phrase A is heavily used by rigid pro-trade legislators, the phrase is likely to be a "pro-trade phrase". Phrase B, if mostly used by rigid anti-trade legislators,

[2]I collected trade-related congressional floor speeches of the 114th Congress from https://www.congress.gov.

[3]Since few members voted against all the four trade-related bills, I also include legislators who voted against three , as rigid anti-trade legislators.

is therefore likely to be an "anti-trade phrase." If phrase C is similarly used by both rigid pro-trade legislators and rigid anti-trade legislators, the phrase is likely to be neither a pro-trade nor an anti-trade phrase.

To construct a legislators' trade-related floor speech dataset, I searched the Library of Congress website using the keyword "international trade". I obtained 250 trade-related congressional speeches with an automated script, in order to scrape the speech data. I first split the floor speech data into each legislator's speech to select pro- and anti-trade phrases. I used a computer-assisted means of identifying each legislator's speech and automatically splitting the whole speech when a new legislator's name appeared. If the speaker's name is not unique (e.g., there were two Representative RYAN in the 114th Congress), I distinguish them by using their state (RYAN of Ohio and RYAN of Wisconsin), since congressional records identify the states of the speakers whose names are not unique. I exclude conference report, letter from the president, and news articles from the congressional speech data.

I then pre-processed the congressional speech data in the same way I did with press releases. I counted the frequency of every bigram in each legislator's congressional speech, excluding bigrams mentioned less than three times. The outcome of this process is a list of b bigrams v mentioned in trade-related congressional speeches. I then count $\mathbf{v}_i$, the number of each bigram $u \in \{1,...,b\}$ mentioned by each legislator i: $\mathbf{v}_i = (v_{i1}, \ldots, v_{ib})$.

This creates a legislator-to-bigram matrix (number of legislators $\times$ b) summarizing the distribution of bigrams by legislators.

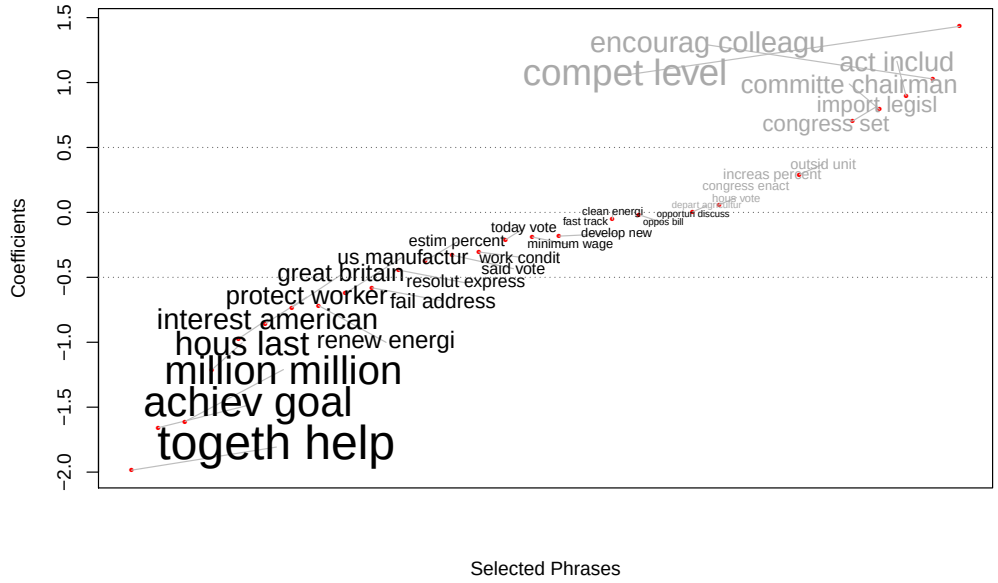
To select useful phrases that efficiently identify the legislator's trade preferences and drop "noisy" phrases that are less informative, I implement the Least Absolute Shrinkage and Selection Operator (LASSO) method. The LASSO method is used to select predicting variables by constraining other coefficients at zero (Tibshirani 1996; Friedman, Hastie, and Tibshirani 2010). As described in Equation (1), this can be achieved by putting a constraint on the sum of coefficients β_j associated with each phrase.

$$\min_{(\beta_0,\beta)\in R^{b+1}} \quad -\left(\frac{1}{N}\sum_{j=1}^{N} y_i \cdot (\beta_0 + \mathbf{v}_i^T\beta) - \log(1 + e^{(\beta_0+\mathbf{v}_i^T\beta)})\right) + \lambda\left(\frac{(1-\alpha)||\beta||_2^2}{2} + \alpha||\beta||_1\right) \tag{1}$$

To choose the value of λ that gives minimum mean-squared error (MSE), I implement the 10-fold cross-validation. With this value of λ, I employ LASSO to select phrases that are useful to predict a pro- or anti-trade position in each of the congressional floor speech. This process selects 81 useful phrases. Figure 1 shows the 32 pro- and anti-trade phrases that were selected by the LASSO method and also appeared in members' press releases. Black text appears for anti-trade phrases, and dark gray

appears for pro-trade phrases. The farther a phrase is located from zero on the x axis, the better the phrase indicates a legislators' position. For example, on the top-right side of Figure 1, we see "encourag[e] colleagu[es]" and "import[ant] legisl[ation]" as pro-trade phrases, and "togeth[er] help", "protect worker[s]" on the bottom-left side as anti-trade phrases.

Figure 1. *Selected Pro and Anti-Trade Phrases by LASSO*



Notes: This figure shows the 32 pro- and anti-trade phrases that were selected by the LASSO method and also appeared in members' press releases. Black text appears for anti-trade phrases, and dark gray appears for pro-trade phrases.

To examine the selected pro- and anti-trade phrases properly reflect pro- and anti-trade sentiments, I look at the context in which the phrases

are used. The anti-trade phrase, "protect worker", for instance, appears in a press release that Representative Tim Ryan (D, OH-13) published on Dec 22, 2015. which denounces "unfair" trade and emphasizes the need to protect American workers.

> "Unfair trade laws are impacting men and women throughout our region, and this goes to show that they are not just negatively affecting our manufacturing industry, but also our financial institutions. As the holiday season approaches and Congress continues to negotiate the Trans-Pacific Partnership, we must make sure that we are **protecting workers** from all industries from unfair trade laws,' said Congressman Ryan."

