The New Politics of the New Trade: The Political Economy of Intra-Industry Trade

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Abstract

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This dissertation explores the relationship between intra-industry trade and domestic trade politics in developed economies. I develop a theory of the political effects of this fast-growing and undertheorized type of trade, and I advance two key arguments. First, I argue that intra-industry trade undermines the traditional domestic political coalitions over trade that are predicted by classic theories of trade politics. I argue that as broad coalitions become more difficult to maintain, individual firms in industries subject to high levels of intra-industry trade become more politically active, lobbying alone for their preferred trade policies. Second, I argue that intra-industry trade incentivizes lobbying not only by firms seeking protection, but also by exporters seeking liberalization. To develop my theory, I consider the economics of intra-industry trade, relying on the literature in economics known as 'new trade theory.' In Chapter 2, I discuss the economic sources and distributional effects of intra-industry trade, from which I derive my hypotheses about political implications. In Chapter 3, I present my model of the effects of intra-industry trade on preferences, trade coalitions, and lobbying activity over trade. In Chapter 4, I examine the role of intra-industry trade in shaping the structure of trade

policy coalitions in the United States. I test my arguments using firm-level lobbying data for US manufacturing industries. In Chapter 5, I link my findings in Chapter 4 to trade policy outcomes. I develop hypotheses about the way that changes in lobbying and trade coalitions are likely to affect resulting levels of protection in OECD economies. I test these hypotheses quantitatively with cross-national data, finding that industries with higher levels of intra-industry trade tend to enjoy more liberal trade. In both of these chapters, I find support for my arguments about the effects of intra-industry trade on trade policy coalitions and firm lobbying activity. This dissertation contributes to our understanding of how international trade affects domestic politics and societal demands for liberalization or protection.

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CHAPTER 1

AN INTRODUCTION TO TRADE POLITICS AND INTRA-INDUSTRY TRADE

The Puzzle

International trade creates winners and losers. Though beneficial for society as a whole, trade makes some individuals within a society better off and it makes some individuals worse off. The categories of winners and losers shift along with one's analytical lens: men versus women, high-skilled workers versus low-skilled workers, employers versus employees, traded sectors versus non-traded sectors, capital-intensive industries versus labor-intensive industries, to slice it up just a handful of ways. As the advanced industrial democracies have grown ever more integrated into the global economy, societal groups have waged continual political battles over the direction of trade policy. The salience of these political battles varies dramatically, as do the players. A significant and much-studied shift in the landscape of trade coalitions in the United States and other advanced democracies has been the dissolution of broad class-based coalitions into much narrower

industry-based coalitions. Political parties, at times unified by a cohesive trade policy platform, now are typically fragmented by competing trade preferences within the party.

In the US, trade policy coalitions in the nineteenth century were well organized, highly active and broadly class-based or sector-based. Industrialization in the Northern states in the 1800s gave birth to a powerful protectionist movement among the industrialists and their workers. These infant industries sought protection from competition from European manufactured imports. Protectionist preferences dominated the Republican party of the time, and trade debates with the Democrats, representing the free-trading, export-dependent Southern farmers, were fierce. Protection was a cornerstone of American trade policy through the 1920s, when farmers began to lose faith in free trade and legislators erected raised tariffs on agricultural products, culminating with the infamous Smoot-Hawley tariff in 1930. Over time, the nature of trade policy coalitions has changed dramatically. In the postwar period, the urban coalition of industrialists and workers broke down as leading labor unions began gradually to favor protectionism. But broad class-based coalitions have not been a feature of the postwar trade coalition landscape in the US. Increasingly, coalitions both of industries and labor have dissolved, and lobbying today is primarily undertaken by industry-based, rather than class-based groups, as well as by individual firms. Industry, labor, and political parties were all divided during debates over major pieces of trade legislation such as NAFTA and more

recent bilateral trade deals with South Korea, Panama and Colombia that languished in Congress for years before being concluded.

Trade coalition patterns vary not only across time, but across place as well. Trade politics in Great Britain remained strongly class-based throughout the nineteenth century, with strong urban worker coalitions and industrialist coalitions joining in favor of free trade while landowning classes were firmly protectionist. The famous "marriage of iron and rye" in Germany teamed pro-trade capitalists and landowners against labor. In France, however, class coalitions have never played a role in trade politics, and coalitions have long been organized along narrower industry lines. In the EU today, lobbying over trade is highly industry-based. Unions play a muted role in trade debates, and while the vast majority of European industry is free-trading, certain industries such as textiles and automobiles are deeply divided over their trade preferences.

What explains the wide variation in trade politics both across and within the developed economies? Why have the coalitional landscapes changed so much during the twentieth century? Why has broad class and sector-based consensus broken down in the US and some of the other advanced democracies? Why are certain sectors and industries deeply divided over trade while others remain united in their positions? Finally, why has trade sometimes been highly salient (such as in the NAFTA debates) and at other times

barely rousing any public interest, as in several recent bilateral trade deals negotiated by the US?

These questions, which bring us to the nexus of domestic and international political economy, are the central concern of this dissertation. In the chapters that follow I argue that the leading models of democratic trade politics, while very powerful in explaining historical trade coalitions, lose leverage in their attempts to explain more recent political developments in trade politics and policy. I argue that the majority of political science work on trade politics has not kept pace with important empirical developments in the structure of international trade that have changed the distributional effects of trade and, consequently, the resulting cleavages and coalitions.

In this dissertation I draw on recent work from economists on intra-industry trade to develop a model of trade politics that better fits today's trading patterns, and as a result, better explains today's political battles over trade. I argue that the rise of intra-industry trade among developed economies has undermined broad class and sector consensus over trade policies, as the costs of intra-industry trade fall primarily on individual firms rather than entire classes or industries. These redistributive implications are profoundly different from those of the classic inter-industry, endowments-based trade, incentivizing individual firms to mobilize politically as the consensus underlying broader coalitions breaks down. In the chapters that follow, I analyze the domestic economic and

political effects of intra-industry trade to develop and test a model of the politics of international trade in developed economies.

I will demonstrate in the following chapters that the ways states and firms trade plays an important role in determining the shape of coalitions and the trajectory of trade politics. Other scholars provide compelling alternative explanations, however, and I examine those here. While all of these explanations hold some validity and explanatory power, an advantage of my approach is that I can better explain industry-level variation in trade coalitions and trade politics. Explanations that focus on systemic features of the international trading regime or on domestic institutional structures are ill-equipped to account for the ways that coalitions over trade--and their preferred policies--vary at the industry level, within a given country.

Explaining Trade Coalitions in Democracies

Economic Models: factors, sectors, and factor mobility

Much of the seminal political science work on the politics of international trade is grounded in "classic" trade theory. According to the standard Ricardian model, comparative advantage drives international trade (Ricardo 1817). Each country will specialize in the production of the good it produces most efficiently (with the least labor) and it will trade for the rest. The Heckscher-Ohlin model builds on Ricardo's formulation

by introducing factor endowments as the basis of comparative advantage.[1] Because countries differ in terms of factor endowments, they will each be relatively better at producing different types of goods, depending on what is the abundant factor in each economy. Firms specialize to produce goods exploiting abundant factors, and countries trade for goods that are produced more efficiently in other countries with different mixes of factor endowments. Trade is based on comparative advantage and it occurs between countries with different factor endowments.

Most of the political economy literature on trade policy in developed countries accepts the endowments-based assumptions of classic trade theory. The two leading models of the income effects of trade, the Stolper-Samuelson and Ricardo-Viner theorems, are derived from endowments-based trade models. The redistributive effects of endowments-based trade are clear: the owners of abundant factors gain as trade expands, while the owners of scarce factors suffer income losses. When factor mobility is high, the Stolper-Samuelson theorem predicts that trade returns will accrue across classes: classes that own the abundant factor (whether landowners, industrialists, or workers) will enjoy higher returns, while classes that own the scarce factor will suffer income losses. When factor mobility is low and one or more factors is "specific" to an industry, the Ricardo-Viner theorem predicts returns from trade will accrue to sectors those that use the

[1] For Ricardo, the basis of comparative advantage lay in the amount of labor required to produce a good. His labor theory of value held that countries would specialize in the production of the goods that required the least amount of labor inputs relative to other goods.

abundant factor intensively while sectors that use scarce factors intensively will suffer losses.

As noted above, Rogowski's (1989) seminal contribution to the trade policy literature is his use of the Stolper-Samuelson theorem to explain patterns in trade cleavages and coalitions between landowners, workers and owners of capital in a number of societies in different time periods. He argued that owners of the abundant factors in an economy will form a free-trade coalition against owners of scarce factors, who will ally in favor of protection. For example, labor unions will hold different trade preferences than industrialists in countries where labor is scarce and capital is abundant. Much of the work that followed Rogowski's pioneering and parsimonious contribution sought to resolve a weakness of his study. As Rogowski himself noted (1989:126-128), his expectations about the domestic effects of international trade struggled to explain postwar politics in the advanced industrial societies. His theory failed to explain why scarce US labor remained largely free trading until the 1970s. He can't explain growing protectionism in the postwar period among trade unions and labor parties in labor-rich Europe. And finally, his theory cannot make sense of what some see as growing protectionism among US capitalists since the mid-1970s (Midford 1993). Numerous studies have attempted to improve upon Rogowski's model by developing more sophisticated measures of factor endowments or including additional productive factors (skilled labor vs. unskilled labor, for example, as in

Midford 1993). Others test his model using updated data (Jeong 2009) and/or survey data of individual attitudes (O'Rourke 2003, Scheve and Slaughter 2001), while others include additional political variables to better explain puzzling outcomes (Garst 1998, 1999).

Other scholars have argued that the Ricardo-Viner model better explains conflict over trade in the advanced industrial states where factor mobility is low. The implication of the Ricardo-Viner theorem is that sector-based cleavages (composed of both workers and owners in a given industry or sector) will emerge as sectors that benefit from liberalized trade (those that use the abundant factor intensively) ally against sectors that lose out (those that use scarce factors intensively). Frieden (1992) argues that when economic actors hold assets that are specific to a particular use or industry, sectoral conflict over liberalization is the likely result. Labor and capital are more likely to lobby together in support of policies beneficial to their industry, so cleavages and coalitions are likely to fall along industry lines. Frieden also argues that in these cases, the government is likely to intervene on behalf of industry-based interest groups rather than more diffuse public interest or advocacy groups. Alt et al (1999) support this theory with evidence that firms with greater asset specificity, measured as research and development investments and job immobility, are more likely to lobby for protective subsidies than other firms.

Still other studies have sought better measures of factor mobility. A central motivation behind many of these studies has been to put Stolper-Samuelson and Ricardo-

Viner to the test, and the consensus is that, as the theorems themselves claim, Stolper-Samuelson effects tend to prevail when factor mobility is high and Ricardo-Viner when factor mobility is lower (Brawley 1997, Beaulieu 2002, Ladewig 2006). Hiscox (2002) developed one of the first measures of factor mobility in order to test the two models. He measured factor mobility over time in several advanced economies and his findings confirm that when factor mobility is high, political coalitions will form along broad class-based lines. When factor mobility is low, trade coalitions form along sectoral lines. Hiscox examines the policy preferences of political party, peak association and lobby groups to test these hypotheses.

These approaches certainly explain some of the variation we observe in trade politics and policy across time and across countries, although, as I will demonstrate more fully in Chapter 3, they lose explanatory power as today's advanced economies move increasingly away from a Heckscher-Ohlin world of endowments-based, inter-industry trade and engage in an entirely different kind of trade: intra-industry trade. Additionally, their neglect of the supply-side of trade policymaking has left them open to powerful critiques by institutionalist analyses of trade policy.

Collective Action/Endogenous Tariff literature

If demand-side approaches focus on deducing trade preferences from material factors, collective action approaches are best equipped to analyze the next step of the political process: the aggregation of societal interests into pressure groups or grass-roots movements for the purpose of influencing policy. Though demand-side approaches incorporate some collective action considerations into their explanations of trade coalitions, collective action problems also exist independently of the effects of factor configurations or factor mobility.

Pareto phrased a central collective action problem in trade politics quite succinctly: "A protectionist measure provides large benefits to a small number of people, and causes a very great number of consumers a slight loss. This circumstance makes it easier to put a protectionist measure in place" (Pareto 1927: 379). This insight about group size was developed by Olson (1965), who argued that political action is essentially a public good in that it benefits society as a whole and, as such, is plagued by free riding. Smaller groups are more successful at incentivizing their members to contribute to political action (though this does not mean they will necessarily win political battles), through monitoring their involvement and providing selective incentives. The implication of this for trade policy is that narrow, industry-based groups with fewer members are more likely to form and mobilize than broad class coalitions, ceteris paribus. Lobbying over trade will be less

costly for narrow industry groups than for national coalitions of consumers or class-based actors.

A second insight concerns the uneven distribution of costs and benefits of public policies. Schattschneider's famous analysis of the passage of the Smoot-Hawley tariff was based on the insight that with trade protection, the "benefits are concentrated while costs are distributed" (Schattschneider 1935: 128). As Olson argued, members of groups that expect to enjoy concentrated benefits from a policy have more incentives to invest in political action than members of groups that expect to suffer only diffuse costs from the policy. Taking these two insights together, the greater ability of small producer groups to overcome free rider problems and the concentrated benefits they expect to receive from protection make them more likely to undertake costly political action than broad coalitions of consumers. Importantly, these collective action costs exist independently of political institutions as well as economic variables such as factor characteristics, although they can be exacerbated or minimized by certain institutional or structural configurations.

The endogenous tariff literature draws heavily on collective action theory in its arguments that trade policy and tariff levels directly result from domestic politics and domestic preferences over trade policy. Trade policy tends to be sub-optimal and biased toward protection because small producer groups seeking protection can mobilize more easily than other groups to influence policy. Early seminal contributions to this approach

are Mayer (1984) and Magee, Brock and Young (1989). Mayer (1984) shows how even when the median voter prefers free trade, small producer groups can successfully secure protectionist policy results. Magee, Brock and Young argue that rent-seeking politicians will provide policy benefits to the best organized interest groups, who are able to provide them with campaign resources, and in trade policy this tends to be small groups of protectionists.

The collective action problems facing diffuse groups are one reason why voters are not central players in many studies of trade policy. Voters are not expected to exert significant pressure on policymakers over trade, nor hold them accountable for policy choices. A notable exception is Verdier (1994), who argues that the key to understanding trade policy outcomes, as well as the nature of trade politics, is the level of trade salience among voters. When trade is salient, Verdier argues that office-seeking politicians are constrained by voter preferences and will enact policies that are broadly in line with what major groups of voters (workers, farmers) demand. When trade is not salient among the electorate, politicians are free to supply special interest lobbies with their preferred policies in exchange for rents. In other words, only when voter salience is low will individual sectors, industries or firms wield the kind of power expected by much of the trade politics literature. Other voter-driven studies link legislator positions on trade policy with constituent interests such as district unemployment rates, import-competing

industries in the district, union contributions and campaign contributions, although all these studies also find that party affiliation has an independent effect on legislator votes as well (Baldwin 1985, Coughlin 1982, Tosini and Tower 1987). Guisinger (2009) critiques voter-driven models based on survey responses of more than 36,000 voters in 2006, who neither knew trade issues at stake, knew their policymakers' positions on recent trade votes, nor planned to change their propensity to vote for the incumbent in the next election based on trade stances. This analysis is more in line with the general claim that because trade's benefits or damages are diffuse, voters are unlikely to strongly pressure policymakers one way or another.

Institutions

Along with preferences and collective action problems, another important factor in the formation of trade coalitions and trade policy remains: the role of political, electoral, and policymaking institutions. These institutions are part of the supply-side of policymaking, along with policymakers themselves. Institutional analyses problematize the supply-side and theorize that institutions incentivize as well as disincentivize political action by different types of interest groups. Similarly, institutions create incentives and disincentives for certain types of policy responses by elected and non-elected officials. An institutionalist approach to studying trade coalitions as well as policy outcomes would

evaluate the ways that different institutional settings condition varying forms of trade politics, coalition patterns and policy outcomes. An institutionalist approach also assumes a political rationale for adopting certain trade policies, alongside (or instead of) an economic rationale.

One argument among institutionalists is that the location of trade policymaking authority affects policy outcomes. The presidential liberalism thesis, from the American politics literature, holds that US presidents are more free-trading than members of Congress. The assumption behind this thesis is that presidents have a larger constituency size--the entire nation--so they are more likely to support free-trade policies that are good for the nation as a whole. Members of Congress, on the other hand, tend to be more protectionist due to their smaller constituencies. If constituents in their districts benefit from protection, Congressional representatives are likely to be protectionist. This thesis was initially advanced by Schattschneider (1935) and has been developed in more recent studies. Katzenstein (1977) argues that presidents are more immune to the interest-group pressure for protectionism to which members of Congress are highly susceptible, and Baldwin (1985) argues that delegation of trade policy to the president will result in freer trade policy. Building on this, Lohmann and O'Halloran (1994) argue that divided government leads to more protection as legislators hesitate to delegate trade policy authority to a president whom they fear will grant protectionist concessions on a partisan

basis. Hiscox (1999) and Sherman (2002) critique the presidential liberalism thesis, providing evidence that it is ahistorical (Hiscox) and confined only to the Democratic party (Sherman). Ehrlich (2009) challenges the underlying assumption of the presidential liberalism thesis and finds that constituency size has no effect on Congressional trade policy votes once other variables are controlled.

Party institutions may also affect policy and coalition formation. Hankla (2006) argues that countries with strong political parties have freer trade policy, as centralized parties can exert more discipline on individual party members and are better insulated from particularistic demands from constituents with interests in protection. These parties are better equipped to pursue free trade policies that are better for the country as a whole. This also implies that strong, centralized parties will discourage the mobilization of narrow interest groups and incentivize the formation of broad coalitions that include a greater proportion of the electorate. McGillivray (1997) argues that the level of party discipline structures legislator incentives, and she finds that legislators make different trade policy decisions depending on whether they are part of a high party discipline system like Canada or a low party discipline system like the US. Milner and Judkins (2004) argue that partisanship matters in developed countries, where leftist parties consistently support protection more than rightist parties, and this is consistent with a long-held thesis in the study of American politics that party identification, not constituent

interests, is the best predictor of legislative voting (Turner and Schneier 1970, Tosini and Tower 1987). Terrill (1973) and Weller (2009) both find that party affiliation influences legislative votes on trade policy even when controlling for constituent interests.

Still other analysts theorize about the role of electoral and policymaking institutions on policy outcomes. Rogowski (1987) finds that proportional representation systems better insulate policymakers from narrow interest groups and produce more open trade policies. Adopting similar logic, Grossman and Helpman (2005) argue that majoritarian electoral systems suffer from a protectionist bias. Conybeare (1991) finds that electoral success matters: a legislator's share of the vote in the previous election influences his or her willingness to provide protection in subsequent trade legislation. In a cross-national analysis of developed countries with different electoral structures, Kono (2009) finds that electoral systems supportive of narrow interests are associated with higher levels of trade protection.

The structure of trade policymaking also may affect policy outcomes, as well as trade coalition formation. Alt and Gilligan (1994) argue that the degree to which policymaking institutions favor broad coalitions versus narrow interest groups determines which trade policies are adopted. Ehrlich (2007) argues that as access points to policymakers increase, demands for protection through lobbying activity will increase as well, because lobbying becomes less costly. This logic is similar to arguments that as veto

points increase, lobbying becomes more costly and may discourage coalition mobilization (O'Reilly 2005, Henisz and Mansfield 2006). Bailey, Goldstein and Weingast (1997) argue that the Reciprocal Trade Agreements Act of 1934 was largely responsible for the shift away from protectionism in the US in the following decades, because it delegated some authority over tariff policy to the presidency and moved the US to a system of reciprocity-based tariff-cutting that made US tariff cuts contingent on reciprocal cuts by trading partners.

Institutions certainly play a major role structuring societal incentives to mobilize (or not) to influence trade policy. They arguably affect policymakers even more. If policymakers derive their greatest utility from staying in office, their trade policy positions are epiphenomenal to the institutional context within which they operate. Society, on the other hand, has exogenous preferences about trade, independent of political institutions, and institutional analyses must begin with an understanding of these preferences. Institutions only tell part of the story. When society's trade preferences change, incentives to overcome collective action problems to mobilize politically may also change, independently of institutions.

New Trade Theory

Many analysts now question whether the classic Stolper-Samuelson and Ricardo-Viner models are the appropriate trade models to apply to today's developed countries (Alt et al 1996, Gilligan 1997, Ruffin 1999, Kono 2009, among others). The "new" trade theory, developed by economists such as Paul Krugman and Elhanan Helpman, seeks to explain the explosion of intra-industry trade among the developed economies in the postwar period. In all of the OECD economies, trade has become increasingly intra-industry rather than inter-industry (OECD 2002). Indeed, the developed economies are exceptional vis-à-vis the rest of the world for the high percentage of intra-industry trade in their trading profiles. Intra-industry trade is trade in similar goods, such as types of automobiles, mobile telephones or pharmaceuticals. As defined by Krugman, intra-industry trade (IIT) "consists of two-way international trade within an industry because firms in different countries will produce different differentiated products" (1990: 30). In terms of the standard trade theories discussed above, the crucial distinction between intra-industry and inter-industry trade is that intra-industry trade occurs between countries with similar factor endowments.