On the other hand, one of the pro-trade phrases, "depart[ment of] agricultur[e]"[4], appears in a press release that Representative Adrian Smith (R, NE-3) published on Sep 25, 2015. The press release was about the representative's support for free trade deals for economic growth, particularly for the agriculture sector.

> "With more than 96 percent of the world's customers living outside our borders, trade provides tremendous opportunities to grow our rural economy. ... On Tuesday, I hosted a seminar in Grand Island called Growing Nebraska Through Trade. ...

[4]All terms used for the analysis in this paper are stemmed.

> Nebraska **Department of Agriculture** Director Greg Ibach and numerous other experts also provided informative perspectives on the intersections of trade and agriculture, and state level efforts to grow our value-added economy."

3.3 Measuring Trade Preferences in Press Releases

I then employ GloVe[5], an unsupervised learning algorithm, to obtain vector representation of all bigrams in press releases (Pennington, Socher and Manning 2014). I use a word embedding method to overcome some problems of *dictionary-based approaches*, which depend on the word count of reference texts to estimate text data. Counting the frequency of identically matching phrases in the text data wastes too much information as the method does not identify that different phrases can have similar meanings. For example, although both "beneficial fta" and "successful fta" have very close meanings, the simple counting method does not treat the two phrases as a match unless the both are selected as reference texts by a regularization method. To overcome these problems, I first vectorize all bigrams g in all press releases z on 50-dimensional space to identify cosine similarities between bigrams. The process of vectorization creates a bigram-to-dimension matrix (number of bigrams g $\times$ 50). This process

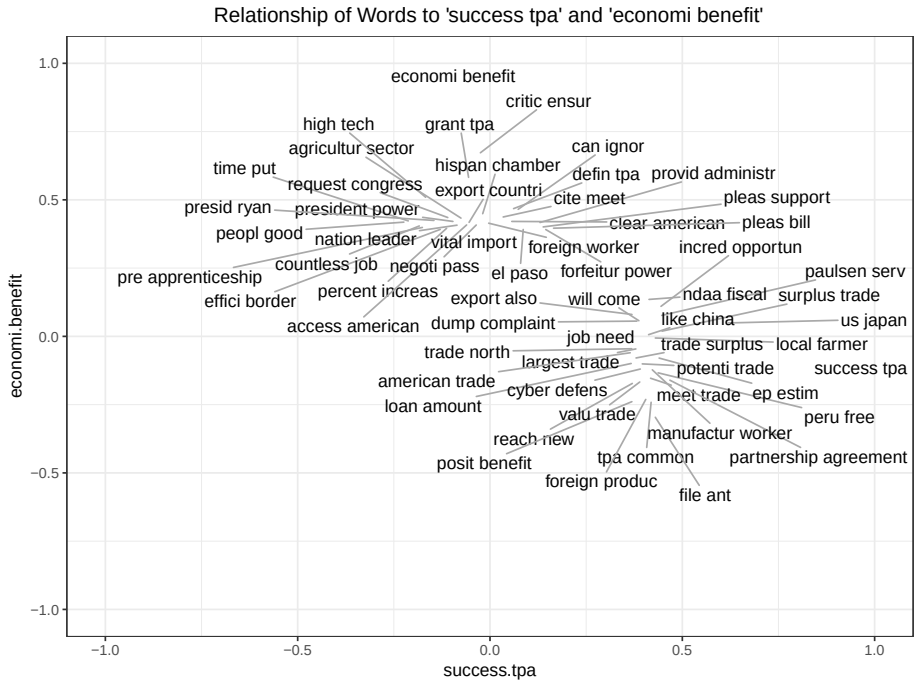
[5]This algorithm is different from another word embedding method, word2vec, in that word2vec takes local context windows to train the texts while GloVe takes both the global matrix factorization and local context windows.

also creates bigram-to-bigram matrices (number of bigrams in m^{th} press release p $\times$ number of all bigrams g) for all press releases z (a bigram-to-bigram-to-press release tensor (p $\times$ g $\times$ z)). The matrices contain cosine similarities between bigrams.

Figure 2 presents one example of cosine similarities between bigrams across various press releases. In Figure 2, there is "success[ful] tpa" on the x axis and "economi[c] benefit[s]" is on the y axis. Other bigrams in Figure 2 are the top 60 bigrams that have the highest cosine similarities with the two pro-trade bigrams. As shown in Figure 2, plotted bigrams such as "agriculture sector", "grant tpa" and "posit benefit" also imply a pro-free trade meaning. This word embedding method makes it possible to use all the information in the entire text data. In other words, even if the phrase "success[ful] tpa" is the only phrase selected by the regularization method as a pro-trade phrase, the measurement of this paper treats other bigrams that have high cosine similarities with "success[ful] tpa" as pro-trade phrases, even if they are not included in the dictionary.

I then classify each press release $m \in \{1,...,z\}$ into pro-trade or anti-trade categories by calculating the cosine similarities of the bigrams $j \in \{1,...,p\}$ in the press release m alongside the pro-trade LASSO terms $k \in$

Figure 2. *Cosine Similarities between 'Economi[c] Benefit' and 'Success[ful] TPA' and Other Phrases*



Notes: This figure presents the top 60 bigrams that have the highest cosine similarities with two pro-trade bigrams appeared in press releases: "success[ful] tpa" and "economi[c] benefit[s]". To create this plot, I vectorized all bigrams in all press releases on 50-dimensional space to identify cosine similarities between bigrams.

{1,...,h} and the anti-trade Lasso terms $n \in \{1,...,t\}$:

$$S_i^{pos} = \sum_{j=1,m=1,k=1}^{g,z,h} w_{i,j,m} * \text{CosSim}_{jmk} * \mid \text{LassoCoef}_k \mid \tag{2}$$

$$S_i^{neg} = \sum_{j=1,m=1,n=1}^{g,z,t} w_{i,j,m} * \text{CosSim}_{jmn} * \mid \text{LassoCoef}_n \mid . \tag{3}$$

The result of this process is that each press release has two values; the

sum of cosine similarities with pro-trade phrases S_{im}^{pos} and with anti-trade phrases S_{im}^{neg}. Then, all press releases are deemed pro-trade or anti-trade through comparing these two values. If the sum of the cosine similarities of a press release with pro-trade LASSO terms is bigger than that with anti-trade LASSO terms, the press release is identified as pro-trade:

$$\begin{cases} S_{im}^{pro} = 1, \ S_{im}^{anti} = 0, & \text{if } S_{im}^{pro} > S_{im}^{anti} \\ S_{im}^{pro} = 0, \ S_{im}^{anti} = 1, & \text{otherwise.} \end{cases} \tag{4}$$

Then, I count the number of pro- and anti-trade press releases published by each legislator:

$$PR_i^{pro} = \sum_{m=1}^{z} S_{i,m}^{pro} \tag{5}$$

$$PR_i^{anti} = \sum_{m=1}^{z} S_{i,m}^{anti}. \tag{6}$$

According to the results of this method, the legislator who released the most pro-trade press releases was Representative Paul Ryan (R, WI-1), who published 18 press releases to emphasize his support for TPA and free trade deals. On the other hand, Representative Marcy Kaptur (D, OH-9) issued 17 press releases to show her anti-trade position, and she was the legislator who published the most anti-trade press releases. To examine whether the press releases are pro- or anti-trade press releases, I present

the titles of the Paul Ryan's 18 press releases identified as pro-trade press releases and Marcy Kaptur's 17 press releases identified as anti-trade press releases in Appendix A.

Chapter 4

Empirical Analysis

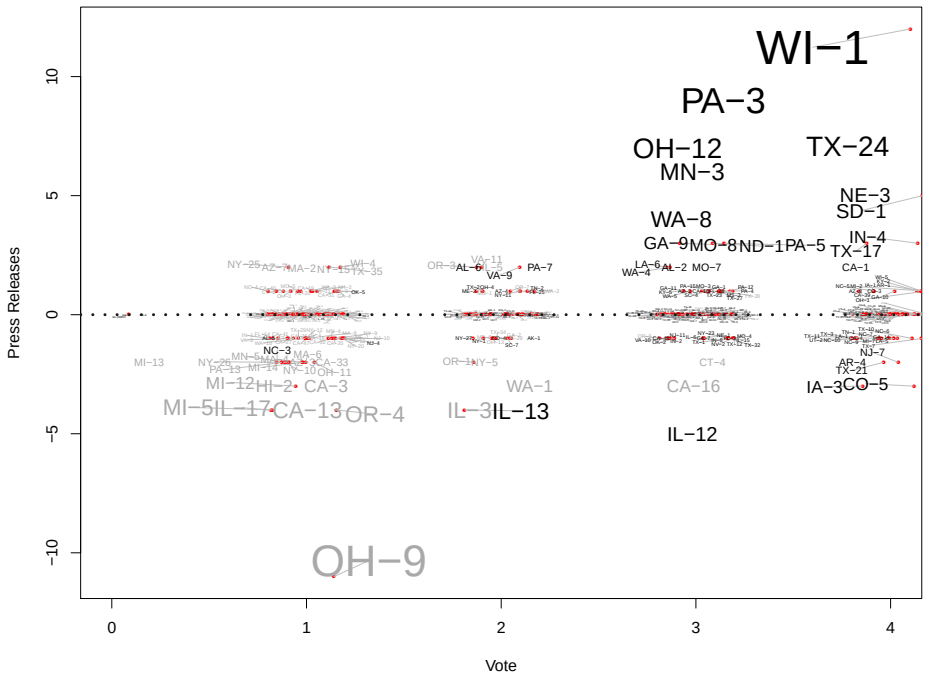
This section presents the main empirical results which show that constituency heterogeneity has effects on the probability of legislators employing vote-speech inconsistency. I find that greater constituency heterogeneity increases the probability that legislators show vote-speech inconsistency. I also find that pro-trade legislators more sensitively respond to constituency heterogeneity: pro-trade legislators are more likely to present protectionist sentiment through their speeches than anti-trade legislators show pro-trade positions in their speeches. Finally, I show that legislators' speeches more consistently reflect constituent interests on free trade than legislators' vote choices. Legislators' roll call votes on trade-related bills are strongly related to legislators' party affiliation, but not to the percentage of low-skill workers, the percentage of high-skill workers, and unemployment rates in their constituency. In particular, legislators who represent districts in Swing states tend to be more responsive to constituent interests through speeches than through voting.

4.1 The Discrepancy between Trade-Related Votes and Trade-Related Press Releases

In order to examine whether there is a discrepancy between trade-related votes and trade-related press releases, I compared legislators' trade positions revealed by their roll call votes and press releases. Figure 3 shows the results. The text in Figure 3 indicates each legislator's congressional district.[1] The color indicates members' party affiliation: black is for Republicans, and gray is for Democrats. The size of the text is proportional to the number of published press releases. The bigger the text, the more press releases a member has published. As shown in Figure 3, press releases can indicate that considerably different intensities of trade preferences are present among legislators who have the same voting profile. For example, Representative Dan Kildee (D, MI-12) and Representative Marcy Kaptur (D, OH-9) have the same voting profile - 3 nays out of 4 - but they each show significantly different intensities. Representative Dan Kildee published only 6 press releases that express concern over TPP and denounce currency manipulation practices of foreign countries, while Marcy Kaptur published 17 anti-trade press releases. As explained above, "OH-9" is the district where Representative Marcy Kaptur represents, and "WI-1" is the district where Representative Paul Ryan represents.

[1]Since there are several people with the same name, I present the results with their congressional districts.

Figure 3. *Variations of Revealed Trade Preferences in Press Releases by Trade Votes*



Notes: This figure shows the discrepancy between trade-vote and trade-press release of legislators. The text indicates each legislator's congressional district and, the color indicates members' party affiliation: black is for Republicans, and gray is for Democrats. Despite the same vote profile, the number of issuing pro- and anti-trade press releases significantly differs.