What are the economic effects of intra-industry trade? Conventional wisdom is that the adjustment costs of IIT are lower than endowments-based trade. Because IIT most often occurs between countries with similar factor endowments, entire sectors are

not shut down or reallocated as a result of this trade. The more similar two countries are in terms of their endowments, the less likely is IIT to lead to losses for a particular factor or sector. The less similar the trading countries are, the more likely that an entire factor will lose or an entire sector will be shut down. In theory, since all the trading firms produce a different variety of goods, each can continue to produce and export under open trade, without any being forced out of business. According to several leading political economists, this type of trade has "neutral consequences for income distribution and the possibility that everyone gains from increased trade through the expanded number of products available" (Alt et al 1996). Krugman argues that as long as the trading countries are sufficiently similar in endowments, any income distribution effects of IIT are offset by the gains to firms, workers and consumers as a whole (Krugman 1981). Both scarce and abundant factors will be better off due to the gains from a wider variety of goods.

However, this "harmonious" view of IIT has been challenged by recent literature with access to newer firm level data. Scholars working in what is sometimes (and inelegantly) termed the "new new trade theory" argue that there are real losers of intra-industry trade, and these losers are individual firms. While IIT does not reallocate resources away from an entire industry, it does reallocate resources away from less productive firms to more productive firms within a given industry (Melitz 2003, Trefler 2004; Bernard, Redding and Schott 2007). Intra-industry trade is likely to benefit the

most productive firms that can compete successfully both in export markets and in the newly liberalized domestic market, while less productive firms are unlikely to export and also face intensified pressure from imports. Without trade protection, many inefficient firms are forced to exit. Though political economists frequently speak of "export sectors", the new firm heterogeneity literature emphasizes the fact that within these sectors, only a small percentage of firms actually export. The majority of firms are small, non-exporting, and less productive. IIT places considerable pressure on these firms, and greater exposure to trade forces many of these firms to exit and it decreases the number of domestic firms within an industry, while raising the overall productivity of the industry by reallocating resources toward the more productive firms (Melitz 2003).[2] The effect of IIT on wages is not uniform either. Studies show that IIT raises wages in exporting firms while lowering wages in the least productive firms that produce only for the domestic market (Amiti and Davis 2012).

This is the interesting aspect of intra-industry trade for political economists studying trade policy: it does not have the same distributional consequences that endowments-based trade does. As a whole, intra-industry trade enhances the welfare of the economy by increasing the size of the market, reallocating productive factors toward

[2] Melitz's model also demonstrates theoretically why intra-industry trade is welfare-enhancing for industries: an industry's overall productivity increases as the least productive firms exit and resources are allocated to the most productive firms, and also as the most productive firms increase their sales by exporting.

the most productive firms, raising wages in the most productive firms, and providing greater product variety for consumers. However, it increases competition among producers and can therefore drive less competitive firms to exit. Smaller firms that do not export, and their workers, are likely to be the primary losers of intra-industry trade.

The Argument

In this dissertation, I argue that due to changing patterns in the way countries trade--and particularly developed countries--existing explanations of trade coalitions and trade policy have significant weaknesses. Because of shifting trading patterns from an inter-industry to an intra-industry landscape, many of the efforts noted above to refine and better specify the standard endowments-based trade models are off the mark. Though these models continue to apply to much North-South trade and South-South trade, a significant amount of North-North trade is no longer founded upon endowments-based comparative advantage, so it does not conform to the economic assumptions underlying the classic models. I argue that in order to explain many trade-related political dynamics in today's developed economies we must use the new theories of intra-industry trade to derive new hypotheses about coalition formation, collective action problems, incentives to act politically, and institutional interactions with the new coalitional landscape.

In the following chapters, I develop a model to explain how the move from endowments-based to intra-industry trade effects trade politics and policy. I show that that the most important effect of intra-industry trade on domestic trade politics is in its undermining of sectoral consensus over trade policy. In industries subject to intra-industry trade, the leading, exporting firms within the industry will support trade liberalization while laggard, domestic-oriented firms will support protection. The effect of these competing, intra-industry preferences is to hollow out industry-based trade associations. These associations will no longer be able to take strong lobbying positions on trade policy without acting in direct contradiction to the interests of some of its members. As associations become less active politically over the content of specific trade policies, exporters are forced to overcome their traditional collective action problems to provide a counterweight political voice to the protectionists within their industry. Firm-based lobbying over trade policy increases relative to lobbying by industry coalitions, and overall lobbying also increases as firms with competing preferences must act to counter each other in trade political battles. After developing these arguments, I test them with new firm-level lobbying data from the United States. I show that intra-industry trade has a strong and independent influence on the structure of trade coalitions. Specifically, in industries with higher levels of intra-industry trade, I show that coalition-based lobbying decreases relative to individual firm-based lobbying, even after controlling for other

industry characteristics that might contribute to less active associations and more active firms.

I also argue that trade policy outcomes are affected by intra-industry trade. Specifically, tariffs will decrease in IIT industries as politically powerful, exporting firms engage politically in support of liberal trade rules. Although smaller, non-exporting firms will suffer from decreased tariff protection, I argue that electorally-motivated policymakers, concerned with satisfying both sets of lobbying firms, will compensate the losing firms with increased non-tariff measures of protection. I test these arguments with cross-national, sector-level data on intra-industry trade, tariff barriers and non-tariff measures of protection and find preliminary support for my claims, though the availability of multilateral data on NTMs remains a serious limitation.

A comprehensive analysis of trade coalitions must consider the role of both economic structure and institutions. Without considering institutions, we risk confusing interests with outcomes. By ignoring economic structure, institutionalists risk misunderstanding underlying interests. On their own, each is a necessary but insufficient explanation of trade politics and policy. This dissertation attempts to incorporate both economic sources of preferences and institutions into the analysis, but nevertheless leans heavily toward the demand-side of the policy process. Even so, my efforts to develop a more comprehensive and testable model of the influence of intra-industry trade on trade

coalitions and policy outcomes is a major step forward and important update of the demand-side models relied upon by political economists who study trade politics. Only when we have a clear understanding of the stakes involved for economic actors in the new trading environment will institutional analyses provide empirically robust explanations.

The Plan of this Dissertation

This dissertation proceeds as follows. In Chapter 2, I provide a historical overview of the rise of intra-industry trade in the postwar period, and I discuss its sources and its effects on broad patterns of international trade and contention in national trade politics. In Chapter 3, I develop a model of the effects of intra-industry trade, on preferences, trade coalitions, and lobbying activity over trade. I present a model of the ways that intra-industry trade affects the distribution of incomes in society, societal preferences, the structure of trade coalitions, the lobbying landscape, and finally, trade policy outcomes. In Chapter 4, I examine the role of intra-industry trade in the structure of trade policy coalitions in the United States. I test my arguments about the effects of intra-industry trade on coalitions using lobbying data for US manufacturing industries. In Chapter 5, I link my findings in Chapter 4 to trade policy outcomes. I develop and test hypotheses about the way that changes in lobbying and trade coalitions are likely to affect resulting levels of protection in OECD economies. I test these hypotheses with cross-national data

at the ISIC 3-digit sectoral classification level. In Chapter 6, I conclude with a discussion of the implications of this study for future research on the politics of international trade.

CHAPTER 2

THE RISE OF INTRA-INDUSTRY TRADE IN THE POSTWAR TRADING REGIME: AN EMPIRICAL AND THEORETICAL OVERVIEW

Historical Patterns in Intra-Industry Trade

Ever since the writings of Adam Smith and David Ricardo, international trade has been explained as a process by which countries specialize in the production of goods in which they have a comparative advantage and trade for the rest. As in the classic example, Portugal exports wine and imports British cloth. Indeed, from the mid-nineteenth century up until World War I, the time period often referred to as the "first wave of globalization", international trade patterns were primarily driven by comparative advantage. As one economist describes it:

> The United States exported heavily to Europe while importing tropical raw materials, like jute, sugar and coffee, from the less developed economies of the periphery. The Continental European nations, as a group, balanced imports of temperate and tropical foodstuffs and raw materials primarily by exporting manufactured goods to Britain. Britain, in turn, earned surpluses by selling manufactured goods to the periphery, on shipping and financial services, and from large overseas investment (Harley 1996:xii).

According to Harley, even the manufacturing trade between the United States, Britain, and the European Continent was inter-industry, with Britain exporting highly processed "old" manufactured goods such as textiles, clothing, ships, and railroad materials while the US and the Continent specialized in "new" industrial goods such as chemicals and steel. In 1910, 75% of Britain's exports were manufactures, and only 25% of its imports were manufactures. In the same year in land-rich and labor-scarce Canada, by contrast, manufactures accounted for 62% of imports and only 20% of exports (Baldwin and Martin 1999). Less industrialized nations (including many colonies) were important trading partners at this time, serving as sources of manufacturing inputs and receivers of manufacturing exports.

Trading patterns changed significantly after World War II with the onset of the "second wave" of globalization. In the postwar period, the United States and Western Europe embarked on a trade liberalization project embodied multilaterally in the General Agreement on Tariffs and Trade (GATT), and regionally within the European Community. At the same time, technological developments allowed transport costs to continue to fall. Also during this time, North-North trade and two-way manufacturing trade took on a greater importance than in the first wave of globalization (Krugman 2008). In the United Kingdom in 1993, manufactures accounted for 77% of imports (compared to 25% in 1910) and 97% of exports (compared to 75% in 1910). Not only were

the advanced economies now exporting manufactures as well as importing them, they were engaged in this two-way manufacturing trade with each other. In 1996, 83.4% of European exports were destined for Europe or North America, compared to 75.5% in 1910 (Baldwin and Martin 1999).

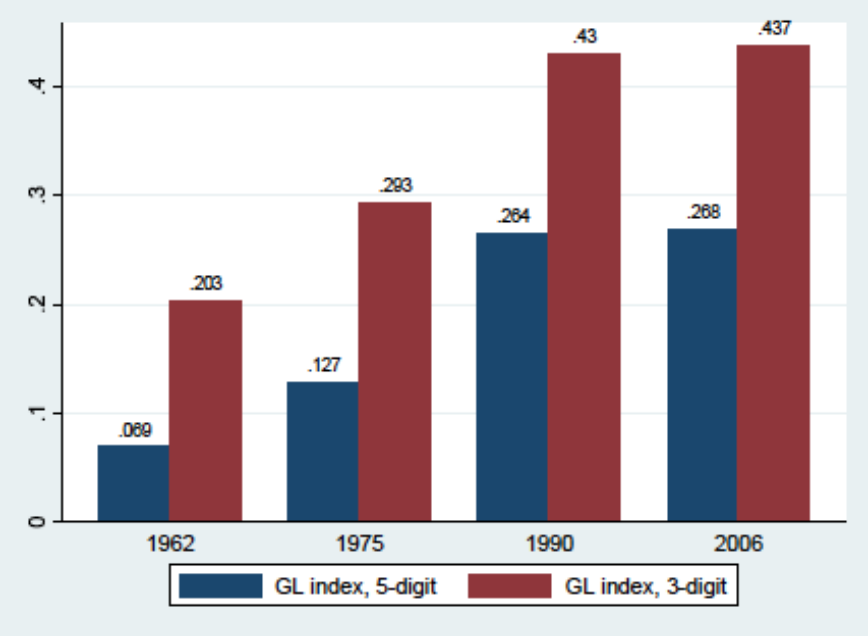
Table 2.1: Manufactures as a percentage of exports and imports, 1910 and 1993

	Exports-1910	Imports-1910	Exports-1993	Imports-1993
UK	75.4	24.5	97	77.2
France	59.2	25.3	78	74.6
Germany	74.5	24.5	90	73.6
Italy	38.3	38	89	62.9
USA	47.5	40.7	82	77.1
Canada	19.9	62.5	66	81.9
Japan	80.8	38.3	97	46.3

Source: Baldwin and Martin 1999. Data from IMF trade statistics.