4.2 The Effects of Constituency Heterogeneity on Vote-Speech Inconsistency

In order to examine the effects of constituency heterogeneity on vote-speech inconsistency, I conduct logistic regression which takes the following form:

$$\Pr(y_i = 1) = \frac{\exp(\beta_0 + \beta_1 \text{Constituency Heterogeneity}_i + \beta_2 X_i)}{1 + \exp(\beta_0 + \beta_1 \text{Constituency Heterogeneity}_i + \beta_2 X_i)} \quad (7)$$

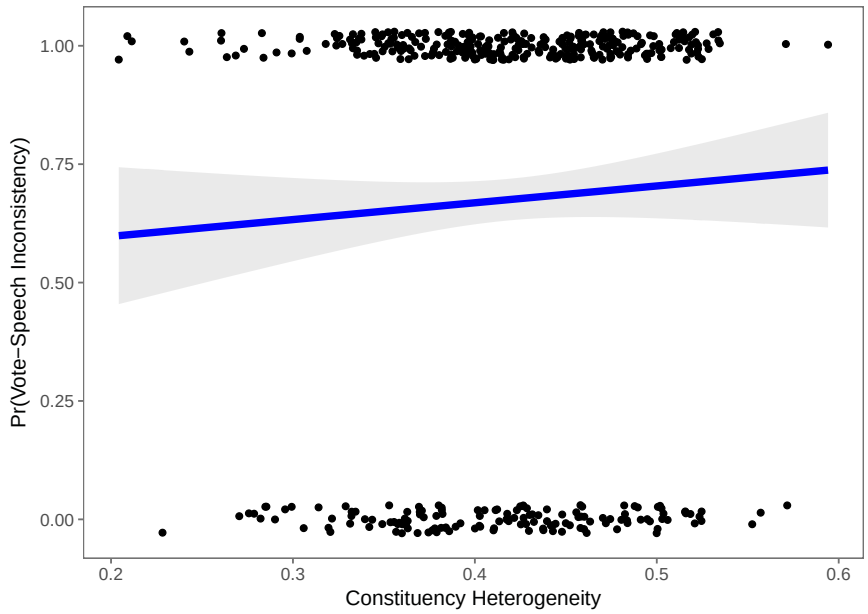
where $y_i = 1$ indicates that a legislator's trade-vote and trade-speech have the same sign, and otherwise, $y_i = 0$. I call this binary dependent variable *Vote-Speech Inconsistency*. *Constituency Heterogeneity* indicates how heterogeneous a district is on free trade. As a district is heterogeneous on free trade, *Constituency Heterogeneity* for the district is close to 1. For example, if a district has the same percentages of trade winners, trade losers, and moderates, the value for the district is 1, which means that the district is the most heterogeneous on free trade. On the other hand, if a district only consists of trade winners or trade losers, the value for the district is 0, which means that the district is the most homogeneous.

To measure *Constituency Heterogeneity*, the paper uses Herfindahl-Hirschman Index (HHI).[2] The paper calculates the level of constituency

[2]The Herfindahl-Hirschman index (HHI) is a commonly accepted measure of market concentration. It is calculated by squaring the market share of each firm competing in a market, and then summing the resulting numbers, and can range from close to zero

heterogeneity by squaring the proportion of trade winners, trade losers, and moderates on free trade, and then summing the resulting numbers. The range of the variable is from zero to 1. For interpretative expediency, reversed index is used: 0 is given for the most homogeneous districts, while 1 is given for the most heterogeneous districts.

Figure 4. *Constituency Heterogeneity and Probability of Vote-Speech Inconsistency For All Legislators*



Notes: *Constituency Heterogeneity*, continuous variable, is 1 if the district has perfect heterogeneity and 0 if the district has perfect homogeneity on free trade.

Figure 4 presents the relationship between constituency heterogeneity and the probability of vote-speech inconsistency. The Figure shows the

to 10,000.

positive relationship between constituency heterogeneity and the probability of vote-speech inconsistency, which implies that as districts are heterogeneous on free trade, legislators tend to vote and speak inconsistently. However, the relationship between constituency heterogeneity and the probability of vote-speech inconsistency is not statistically significant.

4.3 Differences between Pro-Trade and Anti-Trade Legislators

Recognizing the imbalances between trade winners and losers, pro-trade legislators (those who voted for free trade bills) have more incentives to adopt trade losers' interests by using their speeches than anti-trade legislators (those who voted against free trade bills) do to adopt trade winners' interests. To test whether *pro-trade legislators are more likely to employ vote-speech inconsistency on free trade when they represent heterogeneous districts*, I conduct three logistic regressions.

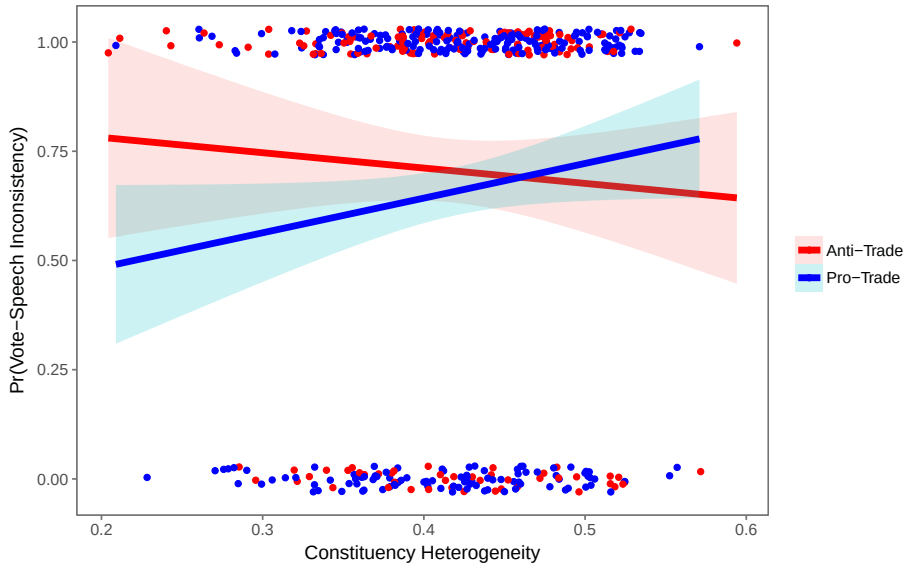
The results presented in Table 1 provide support for the hypothesis that pro-trade legislators are more likely to show vote-speech inconsistency when their constituents' preferences on free trade are heterogeneous than anti-trade legislators do. In the second column of Table 1 shows the results of a logistic regression including the interaction term between constituency heterogeneity and the binary variable identifying whether a legislator cast pro-trade or anti-trade votes. The interaction term is statistically significant and positive, which implies that pro-trade legislators are more likely to show vote-speech inconsistency than anti-trade legislators, when constituency heterogeneity controlled. Figure 5 shows that constituency heterogeneity affects vote-speech inconsistency differently depending on legislators' trade positions.