In the postwar period, a major change in the structure of international trade was not just that North-North trade increased, or that manufacturing trade increased. Two-way trade for goods within the same industrial category, also known as intra-industry trade, became a significant feature of the global economy, but especially for the developed countries. By 2006, 44% of all world trade was intra-industry when industry is defined at the 3-digit sector level, and 27% of all trade was intra-industry when industry is defined at the 5-digit product level (Brülhart 2008).

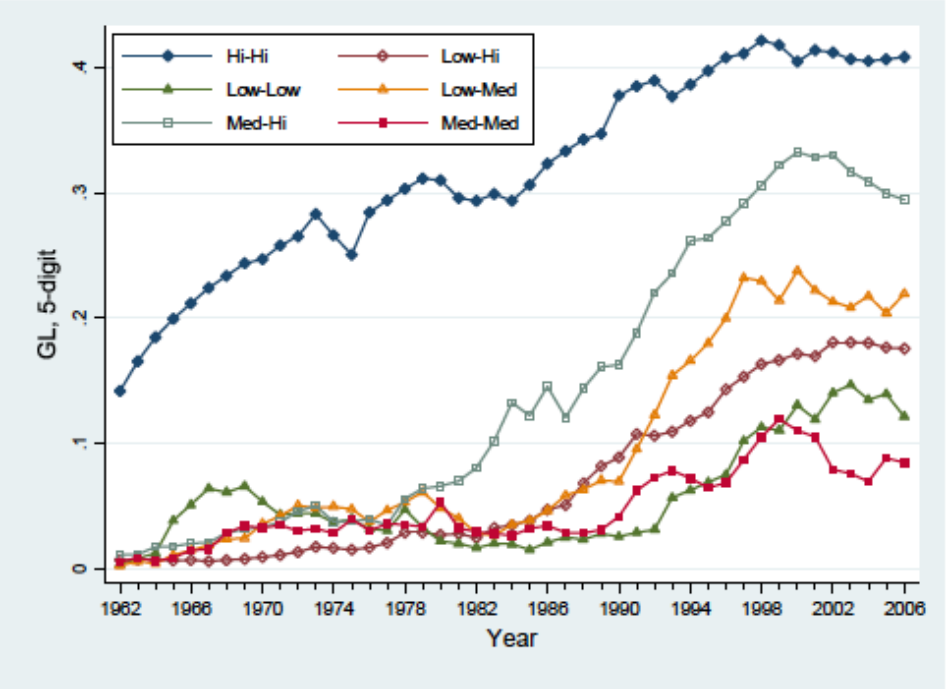
Figure 2.1: Global Intra-Industry Trade, 1962-2006



Source: Brülhart 2008, World Bank 2009.

As shown in Figure 2.2 below, trade in similar goods (defined at the 5-digit level) has increased between countries in all income groups, but it occurs at the highest levels among high-income countries. By 2006, intra-industry trade at this fine level of disaggregation accounted for approximately 40% of trade between developed countries, and this figure is obviously much higher when trade is disaggregated to the 3- or 4-digit level, as it is in much of the literature.

Figure 2.2: Evolution of Global Intra-Industry Trade by Country Income Group, 1962-2006



Source: Brülhart 2008. Data from WITS database. Country groupings defined by World Bank.

Types of Intra-Industry Trade

During the first wave of globalization, falling transport costs facilitated long-distance, comparative advantage based trade for "essentials" (Indian tea for British machinery for American cotton, for example), but even deeper drops in transport costs during the postwar period facilitated trade among neighbors for similar goods. These similar goods typically had relatively minor differences driven by diverse consumer tastes. The countries of Europe, especially, began trading with each other to expand variety in types of beer, automotive parts, footwear, and furniture, as just a few examples. Today, countries trade heavily in different varieties of consumer goods such as mobile telephones

produced by firms based in a variety of countries (Apple, Samsung, Nokia, Sony Ericsson, Motorola, Huawei), computers (Apple, Dell, Sony, Toshiba, Lenovo, Acer), and of course automobiles (General Motors, Volvo, Mercedes-Benz, Toyota, Hyundai). As the World Bank puts it, "in the old trade theory and with high transport costs, countries trade only what they need to. In the new trade theory and with scale economies, a love of variety, and low transport costs, countries trade because they want to" (2009:182). This trade in different varieties of similar goods is known as horizontal intra-industry trade.

In addition to horizontal trade in similar products, intra-industry trade also occurs for vertically differentiated products of varying levels of quality and price. For example, Italy produces a great deal of high quality, high-priced leather footwear for luxury markets and imports a great deal of lower quality, low-priced synthetic footwear for discount markets. The specialization in high-quality leather goods represents Italy's comparative advantage: Italy has an abundance of skilled workers and capital to invest in cutting-edge machinery. Countries such as China that specialize in low-priced footwear have an abundance of lower-skilled workers that assemble less skill-intensive product varieties.

A third type of intra-industry trade is trade in intermediate goods. The rise in trade in intermediate goods used as inputs in production processes was another effect of the falling transport costs during the second wave of globalization. As trade costs fell,

firms found it most efficient to specialize in the production of only a subset of inputs in a complete production process, and trade for the rest. This is known as the vertical disintegration of production, and it resulted in production becoming increasingly internationalized in the latter half of the twentieth century. Production processes that were once concentrated from start to finish in high-income countries now take place across national borders: certain stages in the production process are outsourced to other countries, often based on comparative advantage. For example, although Boeing airplanes are "made in the USA", Chinese suppliers famously manufacture parts used in the production of every Boeing airplane. With low transport costs, trade becomes less costly and firms have an incentive to specialize in producing fewer goods in order to capture the benefits of economies of scale. Firms specialize when the gains from specialization outweigh the costs of trading for other inputs used in production. Thus, as transport costs fell in the 20$^{\text{th}}$ century, there was a large increase in trade in intermediate goods relative to final goods. Intra-industry trade in both types of goods continues to increase. In 2006, approximately 40% of global trade in intermediate goods was intra-industry, approximately 35% of global trade in final goods was intra-industry, up from about 12% for both types of goods in 1962. By contrast, in 2006, approximately 11% of trade in primary goods was intra-industry, up from approximately 4% in 1962 (Brülhart 2008).

Trade in intermediate goods is a result of high levels of specialization that are only possible when transport costs are low.

Sector-level and country-level patterns in intra-industry trade

Levels of intra-industry trade are highest for manufactured goods, as these goods tend to be more differentiable than primary goods or raw materials[1]. Among manufactured goods, those with the highest extent of intra-industry trade are the more sophisticated manufactured products such as transport equipment, chemicals, and machinery, although this does vary by country. More complex manufactured goods are not only more differentiable, but they also may be most subject to economies of scale in production (leading firms to specialize in fewer products) as well as vertically disintegrated production across countries. All these factors increase the likelihood of two-way trade within an industry. Across the high-income economies, food products tend to have the lowest levels of intra-industry trade, on average, typically around 40% or less in the 1990s (OECD 2002). Table 2.2 below shows the ten goods (defined at the 4-digit SITC code) that were subject to the most intra-industry trade within the high-income OECD economies in 2012.

[1] Manufacturing trade as a percentage of total trade is nearly 80% in Mexico, approximately 70% in the EU, US, Korea and Japan, 60% in Canada and 40% in Australia (WTO Trade Statistics 2010).

Table 2.2: IIT Among High-Income OECD Countries, Top 10 Goods, 2012

SITC code	IIT	Product description
5232	0.999	Chlorides, Bromides, Iodides
8931	0.999	Plastic packaging articles and closures (stoppers, lids, caps, etc)
7473	0.999	Check valves
6424	0.999	Paper and paperboard, cut to shape
5542	0.999	Organic surface-active agents other than soap
6573	0.999	Textile fabrics and products coated or impregnated, not elsewhere specified
7245	0.999	Machinery for textile weaving, knitting, etc
4113	0.999	Animal oils, fats, and greases
732	0.998	Food prep not elsewhere specified, containing cocoa, over 2kg
7441	0.998	Works trucks, tractors, and parts thereof, not elsewhere specified
6641	0.998	Glass in the mass, in balls, rods, or tubes (unworked)

Source: WITS data. SITC, Rev. 4, 4-digit level.

Levels of intra-industry trade also vary at the country level, even among the high-income countries, which all tend to have high IIT relative to lower income countries, as shown in Figure 2.2 above. In general, countries that are highly dependent on trade also tend to have very high levels of intra-industry trade. Among the major advanced economies, South Korea and Japan are notable for their low levels of intra-industry trade, although IIT is on the rise in both countries. Intra-industry trade is low in these countries for a few reasons. First, heavy export-orientation (and import restrictions, especially in South Korea) kept imports low relative to exports. Second, much of Japanese manufacturing has traditionally been vertically integrated, minimizing the importation of production inputs. As import restrictions are lifted and Japanese firms increasingly source from affiliates throughout Asia, intra-industry trade is increasing in both these countries.

Table 2.3: Total IIT by country, 2012

Country	Intra-Industry Trade
Belgium	0.73
Netherlands	0.70
Germany	0.64
Spain	0.60
Great Britain	0.57
USA	0.54
Portugal	0.48
Slovenia	0.48
Switzerland	0.45
Canada	0.42
Finland	0.40
Japan	0.37
Ireland	0.36
Luxembourg	0.32
Australia	0.30
New Zealand	0.26
Iceland	0.11
Cyprus	0.08

Source: COMTRADE, 4-digit SITC level, WITS database.

Krugman (1995) argues that highly open, "supertrading" economies such as Luxembourg, Czech Republic, Slovakia, and the Netherlands are heavily integrated into global production networks, exporting and importing a great deal of intermediate goods. Indeed, the OECD countries with the biggest increases in intra-industry trade in recent years are those that have received big increases in inward foreign direct investment, such as Czech Republic, Slovakia, and Hungary (OECD 2002). Volkswagen owns the largest exporting firms in these countries, firms that export not only automotive parts but fully assembled automobiles as well. Table 2.4 below shows changes in levels of intra-industry trade for individual countries during the 1990s.