Table 1. Constituency Heterogeneity and Probability of Vote-Speech Inconsistency

	Dependent variable:	
	Probability of Vote-Speech Inconsistency	
	(1)	(2)
Constituency Heterogeneity	1.61	-1.72
	(-1.31,4.53)	(-6.71,3.28)
Pro-Trade Voting		-2.41*
		(-5.04,0.22)
Constituency Heterogeneity × Pro-Trade Voting		5.24*
		(-0.96,11.45)
Observations	437	437
Log Likelihood	-274.96	-273.02
Akaike Inf. Crit.	553.92	554.04

Notes: *Constituency Heterogeneity*, continuous variable, is 1 if the district has perfect heterogeneity and 0 if the district has perfect homogeneity on free trade. *Pro-Trade Voting*, a binary variable, indicates whether the legislator's voting records are close to pro-trade or anti-trade. 1 if the legislator's roll call votes show his pro-trade position, while 0 if anti-trade. *p<0.1; **p<0.05; ***p<0.01

Figure 5. *Constituency Heterogeneity and Probability of Vote-Speech Inconsistency for Pro-Trade and Anti-Trade Legislators*



Notes: *Constituency Heterogeneity*, continuous variable, is 1 if the district has perfect heterogeneity and 0 if the district has perfect homogeneity on free trade.

Table 2 and 3 show the results of two subgroup analysis. Table 2 shows the results of a logistic regression to test the relationship between constituency heterogeneity and probability of vote-speech inconsistency only among pro-trade legislators. Contrasting the results of Table 3 and the results of Table 2 supports again for the hypothesis that pro-trade legislators are more likely to vote and speak differently on trade than do anti-trade legislators in response to constituency heterogeneity.

Table 2. Constituency Heterogeneity and Probability of Vote-Speech Inconsistency: Pro-Trade Legislators

	Dependent variable:		
	Probability of Vote-Speech Inconsistency		
	(1)	(2)	(3)
Constituency Heterogeneity	3.53*	3.47*	3.59*
	(-0.15,7.21)	(-0.22,7.16)	(-0.12,7.30)
Swing States		0.15	0.12
		(-0.40,0.70)	(-0.44,0.67)
Silence			0.33
			(-0.17,0.83)
Observations	284	284	284
Log Likelihood	-180.56	-180.42	-179.57
Akaike Inf. Crit.	365.12	366.84	367.14

Notes: *Constituency Heterogeneity*, continuous variable, is 1 if the district has perfect heterogeneity and 0 if the district has perfect homogeneity on free trade. *Silence*, a binary variable, is 1 if the legislator never published trade-related press releases, and otherwise. Swing states include Colorado, Florida, Iowa, Minnesota, Ohio, Nevada, New Hampshire, North Carolina, Pennsylvania, Virginia, and Wisconsin. *p<0.1; **p<0.05; ***p<0.01

Table 3. Constituency Heterogeneity and Probability of Vote-Speech Inconsistency: Anti-Trade Legislators

	Dependent variable:		
	Probability of Vote-Speech Inconsistency		
	(1)	(2)	(3)
Constituency Heterogeneity	-1.72	-1.43	-3.68
	(-6.71,3.28)	(-6.47,3.60)	(-10.71,3.36)
Swing States		0.42	0.48
		(-0.58,1.41)	(-0.83,1.80)
Silence			21.24
			(-3,738.72,3,781.20)
Observations	153	153	153
Log Likelihood	-92.46	-92.10	-43.73
Akaike Inf. Crit.	188.92	190.21	95.46

Notes: *Constituency Heterogeneity*, continuous variable, is 1 if the district has perfect heterogeneity and 0 if the district has perfect homogeneity on free trade. *Silence*, a binary variable, is 1 if the legislator never published trade-related press releases, and otherwise. Swing states include Colorado, Florida, Iowa, Minnesota, Ohio, Nevada, New Hampshire, North Carolina, Pennsylvania, Virginia, and Wisconsin. *p<0.1; **p<0.05; ***p<0.01

4.4 Different Effects of Constituency Interests on Voting and Speech

I then examine how constituency interests can explain the discrepancy of revealed preferences on trade between roll call votes and press releases. I first analyze the relationships between constituency economic interests, measuring the number of low-skill workers, the percentage of high-skill workers, and unemployment rates, and trade positions revealed in voting behavior and press releases. The *unemployedpcnt* variable indicates that the percentage of unemployed workers in each district. The *highskillpcnt* variable is a proxy for the percentage of capital owners, and *lnManuf* is the logged value of the number of workers in manufacture industry, for a proxy for the size of labor. I obtained the district-level data for unemployment rates, high-skill workers, and manufacturers from the U.S. Census Bureau.[3]

TradeVote, the dependent variable, indicates the number of pro-trade roll calls a representative cast during the 114th Congress. Since there were 4 trade-related roll call votes during this period, the range of the discrete variable is from 0 to 4. If a representative voted for all free trade bills, his or her *TradeVote* is 4. A representative who was against all free trade bills, his or her *TradeVote* is 0. Higher $TradeVote_i$ means that the $representative_i$

[3]I downloaded data from https://factfinder.census.gov.

cast more pro-trade roll calls. *NegPR* and *PosPR*, two other dependent variables, are the number of pro- and anti-trade press releases l published by legislators during the 114th Congress. I collect trade-related roll calls in the 114th Congress (2015-2016) from the Library of Congress, based on the summary of trade-related bills provided by the Cato Institute.[4]