Table 2.4: Changes in Intra-Industry Trade in OECD Countries

	1988-91	1992-95	1996-2000	Change
High and Increasing Intra-Industry Trade				
Czech Republic	n.a.	66.3	77.4	11.1
Slovak Republic	n.a.	69.8	76.0	6.2
Mexico	62.5	74.4	73.4	10.9
Hungary	54.9	64.3	72.1	17.2
Germany	67.1	72.0	72.0	5.0
United States	63.5	65.3	68.5	5.0
Poland	56.4	61.7	62.6	6.2
Portugal	52.4	56.3	61.3	8.9
High and Stable Intra-Industry Trade				
France	75.9	77.6	77.5	1.6
Canada	73.5	74.7	76.2	2.7
Austria	71.8	74.3	74.2	2.4
United Kingdom	70.1	73.1	73.7	3.6
Switzerland	69.8	71.8	72.0	2.2
Belgium/Luxembourg	77.6	77.7	71.4	-6.2
Spain	68.2	72.1	71.2	3.0
Netherlands	69.2	70.4	68.9	-0.3
Sweden	64.2	64.6	66.6	2.4
Denmark	61.6	63.4	64.8	3.2
Italy	61.6	64.0	64.7	3.1
Ireland	58.6	57.2	54.6	-4.0
Finland	53.8	53.2	53.9	0.1
Low and Increasing Intra-Industry Trade				
Korea	41.4	50.6	57.5	16.1
Japan	37.6	40.8	47.6	10.0
Low and Stable Intra-Industry Trade				
New Zealand	37.2	38.4	40.6	3.4
Turkey	36.7	36.2	40.0	3.3
Norway	40.0	37.5	37.1	-2.9
Greece	42.8	39.5	36.9	-5.9
Australia	28.6	29.8	29.8	1.2
Iceland	19.0	19.1	20.1	1.1

Source: OECD 2002. Countries are classified as having 'high' or 'low' level of intra-industry trade according to whether intra-industry trade is above or below 50 per cent of total manufacturing trade on average over all periods shown and 'increasing' or 'stable' according to whether intra-industry trade increases by more than 5 percentage points between the first and last periods, as shown in the final column.

The countries in Table 2.4 with low and stable intra-industry trade tend to be those that are least reliant on manufacturing exports and most reliant on exporting agricultural and marine products (Australia, New Zealand, Iceland, Greece) as well as oil (Norway) and other raw materials (Iceland).

In sum, more than half of all global trade is now intra-industry (World Bank 2009). Thus, a fundamental difference between the first and second waves of globalization is that in the first wave, countries traded with dissimilar countries for dissimilar goods, and in the second wave, they trade with similar countries for similar goods. In other words, in the first wave they traded for things they could not produce themselves (or at least not efficiently), and in the second wave, they also trade for things that they could theoretically produce themselves, quite efficiently. Trade between countries with similar factor endowments and similar levels of development is now part and parcel of international trade. The World Bank calls intra-industry trade "perhaps the most important economic development since World War II" (2009:171), but until the 1980s, as Krugman (2008) argues, existing trade theories could not explain this "new" trade. In the early 1980s economists set about developing new theories to understand the economic rationale for trade in similar goods.

"New Trade Theory" and the Logic of Intra-Industry Trade

The economists that pioneered new trade theory, such as Krugman (1981), Helpman (1981), and Dixit and Norman (1980) all argue that the primary economic basis for trade between similar countries is increasing returns to scale and product differentiation.[2] These two factors are related, but different. Increasing returns to scale is a producer-driven cause of intra-industry trade, while demand for a variety of differentiated products is consumer-driven.

First, when products are similar but differentiated, firms have some control over pricing, and market structure becomes that of monopolistic competition. Under monopolistic competition with differentiated products, it is assumed that firms enjoy increasing returns to scale. When there are increasing returns to scale, producers have an incentive to specialize in their particular product variety and increase output of that product. Increasing returns to scale (IRS) is a property whereby an expansion of input use raises output more than proportionately, and IRS usually result from production that has high fixed costs. These are typically development costs (pharmaceuticals, jet airliners), or setup costs of production lines. The high fixed costs associated with developing a new product line cause firms to specialize in a subset of products rather than produce a full range of product varieties within an industry. Firms specialize and then seek increasing

[2] Paul Krugman received the Nobel Prize in Economics in 2008 for his pioneering contributions to the "new trade theory."

returns to scale by producing for an international market. Exports of differentiated, manufactured goods with IRS properties often go to countries whose firms produce similar goods, because as firms specialize in a subset of products to capture increasing returns, each country is limited in the types of products available. There is likely to be a large market for additional product variety, as well as intermediate good inputs. Consider an example from a classic IRS industry, motor vehicles. When trade in automobiles was liberalized between Canada and the US through the 1965 US-Canada Auto Pact, one of the first moves by Canadian producers was to rationalize plants and cut the number of automobile models they produced in half. By specializing in fewer automobile models, but maintaining output, Canadian manufacturers were able to capture increasing returns to scale and better compete with larger, more efficient US manufacturers. Another example is Boeing, which increasingly outsources the manufacture of aircraft parts to China, even though final assembly and additional part manufacture remains in the US. By specializing in the production of fewer intermediate parts and trading for the rest, Boeing captures increasing returns to scale.

Intra-industry trade between the US and Canada in the first example, and the US and China in the second example, is a result of firm-driven moves to specialize and enhance productivity. In this way, scale economies are a source of specialization, independent of factor endowments or comparative advantage, which induces countries to

trade (Krugman 1990, Helpman 2011). Firms seek trade liberalization in order to capture increasing returns through the expansion of the market (Dixit and Norman 1980). This model contrasts with classic trade theory, which assumes constant returns to scale when trading homogenous goods. With identical goods and constant returns, identical countries (in terms of factors or technologies) have no incentive to trade with each other. With increasing returns and differentiated products, producers have an incentive to specialize and expand production in order to export overseas. [3]

Table 2.5: Scale economies in manufacturing industries

Large economies of scale	Petroleum
	Coal products
	Pharmaceuticals
	Motor vehicles and machinery
	Electronic components
	Computer and office equipment
Medium economies of scale	Electric machinery
	Engines and turbines
	Tires and inner tubes
	Household appliances
	Petroleum refineries
Small economies of scale or constant returns to scale	Instruments
	Nonelectric machinery
	Apparel
	Footwear
	Textiles

Sources: Chase 2009; Antweiler and Trefler 2002.

[3] The only incentive to trade, under the classic trade theories, is to capture gains due to relative factor price differences in countries with different factor endowments. Firms reap productivity gains from specializing according to comparative advantage; specializing in production of goods that use abundant factors intensively produces enough cost-saving gains for firms to induce them to specialize and export surplus production.

A second, though related, source of intra-industry trade is product differentiation. As discussed above, the variety of products available in one industry in a country will be limited by the gains firms can achieve by creating economies of scale in a smaller set of products. This country then has a consumer-driven incentive to trade for different goods in the same industry. For example, pharmaceutical companies invest heavily in the production of certain drugs and cannot produce a full range of drugs. Heavy investment in a subset of drugs leads to intra-industry trade with other countries whose pharmaceutical firms produce another subset of drugs. In order for consumers in one country to have access to a full range of pharmaceuticals, countries must engage in intra-industry trade with other pharmaceutical-producing countries. Thus, IIT is also driven by consumer preferences for a variety of products within the same industry (Helpman 2011). In a globalized economy, manufacturers seek to differentiate their products not only from those produced by other domestic manufacturers, but from goods produced by manufacturers around the world. As a result, in each country there is a limited product variety but there is demand for all the different brands produced in the world economy. With greater product variety, prices fall as well, an added consumer benefit of trade in similar goods.

As Helpman and Krugman (1985) argue, if all countries produced homogenous products, then intra-industry trade would be zero and trade volumes would be better explained by differences in factor endowments. When there are differentiated products,

however, intra-industry trade increases. As factor similarity across countries increases, intra-industry trade will increase at the expense of trade in homogenous products. In the OECD countries, where the capital-labor ratio is similar relative to other countries, intra-industry trade of differentiated products should be higher, and the data confirm this. Helpman (1987) sampled 14 OECD countries and found that the share of intra-industry trade was larger in time periods when factor endowments were more similar. He argues, "differences in factor proportions are less important and intra-industry specialization is more important for trade between rich countries" (2011: 87).

Another feature of intra-industry trade is that, as Krugman noted, the direction of trade is arbitrary when economies of scale is the source of trade. However, an effect of increasing returns to scale is that the country that happens to produce the larger volume of a good becomes an exporter. No country needs special characteristics to gain a comparative advantage in an increasing returns sector (Helpman 2011), yet Krugman argues that there may be such thing as a "home-market effect" that affects the direction of trade. The "home-market effect" means that countries will export goods for which they have a large domestic market (Krugman 2008). Firms will disproportionately locate production for export in countries with greater volume of demand for those products to minimize trade and transport costs. If there are trade impediments and/or transport costs, it is more cost-effective for firms to locate production in the larger market.

In sum, increasing returns to scale, consumer love of variety, and lower prices under expanded competition are all drivers of intra-industry trade among countries with similar technologies and factor endowments. Economies of scale create barriers to entry, which means a limited array of goods will be produced in each country. Thus, trade will increase variety of differentiated but similar products. These products will come from countries with similar factor proportions. It is important to emphasize that models of intra-industry trade are complementary to classic trade models, rather than competing.[4] Comparative advantage explains inter-industry specialization and inter-industry trade: it explains why Germany specializes in high-tech manufactures while Argentina specializes in beef production, and it explains why these countries trade with each other for these goods. Increasing returns to scale, however, explain intra-industry specialization: it explains why German firms specialize in a subset of manufactures (luxury sedans, for example) and seek to export these products. Consumers in countries whose firms make a similarly limited range of products will demand access to additional foreign varieties. In short, new trade theories explain trade between similar countries, while classic trade theories explain trade between different countries.

[4] This was formally modeled by Helpman and Krugman (1985).

Distributional Effects of Intra-Industry Trade

The formation of new trade models to explain intra-industry trade was a major theoretical development in economics, but why does it matter to the political scientist? Krugman argues that theorizing about intra-industry trade is interesting to political economists because it is, in his words, "surprisingly non-disruptive" relative to endowments-based trade (2008: 339). As I will discuss in this section, the world of intra-industry trade matters to the political economist because high levels of intra-industry trade give rise to different distributional--and hence, political-- implications than do the standard trade models.

A primary argument from early contributions to new trade theory is that the economic adjustment costs of intra-industry trade are lower than inter-industry, endowments-based trade. The argument is that IIT is generally welfare enhancing and less redistributive within the economy, as it provides greater product variety and lower prices to consumers and allows firms market access both at home and abroad. The benefits to consumers are clear, but workers and industry face lower adjustment costs with intra-industry trade for one key reason: this trade most often takes place between countries with similar factor endowments and similar skills and technology profiles. Similarity between trading countries is key. If trade is not based on factor scarcity and abundance, it does not result in decreasing demand for scarce factors and heightened demand for

abundant factors. When two trading countries are similar, scarce factors are scarce in both countries, and trade liberalization won't cause declining demand for this factor and demise of industries that use scarce factors intensively.[5] Even if the scarce factor does incur losses via trade liberalization, Bernard, Redding and Schott (2007) show that this decline will be less than in a Stolper-Samuelson setting. Part of the reason for this is that both scarce and abundant factors will be better off due to the gains from a wider variety of goods (Krugman 1981).

As countries become less similar in terms of factor endowments, product differentiation must increase if intra-industry trade is to have minimal adjustment costs: if products are identical (or close to identical), then consumers will prefer goods from the country where production is relatively cheaper. But when goods are sufficiently differentiated, even less efficient firms can survive because consumers love variety, and some consumers will be willing to pay slightly more for their favorite variety of a product. In short, the crucial difference between intra-industry and inter-industry trade is that because intra-industry trade typically occurs between countries with similar endowments, it does not redistribute wealth or resources away from entire sectors. Thus, its adjustment effects, at least at the industry level, are less than those of inter-industry trade.

[5] Under inter-industry trade, resources are redistributed from scarce factors to abundant factors (or from industries using scarce factors to industries using abundant factors) as trade liberalization makes scarce factors less competitive.

The rise in IIT among OECD countries in recent decades has often been cited as a major factor in the smoothness of market liberalization among these countries in the postwar period (notably, in Krugman 1981; Lipson 1982). It has also been cited as an explanation for why trade liberalization with Japan has been so much more controversial in the US than trade liberalization with other OECD states (Gawande and Hansen 1999). US trade with Japan is primarily inter-industry, while US trade with other wealthy countries, such as Canada, is much more intra-industry. For example, the US receives more automobile imports from Canada ($32 billion) than from Japan ($27 billion), but the US exports many more cars to Canada ($22 billion) than it does to Japan ($380 million).[6]

Greater similarity between the US and Canada might also explain the ease of negotiating the US-Canada Free Trade Agreement, while the significant factor differences between the US and Mexico contributed to the highly contentious nature of the North American Free Trade Agreement. The political difficulties liberalizing North-South trade, as evidenced not only by conflicts over NAFTA but also in WTO negotiations such as the ongoing Doha Round, is a key corollary to claims about IIT. Because North-South trade is predominately inter-industry and endowments-based, this trade should be more politically difficult to liberalize, and this appears to have been largely the case in the postwar era.

[6] 2010 trade data from US Commerce Department.

While the earlier wave of new trade theory emphasized the harmonious effects of intra-industry trade, the newest research on intra-industry trade finds that it actually has significant distributional effects, and these effects are within industries, rather than across industries. In a significant departure from older "new trade" models, the newest trade models (sometimes referred to as the "new new trade theory") account for firm heterogeneity, rather than assuming that all firms within an industry have monolithic preferences and export behaviors. Melitz (2003) introduces firm level productivity differences into trade models based on monopolistic competition and increasing returns. He argues that firms within in an industry vary in terms of their productivity levels, and exposure to trade causes only the most productive firms to self-select into export markets. At the same time, the least productive firms within the industry are forced to exit. Intra-industry trade, then, is a process that reallocates resources (and profits) away from less productive firms and to the most productive firms in an industry, the firms that are willing to undertake the significant entry costs into export markets. Melitz's model provides a theoretical basis for longstanding empirical observations about the gains that large firms reap from trade, while many other firms within the same industry (the "mom-and-pop stores") are forced to downsize or shut their doors entirely. Despite the significant losses incurred by less productive firms, the industry as a whole gains from

trade due to the reallocation of resources to the most productive firms. The economy as a whole receives net gains as well (Bernard, Redding and Schott 2007; Trefler 2004).

Later researchers have extended the Melitz model to incorporate trade in intermediate goods, which is a significant portion of intra-industry trade. Kasahara and Lapham (2013) demonstrate that firms face significant entry costs to importing as well as exporting. As a result, only the most productive firms will self-select into importing intermediate goods, and they reap productivity gains as a result. Thus, importing intermediate goods has similar intra-industry effects as exporting: it reallocates resources, profits, and market share away from less productive firms and toward the most productive firms.

Far from being harmonious, then, intra-industry trade has winners and losers. To find these winners and losers, we must look within industries at the individual firm level, something the older trade models did not do (and were unable to do without firm-level data, which has only become available in recent years). There are significant adjustment costs associated with intra-industry trade as less productive firms suffer losses of profit and market share, with important implications for trade politics. First, although exporters are often high-profile firms, the vast majority of firms do not export. Exporting is, in fact, a rare firm behavior even in net exporting industries (Melitz 2003, Kasahara and Lapham 2013). Intra-industry reallocations toward exporters mean significant short-term losses for

the large number of workers in domestically-oriented firms. Second, intra-industry trade contributes to higher overall wages, but also higher wage inequality (Redding 2011). Larger firms tend to pay higher wages, as do exporting firms. Thus, trade-generated reallocation of resources to the most productive firms in an industry raises wages, but only in these leading firms. In the words of Amiti and Davis, "liberalization...raises wages for workers at firms which are most globalized and lowers wages at firms oriented to the domestic economy or which are marginal globalizers" (2011:2). However, others argue that the reduced prices for consumer goods may be enough to raise the real wage of workers in less productive, non-exporting firms as well (Bernard, Redding and Schott 2007).

An Example: Trade Liberalization between Canada, the United States, and Mexico

Trefler's (2004) study of the effects of the Canadian-US Free Trade Agreement (CUSFTA) provides strong empirical evidence in support of theoretical claims about the firm-level effects of intra-industry trade. His findings are even more interesting when considered alongside effects of trade liberalization between the US and Mexico under NAFTA. Canada and the US implemented reciprocal tariff reductions in manufacturing industries in 1989, under CUSFTA. Debate about the FTA was heated, especially in Canada, and the conflict was between domestic-oriented firms and their workers, who

expected short-term losses, and export-oriented firms that expected to reap short- and long-term gains. These expectations were borne out in reality. Trefler finds that Canadian manufacturing industries that lowered tariffs under the FTA suffered 100,000 short-term job losses. This represented 5% of manufacturing employment. In the most impacted, import-competing sectors, up to 12% of jobs were lost. However, the FTA led to major productivity gains for Canadian manufacturing. In the most export-oriented sectors, labor productivity rose by 14% at the plant level in the seven years following the implementation of the FTA. In the most import-competing sectors (many of which are also export-oriented), labor productivity at the plant level rose by 15%. At least half of these productivity gains, Trefler argues, were due to intra-industry resource reallocation as low-productivity firms exited or contracted their employment. Over time, there have no been no long-run job losses in Canadian manufacturing resulting from CUSFTA. Canadian manufacturing has expanded by 6% as a whole and real wages rose 3% in the next seven years, both at the industry and plant level. Trefler's results, demonstrating the way that trade liberalization between two countries with high-levels of intra-industry trade results in both overall welfare gains combined with short-term losses for less productive firms and workers, is consistent with the expectations of the new trade models based on monopolistic competition and heterogeneous firms.

US manufacturing industries, which generally enjoyed higher productivity than their Canadian counterparts pre-CUSFTA, due to the fact that they produced for a much larger domestic market, were across the board supportive of trade liberalization with Canada. However, in less differentiated products that use natural-resources intensively, US industries were more opposed to liberalization. US timber and lumber producers were the most active lobbyists against CUSFTA (Chase 2009).

Comparing the effects of trade liberalization with Mexico is instructive. As Chase (2009) argues, although intra-firm trade between US firms and their affiliates in both Canada and Mexico was significant, the firm restructuring induced by NAFTA was different in Canada than in Mexico. In Canada, US affiliate firms rationalized production and specialized in a narrower range of export-oriented products in order to capture economies of scale. In Mexico, firms also specialized, not to capture economies of scale, but to take advantage of the labor cost differences between the US and Mexico. Mexican maquiladoras specialized in labor-intensive manufacturing processes with few economies of scale, in order to exploit the much lower Mexican wages. Trade between the US and Mexico was primarily endowments-based while between Canada and the US, trade occurred to take advantage of scale economies. These patterns of specialization had different effects on workers. The restructuring of Canadian firms to produce higher volumes of fewer product lines had short-term plant-level effects on workers, but no long-

term job losses, but Mexican specialization in low-wage, labor-intensive processes has had significant negative effects on low-skilled US workers in labor-intensive industries, such as apparel and leather goods. The US has lost over $5.1 million manufacturing jobs since 1994, and while it is very difficult to estimate the proportion of those jobs that were lost due to trade with Canada or Mexico, some economists estimate that by 2006, approximately 389,000 net jobs had been lost to trade with Mexico (Scott et al. 2006).[7]

As might be expected, most of the US lobbying against NAFTA came from labor-intensive employers and unions representing their workers, as well as agriculture (Chase 2009:212). They feared losses in profits and market share to Mexican firms with much lower labor costs, and their fears seem to have been realized. For example, US apparel industry exports to Mexico were almost $1.18 billion dollars in 1994; in 2012 US apparel exports to Mexico were valued at $908 million dollars. During this time, Mexican apparel exports to the US more than tripled from $934 million dollars in 1994 to $3.37 billion dollars in 2012.[8] Thus, trade that was fairly balanced on the eve of NAFTA, when US apparel industries enjoyed trade protection, has now become much more inter-industry, in line with Stolper-Samuelson predictions about the effects of trade on scarce factors. Though the industry had been in decline prior to NAFTA, employment has dropped

[7] It is highly debated among economists (as well as politicians) how much of the decline of US manufacturing is directly attributable to NAFTA and trade with Mexico, as it is extremely difficult to isolate the effects of this trade from the other domestic and international variables that affect employment.

[8] Data from United States International Trade Commission.

precipitously every year since 1994. Employment in the US apparel sector plummeted from approximately 832,000 jobs in 1994 to 148,000 in 2012.[9]

In short, the effects of intra-industry trade between countries with similar endowments are significantly different from trade between countries with different endowment profiles. In terms of trade with the US, specialization in Canada to capture increasing returns to scale had a net positive effect on Canadian manufacturing industries, despite trade's short-term costs for less productive firms and their workers. US manufacturing industries were largely supportive or "indifferent" about the passage of CUSFTA, while they were deeply divided over the extension of the FTA to Mexico through NAFTA (Chase 2009), concerned about the industry-level effects of large differences in labor costs across the two countries.

Conclusion

To conclude, this chapter has provided an overview of intra-industry trade in the postwar trade regime. Economists have developed increasingly sophisticated theoretical models to explain this “new” trade that has grown in importance in the postwar period, not only among high-income economies, but increasingly among countries at other levels of development as well. Though it is outside the scope of this study, the rise of intra-

[9] Data from US Bureau of Labor Statistics.