In order to identify the effects of constituency interests on revealed preferences in press releases, I use a zero-inflated poisson model (ZIP). Since there were a number of legislators who never published trade-related press releases, the dependent variables have excessive zeros. In both models, I also include party affiliation to examine the effects of party discipline. That is, I estimate the effects of constituency interests and party discipline (β) on revealed trade preferences in press releases (y_i^{pro}, y_i^{neg}). The ZIP models are as follows:

$$
\begin{aligned}
\Pr(y_i^{pro} = 0|X_i, Z_i) &= F(Z_i\gamma) + [1 - F(Z_i\gamma)]\exp(-\exp[X_i\beta]) \\
\Pr(y_i^{pro}|X_i, Z_i) &= [1 - F(Z_i\gamma)] \left(\frac{\exp(\text{-}\exp[X_i\beta])\exp(X_i\beta)^{y_i^{pro}}}{y_i^{pro}!} \right) \text{for } y_i^{pro} > 0 \\
\Pr(y_i^{anti} = 0|X_i, Z_i) &= F(Z_i\gamma) + [1 - F(Z_i\gamma)]\exp(-\exp[X_i\beta]) \\
\Pr(y_i^{anti}|X_i, Z_i) &= [1 - F(Z_i\gamma)] \left(\frac{\exp(\text{-}\exp[X_i\beta])\exp(X_i\beta)^{y_i^{anti}}}{y_i^{anti}!} \right) \text{for } y_i^{anti} > 0
\end{aligned}
$$

[4]The Cato Institute website (https://www.cato.org/research/trade-immigration/congress) provides the summary of trade-related bills since 1999.

To examine the effects of constituency interests and party discipline (β) on trade-related voting (y_i^{vote}), I use a poisson model:

$$\begin{aligned} \Pr\left(y_i^{vote}|X_i\right) &= \frac{\exp(-\mu_i)\mu_i^{y_i^{vote}}}{y^{vote}!} \\ \mu_i &= X_i\beta \end{aligned}$$

Table 4 presents the results from a zero-inflated poisson regression of trade-related press releases and a poisson regression of trade-related votes on constituency interests and party affiliation. Table 4 shows that trade preferences more consistently reflect constituent interests when revealed through press releases than through legislator voting outcomes on trade-related bills. In the first column of Table 4, the number of anti-trade press releases has a positive and significant relationship with *lnManuf*. This implies that legislators who represent districts where labor is abundant tend to issue more anti-trade press releases than those who represent labor-scarce districts. This is true even if they cast the same number of pro- and anti-trade votes. In the second column, I control party affiliation instead of trade votes, but the number of anti-trade press releases still has a significant and positive relationship with *lnManuf*. The next two columns show that the number of pro-trade press releases has a negative and significant relationship with *unemployment*. This implies that legislators in districts

with higher unemployment rates tend to publish fewer pro-trade press releases when their trade votes or party affiliation is controlled. However, the last column of Table 4 shows that legislators' trade-related votes do not have a significant relationship with constituency trade interests measured by the number of low-skill workers, the percentage of high-skill workers, and unemployment rates. Rather, the voting preferences on trade have a strong positive relationship with members' party affiliation. The results are consistent with my third hypothesis: compared to their roll call votes, legislators' speeches are less susceptible to partisan pressure as well as legislative institutions, and thus better reflect constituency interests.

Table 4. The Effects of Constituency Interests on Pro- and Anti-Trade Press Releases and Trade-related Votes

	Dependent variable:				
	NegPR		PosPR		TradeVote
	zero-inflated poisson		*zero-inflated poisson*		*Poisson*
	(1)	(2)	(3)	(4)	(5)
unemployedpcnt	-0.08	-0.09	-0.15**	-0.21***	-0.04
	(-0.20,0.03)	(-0.20,0.01)	(-0.27,-0.04)	(-0.33,-0.09)	(-0.09,0.01)
highskillpcnt	-2.62	-2.89*	-0.49	-1.70	-0.67
	(-5.52,0.29)	(-5.71,-0.08)	(-3.29,2.31)	(-4.49,1.08)	(-2.12,0.78)
lnManuf	0.62**	0.58**	0.30	0.27	0.01
	(0.18,1.05)	(0.17,0.99)	(-0.02,0.62)	(-0.06,0.59)	(-0.13,0.15)
TradeVote	-0.24***		-0.03		
	(-0.39,-0.10)		(-0.16,0.11)		
Party(R)		-0.59***		-0.38*	0.75***
		(-0.92,-0.27)		(-0.70,-0.05)	(0.60,0.91)
Observations	436	434	436	434	434
Log Likelihood	-506.94	-505.24	-520.54	-518.59	-622.95
Akaike Inf. Crit.					1,255.90

Notes: *NegPR* is the number of pro-trade press releases, and *PosPR* is the number of anti-trade press releases. *TradeVote*, a discrete variable, is the number of pro-trade roll calls (0-4) a representative cast during the 114th Congress. *p<0.05; **p<0.01; ***p<0.005

The results support the hypothesis that legislators' press releases on trade are more reflective of constituency interests than their voting on trade. It is notable that the number of legislators' pro-trade press releases is only negatively affected by constituency interests: legislators who represent trade-vulnerable districts (high unemployment rates) tend to issue fewer pro-trade press releases, but legislators who represent trade-favored districts (more trade "winners" as measured by the percentage of high-skill workers) do not tend to issue more pro-trade press releases. This implies that legislators' decisions to publish pro-trade press releases is more strongly influenced by the economic condition of their constituency (unemployment rates), rather than trade "winners" in their constituency.

Table 5 compares the effects of constituency interests and party discipline on trade-related press releases and trade-related votes between legislators who represent electorally competitive districts, and all legislators. In this paper, I identified legislators who represent electorally competitive districts as the legislators who are in "Swing" states.[5] In the first column, the number of anti-trade press releases published by legislators in Swing states shows a significant relationship with *unemployment* and *lnManuf*, though the total number of anti-trade press releases from all legislators only has a significant relationship with *lnManuf*. The results imply that

[5]Swing states include Colorado, Florida, Iowa, Minnesota, Ohio, Nevada, New Hampshire, North Carolina, Pennsylvania, Virginia, and Wisconsin.

legislators who are in electorally competitive districts tend to publish more anti-trade press releases than those who are in electorally safe districts, as their districts are more trade-vulnerable. This finding is consistent with my argument that legislators who feel electorally insecure have larger incentives to strategically use press releases to inform their constituents of any trade preferences that are congruent with constituent interests.

Table 5. The Effects of Constituency Interests on Pro- and Anti-Trade Press Releases and Trade-related Votes in Swing States

	Dependent variable:					
	NegPR		PosPR		TradeVote	
	zero-inflated poisson		*zero-inflated poisson*		*Poisson*	
	(Swing)	(All)	(Swing)	(All)	(Swing)	(All)
unemployedpcnt	0.24***	-0.08	0.11	-0.15**	-0.08	-0.04
	(0.08,0.40)	(-0.20,0.03)	(-0.15,0.36)	(-0.27,-0.04)	(-0.19,0.03)	(-0.09,0.01)
highskillpcnt	6.84	-2.62	2.31	-0.49	-0.45	-0.67
	(-0.86,14.55)	(-5.52,0.29)	(-5.10,9.73)	(-3.29,2.31)	(-3.46,2.56)	(-2.12,0.78)
lnManuf	2.50***	0.62**	1.37***	0.30	-0.08	0.01
	(1.78,3.22)	(0.18,1.05)	(0.60,2.13)	(-0.02,0.62)	(-0.31,0.16)	(-0.13,0.15)
TradeVote	-0.34*	-0.24***	0.08	-0.03		
	(-0.61,-0.07)	(-0.39,-0.10)	(-0.16,0.32)	(-0.16,0.11)		
Party(R)					0.57***	0.75***
					(0.25,0.88)	(0.60,0.91)
Observations	110	436	110	436	110	434
Log Likelihood	-111.60	-506.94	-125.03	-520.54	-166.58	-622.95
Akaike Inf. Crit.					343.16	1,255.90

Notes: NegPR is the number of pro-trade press releases, and PosPR is the number of anti-trade press releases. *TradeVote*, a discrete variable, is the number of pro-trade roll calls (0-4) a representative cast during the 114th Congress. Swing states include Colorado, Florida, Iowa, Minnesota, Ohio, Nevada, New Hampshire, North Carolina, Pennsylvania, Virginia, and Wisconsin. *p<0.05; **p<0.01; ***p<0.005

On the other hand, the third column indicates that the number of pro-trade press releases by legislators in Swing states does not show a significant relationship with *unemployment*. Rather, legislators tend to

publish more pro-trade press releases when their districts have a higher number of low-skill workers. It is possible that there are a greater number of low-skill workers in Swing states, and thus the salience of trade-related issues is higher than in other states. Because of this salience, legislators regardless of their trade preferences might have discussed trade issues very frequently through their press releases. It is also possible that some pro-trade legislators in Swing states show strong support for free trade by issuing pro-trade press releases, but also issue a number of anti-trade press releases at the same time to compensate for their pro-trade press releases. To test this, I need to examine the effects of constituency interests on press-releases with separate groups of legislators according to their trade-related votes. However, because of the small sample size of the legislators who are in Swing states, this analysis may be limited in showing statistically significant results.

In the last two columns, legislators' trade-related votes do not have a significant relationship with constituency interests. Even in the fifth column, legislators' trade-related votes do not show any significant relationships with unemployment rates, the number of low-skill workers, and the percentage of high-skill workers, even though their votes indicate a lesser influence of party discipline. This implies that legislators' voting on trade-related bills are less consistently influenced by constituency interests than in their press releases, even when legislators are likely to feel insecure

about their re-election.

These results support my hypothesis that legislators' speeches better reflect constituency interests than do their roll call votes. On trade-related bills, partisan pressure heavily influences legislative voting, while legislators' speeches are less susceptible to partisan pressures. This stresses the need to examine other political activities other than roll call votes to examine legislators' responsiveness to constituency interests on trade. By analyzing both roll call votes and speeches, the paper shows that legislators' roll call votes are insufficient to fully understand how legislators respond to constituency interests and behave in the process of trade policy making.

Chapter 5

Conclusion

This paper focused on the inconsistency between legislators' roll call votes and speeches in trade-related bills. I have argued that legislators in heterogeneous districts are more likely to show vote-speech inconsistency on trade than do legislators in homogeneous districts. I have also argued that and demonstrated that pro-trade legislators have more incentives to use a strategy of *Camouflaging*: A strategy that legislators reduce the visibility of their true position on trade by presenting different positions at different political venues. The imbalances between trade winners and trade losers make trade winners less likely to punish their incumbents for poorly reflect their own preferences on trade than do trade losers. Recognizing the imbalances, pro-trade legislators have more incentives to speak differently from their roll call votes, and thus present protectionist sentiment in their press releases than do anti-trade legislators.

My argument differs from previous IPE studies, which presume that legislator voting behavior reflects their response to pressures from soci-

etal coalitions (Hiscox 2002; Milner and Tingley 2010). Although it is well known that elected officials represent the interests of different domestic groups when participating in economic-policy making (including the owners of abundant and scarce factors, exporting and import-competing industries, and productive and competitive firms), existing studies adopt an extremely narrow focus, equating reflection with legislators' voting. I argue that solely analyzing legislator voting behavior is insufficient to understand their responsiveness to domestic societal coalitions. Hence, in this paper, I broadened the scope of legislators' responsiveness to pressures from societal coalitions on trade policies, by examining press releases as well as voting behaviors. By analyzing and comparing legislators' trade positions revealed by roll calls and by press releases, this paper contributes to the empirical literature on the domestic politics of trade policy-making (e.g., Hiscox 2002; Goldberg and Maggi 1999; Hainmueller and Hiscox 2006; Lu, Scheve, and Slaughter 2012; Mansfield and Mutz 2009; Scheve and Slaughter 2001).

Examining legislators' vote-speech inconsistency provides two significant implications. First, my argument and empirical results provide a different perspective to understanding politicians' inconsistent position taking between voting and speech. Previous studies examine either legislators' roll call votes (Hiscox 2002; Milner and Tingley 2011; Feigenbaum and Hall 2015; Clinton 2006) or speeches (Grimmer 2013) to study repre-

sentation. Even researches that analyze both roll calls votes and speeches treat politicians' inconsistency across different political venues (e.g. voting, floor speech, or press release) as idiosyncratic (e.g. each individuals' character), exceptional cases, or the problems of measurement[1]. But in this paper, I argue that legislators' camouflaging is a rational strategy in political representation: legislators in heterogeneous constituency cloud their true preferences on trade to avoid electoral punishments from the offending constituents.