Table 2.6: Summary comparison of classic vs. new trade theories

	Endowments-based trade/old trade theory	Intra-industry trade/new trade theory
Economic basis for trade	Comparative advantage Differences in factor endowments	Increasing returns Economies of scale Product differentiation
Explanation for specialization	To take advantage of differences in relative factor endowments	To take advantage of economies of scale
Direction of trade	Determined by endowments	Indeterminate or based on size of home market
Production for export	Determined by endowments	Goods for which countries have large domestic markets IRS industries
Effects of trade on income	Scarce factors lose Industries using scarce factor intensively lose	Income-distribution effects outweighed by gains from the larger market Less productive firms lose
Effects of trade on scarce factors	Relatively worse off	Gains from trade
Market Structure	Competitive	Imperfect competition

industry trade in differentiated products has important implications for the future of developing countries and their involvement in international trade. The World Bank contends that "scale economies in production and transport will make it more difficult, not easier, for developing countries to enter these highly competitive markets" (2009:172). In this dissertation, however, I am interested in the domestic political effects of intra-industry trade in the countries most subject to it, the advanced industrialized

democracies. Having established intra-industry trade's theoretical basis and its expected distributional effects, by reference to the economics literature on the subject, I now turn to the task of developing a model of the political effects of intra-industry trade.

CHAPTER 3

A THEORY OF INTRA-INDUSTRY TRADE AND POLITICAL COALITIONS

Introduction

In this chapter, I present a model of the political economy of intra-industry trade. I argue that changes in the nature of trade away from endowments-based trade to two-way trade within industries changes the structure of preferences over trade policy and the way that actors mobilize politically in order to influence trade policy. First, I argue that intra-industry trade drives a wedge through industry preferences over trade policy. As intra-industry trade increases, exporting firms support openness and less productive, domestic-oriented firms within the same industry support protection. Second, I argue that these heterogeneous firm preferences will undermine industry-based lobbying coalitions and incentivize individual firm lobbying. This chapter proceeds as follows. First, I discuss the effects of intra-industry trade on trade preferences. Second, I present a simple model of trade politics. Third, I develop my argument about the effects of intra-industry trade on coalitions and political activity.

Intra-industry trade and trade preferences

Based on what we know about the economic basis of intra-industry trade, as well as its economic effects, we can deduce some expectations about preferences over trade openness in industries subject to intra-industry trade.

Consumers and Classes

First, we expect consumers to prefer open trade because of the gains they reap from enlarged markets, increased product varieties, and lower prices for consumer goods. Additionally, Krugman (1981) argues that at least in the long-term, any negative wage effects of trade (such as downward wage pressure due to foreign competition) will be offset by the gains from the larger market, and as the market size grows and two-way trade grows, negative wage effects will decline.

In terms of broad factor-owning classes, they are unlikely to form coherent preferences in countries with high levels of intra-industry trade. This is true for a few reasons. First, in the economy as a whole, Ricardo-Viner effects are already more likely to hold than Stolper-Samuelson effects. As was theorized in the trade literature and demonstrated empirically by Hiscox (2002), when factor mobility is low, workers' fortunes are closely tied to the fortunes of the particular industries in which they work, and their preferences will align with those of their employers. With low factor mobility it is costly

for workers to find employment in a different industry if their industry experiences trade losses and layoffs. Workers may have industry-specific skills and require retraining before they can be hired in another industry, or there may be significant geographic barriers to redeployment. In the developed economies, factor specificity and capital-intensive production has already made it unlikely that entire classes will hold unified trade preferences. High levels of economic development and highly specific capital investments, as well as skill investments, are the key factors undermining unified class-based preferences in developed economies. This is true whether or not there are high levels of intra-industry trade, either at the country level or in particular sectors. Intra-industry trade does not make the formation of class-based preferences more likely. It does not generate unified preferences among broad factor-owning classes.

Industries

Industries will not hold unified preferences either, and this is where my expectations depart from those of both the Ricardo-Viner and Stolper-Samuelson models. Trade liberalization in IIT industries may benefit industries as a whole, but adjustment costs fall on individual firms. Depending on each firm's anticipated profits or losses from trade liberalization, firms within the same industry have different preferences over trade. Most generally, firms will support trade liberalization when they anticipate that their

profits will be greater after liberalization than before. I expect firms to oppose liberalization when they anticipate a loss of profits after liberalization. In this model I assume that liberalization is reciprocal. I assume that tariff rates are negotiated in the context of bilateral or multilateral trade agreements, in which a reduction of tariffs in country a is contingent upon a reduction of tariffs in country b. Thus, in forming their preferences over trade, firms must weigh their expected gains from sales in foreign markets to the losses they will incur from increased import competition at home.

Because IIT is highest industries in which factor specificity is high, as discussed above, workers are likely to have industry-specific skills that tie their preferences to those of their employers. Workers and firm owners will either jointly benefit from trade or suffer short-term and possibly significant losses. Because IIT leads to an intra-industry reallocation of resources away from small firms and toward the large exporting firms, trade liberalization creates winners and losers within industries. This means that trade preferences are formed at the firm level, not the industry level.

Exporting Firms

We can make claims about intra-industry trade's effects on preferences when we look within industries at the heterogeneous nature of firms. As discussed in the previous chapter, economists show that the distributional effects of intra-industry trade are located

not at the class or industry level, but at the firm level. Specifically, exporting firms in IIT industries are likely to be winners from trade liberalization, while domestic-oriented firms are likely to be trade losers. Within manufacturing industries in developed countries, only a minority of firms are exporters or expect to be exporters after securing less costly foreign market access through a trade agreement. These firms will support liberalization when they expect the gains from expanding foreign market access will outweigh the increased import competition they will face in the domestic market.

This argument, that exporters are likely to prefer trade liberalization, holds whether an industry faces high or low levels of intra-industry trade. Certainly exporting firms in comparative advantage industries with less differentiated products, who do not suffer significant competition from imports, should prefer liberalization as well. A country often reduces its tariffs in exchange for reciprocal tariff cuts by its trading partners. In export-oriented, comparative advantage industries, the gains from securing lower tariffs abroad should far outweigh the losses associated with domestic tariff cuts. Comparative advantage ensures that firms in these industries will be competitive both at home and abroad. Exporters in IIT industries have an additional rationale for supporting domestic

tariff cuts, and that is that these firms are likely be importers as well. Domestic tariff cuts may help them reduce input costs.[1]

When might exporters oppose liberalization? Simply, they will oppose liberalization when their gains from increased export opportunities are outweighed by the greater import competition in the domestic market. This might be the case in a few instances. First, exporters might oppose liberalization in industries where products are not sufficiently differentiated. In these industries, even small differences in factor prices across countries can lead to significant industry losses in the country in which factor prices are higher, even slightly so. For example, US and Canadian softwood lumber is not very differentiable. Trade liberalization in this industry, between these two countries, could lead to substantial losses in the country with relatively higher production costs, even when this difference is very small. (This is supported empirically by the fact that US logging companies were one of the very few industries that opposed tariff cuts under the Canada-US Free Trade Agreement.) Contrast this with trade in differentiated products. When products are sufficiently differentiated, some consumers will be willing to pay slightly higher prices for their preferred product variety, so firms with higher production

[1] Firms in IIT industries are more likely to import intermediate goods than firms in low-IIT industries. This is because the industries most subject to IIT are industries with highly differentiated products and increasing returns to scale. As products become less capital-intensive, firms tend to import fewer intermediate goods (Bernard et al 2007).

costs can remain competitive both in export markets and domestically (this is the case for luxury goods, such as watches or luxury sedans).

Relatedly, firms in industry *i* will oppose liberalization when trading partners have different factor endowments and enjoy a comparative advantage in the production of goods in industry *i*. When factor prices differ substantially across countries (as in the case of wages in Mexico and the United States) exporting firms in the country with the comparative disadvantage expect net profit losses. In industries in which exporters oppose liberalization, industry preferences will be unified, as in a Ricardo-Viner framework. However, in intra-industry trade industries, which tend to be those producing sophisticated manufactures, exporters also tend to be importers. Even if an exporter does not expect that export gains will outweigh the costs of import competition, this exporter may still enjoy net profit gains after liberalization due to cheaper imported inputs. In sum, though exporters may not always support trade liberalization, the economics of intra-industry trade, as discussed in Chapter 2, suggests that exporters in IIT industries are likely to support liberalization, as these industries tend to enjoy increasing returns to scale, products are differentiated, and trading partners often have similar endowments and/or levels of development.

Domestic-Oriented Firms

While exporters generally stand to gain from trade liberalization in IIT industries, non-exporters expect trade losses. Even though in the long-term, the industry as a whole will gain from trade (as established by Melitz (2003) and discussed in the last chapter), reduced protection will cause non-exporting firms to lose market share, or they may be forced to make costly adjustments to their product offerings, or even go out of business. I expect these domestically-oriented firms--and their workers--will have protectionist preferences. Since they do not export, they do not gain from reciprocal tariff cuts in foreign markets, so the increased import competition they face post-liberalization is not offset by higher export sales. In the short-term, import competition will exert pressure on non-exporters to contract wages and/or employment, it will reduce their market share and it will put downward pressure on prices. Many firms will exit the industry entirely. These short-term costs mean that both workers and owners in domestic-oriented firms will have a strong preference for trade protection.[2]

In general, the more similar the trading countries are and the more products are differentiated, the more intra-industry division there will be among firms concerning their

[2] While it would initially seem that exporters and non-exporters would hold competing preferences when trade is more endowments-based as well, this isn't the case. Though the Stolper-Samuelson and Ricardo-Viner models don't address firm heterogeneity, we would expect that in comparative advantage industries with homogenous goods (such as agriculture, in land-abundant countries) exporters will strongly prefer liberalization and non-exporters will be indifferent. Because of comparative advantage, no firm within the industry will be significantly threatened by foreign imports, which would be higher priced. Without product differentiation, consumers will have no reason to prefer high priced foreign imports.

trade preferences. When trading countries are quite different in factor endowments, we can expect greater industry-level consensus. Industries utilizing scarce factors will be unified in their objections to trade with countries abundantly endowed with those same factors. Similarly, we expect industry consensus along scarce/abundant factor lines when products are not highly differentiable, as with agricultural goods, raw materials or other natural resource-intensive goods. In these cases, consumers will prefer the lower-priced product, and differences in comparative advantage across countries will matter more than they do when countries are trading a variety of similar products. Consumers love variety and many are willing to pay slightly more for their preferred products.