Second, systematically examining legislators' vote-speech inconsistency in trade-related bills provides better understanding to American trade policy making. We have observed the increase in anti-trade sentiment in the U.S., but liberal trade policies have still been passed by the U.S. Congress. Constituency heterogeneity and the strategy of camouflaging for pro-trade legislators can largely explain the discrepancy between speeches and voting in trade-related bills. As long as the imbalances between trade winners and trade losers exist, the strategy of camouflaging, making pro-trade voting choices inside Congress and making anti-trade speeches outside Congress, can be a winning strategy for pro-trade legislators, and thus the gap between trade discourse and trade votes would continue to remain in American trade policy.

[1]Kim, Londregan, Ratkovic (2018) assume that a single preference structure underlies the political actors' speaking and voting behavior.

Appendix A

Face Validity of Measurements of Trade Positions in Press Releases

Table 6. Titles of Representative Paul Ryan's Press Release: Identified as Pro-Trade Releases

Date	Title
2015-06-28	paul ryan on promoting american trade and replacing obamacare
2015-06-11	paul ryan's step-by-step future starts with trade
2015-05-28	trade promotion authority will rebuild u.s. credibility
2015-05-21	ryan discusses trade and highways during telephone town hall meeting
2015-05-17	ryan on state of the union: for 'more jobs and better wages,' we need trade
2015-05-15	ryan on c-span: trade agreements result in 'more economic growth, more job creation, and better wages'
2015-05-03	ryan calls for passage of trade agreements & reflects on unrest in baltimore on cbss & face the nation
2015-04-30	ryan talks expanding opportunity with american trade and tax reform
2015-04-30	ryan keeps making the case for trade
2015-04-28	paul ryan: japans massive trade opportunity
2015-04-23	ways and means advances trade priorities and accountability act
2015-04-22	putting congress in charge on trade
2015-04-21	the jay weber show: paul ryan on turkey hunting, preventing lois lerner 2.0, and advancing trade agreements
2015-04-16	hatch, wyden and ryan introduce trade promotion authority legislation finance, ways & means
	leaders deliver bill needed to achieve high-quality trade deals that open markets, benefit american workers & job creators
2015-04-02	paul ryan discusses trade and fighting poverty with wclos tim bremel
2015-03-18	trade agreements must get swift advancement through congress
2015-02-23	ryan sees common ground with president on trade
2015-02-10	give congress a say in trade talks

Notes: This table presents the titles of trade-related press releases published by Representative Paul Ryan (R, WI-1), identified as the legislator who published the most pro-trade press releases by the method of this paper. He published 18 pro-trade press releases, which emphasize his support for TPA and free trade deals.

Table 7. Titles of Representative Marcy Kaptur's Press Release: Identified as Anti-Trade Releases

Date	Title
2016-01-11	kaptur, lorain leaders condemn u.s. trade policy as republic steel layoffs confirmed
2016-01-07	kaptur laments potential steel layoffs, points to job-killing trade deals as cause
2015-12-16	kaptur rebukes u.s. trade policy as taa eligibility announced for 177 ohio workers
2015-11-04	reps. kaptur, hunter lead bipartisan group in congress calling on obama administration to release final text of tpp trade deal
2015-08-04	rep. kaptur addresses breakdown in tpp trade talks
2015-06-23	kaptur slams senate vote to fast track job-killing pacific trade deal
2015-06-19	rep. kaptur blasts house leaders for job-outsourcing pacific trade deal
2015-06-05	rep. kaptur introduces bipartisan trade transparency legislation
2015-05-28	rep. kaptur slams u.s. trade policy as more ohio workers are deemed eligible for taa
2015-04-29	lucas county commissioners announce resolution urging congress to oppose fast track trade authority
2015-04-29	kaptur calls out japan for unfair trade policies, currency manipulation
2015-04-24	rep. kaptur contests japan trade deal in house floor speech
2015-04-15	kaptur criticizes political maneuvering to fast-track bad trade deals
2015-04-14	kaptur calls out bad trade deals on u.s. house floor
2015-03-19	reps. ryan, kaptur to ustr: check your math on trade deficits
2015-03-04	reps. kaptur, jones host bipartisan trade discussion
2015-01-27	kaptur requests personal narratives of those impacted from free trade agreements outsourcing of u.s. jobs

Notes: This table presents the titles of trade-related press releases published by Representative Marcy Kaptur (D, OH-9), identified as the legislator who published the most anti-trade press releases by the method of this paper. She published 17 press releases to show her anti-trade position.

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국문초록

본 논문은 미국 하원의원들의 무역 관련 법안에서 나타나는 투표-발언상의 불일치를 경험적 자료를 통해 확인하고 이를 이론적으로 설명하는 것을 목적으로 한다. 본 논문의 분석대상은 제114대 미국 하원의원들의 무역관련 법안에 대한 호명투표(roll call votes)와 보도자료(press release data)이다. 본 논문은 선거구 유권자의 무역에 대한 경제적 선호의 이질성(constituency heterogeneity on trade)이 하원의원의 투표-발언상의 불일치를 결정하는 중요한 요인이라고 주장한다. 구체적으로 무역에 관한 지역구 이익이 이질적인 하원의원은 그렇지 않은 하원의원보다 투표-발언상의 불일치를 보일 확률이 더 높다는 것이 본 논문의 핵심주장이다. 더 나아가 본 논문은 자유무역 입장을 옹호하는 의원들이 보호무역 입장을 옹호하는 의원들보다 투표-발언 불일치를 보일 가능성이 더 높다고 주장한다. 그 이유를 설명하기 위해 본 논문은 위장전략(strategy of camouflaging)이라는 개념을 소개하는데, 그 의미는 자유무역을 선호하는 하원의원들이 자신들의 선호가 대중적으로 가시화되는 것을 의도적으로 막기 위해 전략적으로 모호한 입장을 선택하는 것이다. 국제정치경제와 미국정치에서 지역구 이익과 정치인의 선호에 대한 대부분의 기존 연구가 호명투표에 기반한 양자적 대표성(dyadic representation)을 살펴본 것과는 달리, 본 논문에서는 투표와 발언을 함께 분석하고, 투표-발언 불일치가 발생하는 정치경제적 조건을 규명하고 이를 미국 하원의원들의 합리적 선택으로 설명하였다는 데 의의가 있다.

주요어: 양자적 대표성, 미국의회, 선거구 이질성, 자유무역, 텍스트 분석

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