Table 3.1: Trade Preferences under Endowments-based vs. IIT Trade

	Protectionist preferences	Free trade preferences
Endowments-based trade	Scarce factors Import-competing industries	Abundant factors Exporting industries Consumers
Intra-Industry trade	Domestic-oriented firms (management + workers)	Exporting firms (management + workers) Consumers

A Model of Trade Politics

Given these preferences about intra-industry trade, when will societal actors mobilize to influence trade policy? Although preferences over trade depend on a cost-benefit analysis of trade-related gains and losses, not all losing individuals or groups will undertake costly political action to demand protection. In this section I present a model of

the ways in which intra-industry trade influences the politics of trade. In industries where trade is primarily inter-industry, we can expect the classic industry or class-based coalitions to form as predicted by Stolper-Samuelson or Ricardo-Viner models. However, because intra-industry trade has different distributional effects upon firms and industries, I argue that it changes the ability of groups to overcome collective action problems and organize politically to influence trade policy. I develop this argument below.

Political Coalitions

In this analysis I assume that actors seek to maximize their incomes. To this end, they prefer trade policies that they expect will help them achieve this goal. Industry associations prefer trade policies that maximize the profits of their member firms, individual firms prefer policies that maximize their own profits, workers prefer policies that maximize wages, and consumers prefer policies that provide them with variety and low prices. Each actor must decide whether to undertake costly political action aimed at influencing trade policy to her advantage.

In democracies, societal actors typically seek to influence policy through one of two channels: voting and lobbying. In this analysis, I focus on lobbying for two reasons. First, the actors in my analysis have already organized themselves into industry associations, labor unions, and consumer advocacy organizations for the purpose of lobbying. They still

face a choice about whether to mobilize politically as each new piece of trade legislation is debated, but the decision on whether to organize into a special interest group has already been made. I assume here that these organizations exist, and I focus on the decisions their members make about whether to undertake political action to influence trade policy. Another reason I focus on special interest lobbying organizations, rather than voting and political parties, is because political parties have traditionally been the representatives for broad, class interests, while special interest lobbying is the political organization of choice for concentrated groups such as industries. In the last section I argued that in advanced economies, factor specificity is high and societal actors are more likely to organize via industry associations rather than broad, class coalitions.

Coalitions in politics are more than just actors with shared interests and preferences. A coalition is a group of actors that is organized politically with the intent to influence policy. Industry coalitions typically take the form of a membership-based organization or association, such as the American Furniture Manufacturer's Association or the (US) National Tooling and Machining Association. Within each association, firms cooperate with each other to contribute membership dues and financially support association activities and capacity, which may include the maintenance of a physical presence and a permanent staff. These organizations advocate for their members' interests

on many issues, including but not limited to trade policy. The goal of political activity is to convince policymakers to adopt their preferred policies in exchange for contributions.

Like most rational choice political models, I assume elected officials are primarily interested in securing reelection and that they compete to attract campaign contributions and provide societal groups with the policies they demand in exchange for financial and electoral support. I do not assume that parties are unitary actors; in line with many trade policy analysts I assume that individual legislators cater to constituency interests and to the demands of narrow special-interest groups, departing from party lines when they believe this best serves their electoral prospects (Hankla 2006, McGillivray 2004). I assume that bureaucratic agents as well as elected legislators can be influenced by special interest lobbying. Though bureaucrats are not constrained by the need to secure reelection, they need information, and they depend on private special interest groups to provide them with this information.[3]

The Costs of Political Activity

Once organized, coalitions must repeatedly decide when to mobilize to influence policy. Though the considerable collective action costs associated with organizing into a

[3] There is plenty of evidence from the American context that bureaucrats are susceptible to special interest lobbying. Firm, industry, and labor representatives attend bureaucratic hearings, as do legislators, who argue for protection for specific industries (Drope and Hansen 2004, Hansen and Prussa 1996, Shepsle and Weingast 1984).

coalition have already been overcome, undertaking political action on pieces of trade legislation is still a very costly endeavor. Industry associations must finance and carry out research on the impact of proposed legislation on their industry, use this research to file reports with government agencies involved in the policy process, appear in policy hearings as well as seek to meet individually with policymakers at every stage of the policy process. Much of this activity is often contracted to private lobbying firms.

Lobbying costs vary depending on the structure of the policy process and the costs of collective action. Political science research shows that as the number of veto-wielding policymakers increases, lobbying becomes more costly (O'Reilly 2005, Henisz and Mansfield 2006). In the US, there are three main stages of trade policymaking and lobbying occurs at each stage of the process. First, Congress must decide whether to delegate trade negotiation authority to the president. Interest groups lobby Congress heavily over this decision, based on whether they believe they will achieve a more favorable policy outcome if Congress or the executive retains authority over negotiations. Next, interest groups lobby the agencies involved in negotiating the specific terms of each trade agreement, such as the US Trade Representative and the International Trade Commission. At this stage, interest groups lobby for specific tariff rates and other specific terms to be included in the trade agreement. Finally, Congress must approve or reject negotiated trade treaties, and this provides an additional opportunity for special interest

groups to influence the final outcome. In the EU, the lobbying situation is complicated by the fact that both national and EU-level representatives are involved in trade policymaking, and lobbying must be targeted at both levels of governance.[4] The institutional costs of lobbying vary across national contexts, and I do not build an institutional theory here. My approach is to make the simplifying assumption that these costs exist. In deciding whether or not to lobby, groups must consider the likelihood that their action or contribution will affect policymaker decisions on adopting the policy.

I build another type of cost into my model: the collective action costs of political activity. There are costs associated with organizing and subsequent costs associated with mobilizing to influence proposed legislation. Collective action is possible when members of a group share interests and preferences. The ease with which groups are able to act collectively, however, varies according to a host of factors. One factor is the size of the group: the costs or benefits of a policy are diffused when they fall on large groups, but as the size of the group affected by the policy shrinks, the costs or benefits are more concentrated on the members of that small group. The argument here, elaborated by Pareto (1927), Schattschneider (1935) and Olson (1965), is that members of smaller groups are better able to overcome collective action problems to lobby for their preferred

[4] Although trade policy is made at the European level, national delegations seeking to protect their own industries and workers wield considerable influence in Brussels over the terms of trade agreements and levels of protection.

outcome because the stakes are higher for the members of smaller groups. By stakes, I mean the utility of the outcome as well as the probability that a contribution by a group member will be pivotal to the policy outcome. A second factor in the ease with which groups can act collectively is free-riding. Free-riding introduces a strategic element into an actor's decision to undertake political action: the decision to lobby depends on the probability that other actors with shared preferences will lobby as well (or instead). Actors will free-ride on the political contributions of other actors if they believe that they will benefit from the efforts of others. In other words, if the benefits of a policy are non-excludable and take on the qualities of a public good, actors are more likely to free-ride.

Trade policy has for the most part been treated as a public good in the trade policy literature: protection against goods from sector i will benefit all firms producing goods in sector i, not only the individual firm in sector i that decides to take political action. Gilligan (1997) advances a different argument. He argues that with intra-industry trade, lobbying becomes, in effect, a private good with excludable benefits. Individual firms are monopolists over their particular product variety, so they have greater incentive to lobby for protection of their particular product. No other firm will benefit from this variety-specific protection. However, if each firm is a monopolist over their own product, this logic should extend to foreign producers as well. There will be no foreign producer producing exactly the same product as any domestic producer, so protection against that

foreign producer's variety will indeed benefit all domestic producers producing similar varieties. In this analysis I adopt the view that trade policy is a public good, since no foreign producer produces exactly the same variety of differentiable product as a single domestic producer.

In short, in my model actors decide to undertake political action when they believe that the benefits they will receive from influencing policy outcomes in their favor will outweigh the costs of political activity. Lobbying costs are not trivial, even when political organization has already been established through the formation of a coalition. When deciding whether to expend resources on political action, actors weigh their stakes in the issue and the likelihood that they will influence policymaker decisions against the costs of collective action. In the context of trade policy, the "stakes" are direct income effects of changes to tariff rates and other forms of protection. The greater the income effects on actor i of a change in protection t, the greater the incentive for i to lobby for or against changes to t.

The Political Economy of Intra-Industry Trade

These assumptions allow us to generate some specific expectations about the way that groups lobby and about the way that intra-industry trade affects this behavior. In this model, actors have to decide 1) whether and how much to lobby, and 2) whether to

lobby through a coalition or alone. My claim here is that intra-industry trade is a factor that affects the structure of coalitions, and as a result, it may affect the structure of protection across industries. Its influence lies in the way it impacts the ability of societal actors to overcome their collective action problems for the purpose of influencing trade policy. Because the distributional effects of intra-industry trade fall at the firm level, rather than the industry level, the rise of intra-industry trade has significant consequences for industry-based consensus and the degree to which industry-based coalitions will act to influence trade policy.

First, as discussed above, intra-industry trade undermines industry consensus over trade and generates competing trade preferences among firms within the same industry. Larger, more productive, exporting firms are likely to prefer trade liberalization even in industries with high IIT, because the increased import competition they face will be outweighed by the benefits they can achieve through exports. These firms are also likely to be importers as well, and they will benefit from lower prices on imports post-liberalization. On the other hand, smaller, less productive firms that do not export (or export very little) will be negatively affected by import competition.[5] This heterogeneity in firm preferences will have the effect of weakening industry consensus over trade and making it more difficult for industry-wide trade associations to secure broad support from

[5] These non-exporting firms are also less likely to import as well, as importing involves considerable entry costs, similar to exporting. Only the biggest, most productive firms are likely to import intermediate goods. See Kasahara and Lapham 2013.

firms. Firms may revoke membership or contributions if trade associations take an active lobbying stance for a trade position that is counter to their interests. The result of this, in terms of trade policy lobbying, is that trade associations may take weaker stances on policy to avoid losing members. They may also stop lobbying for particular trade positions altogether, or they may decrease the amount of resources they spend on lobbying over trade legislation. To take an empirical example, this has been the response of the European Roundtable of Industrialists (ERT), a leading advocacy organization for EU manufacturing firms, to heterogeneous trade policy preferences among its members. While maintaining a general free trade policy stance, ERT does not lobby the EU over specific trade policy legislation. Similarly, lobbying over trade by EURATEX, the leading trade association for European textile and apparel manufacturers, has been limited because of heterogeneous demands from its members (Woll 2009).[6]

As trade coalitions become less active in trade policymaking due to competing trade preferences among their members, I argue that individual firms will become increasingly politically active. As discussed above, exporting and non-exporting firms, both of whom must compete with imports, will be split on their trade preferences, making collective action difficult. Exporters are likely to support liberalizing trade agreements in which all parties to the agreement reduce their tariffs, increasing foreign market access.

[6] EU trade policy officials also frequently made this claim about the textile sector during my interviews with them in Brussels, 2012.

Table 3.2: Effect of IIT on the Structure of Trade Coalitions

Level of IIT	Coalition	Position of Class Coalition	Position of Industry Coalition
Low	Class-based, or sector-based, depending on factor mobility.	High factor mobility: unified around class-based position. Low factor mobility: internally divided.	High factor mobility: no industry consensus. Low factor mobility: Industry consensus (workers + employers).
High	Both class- and industry-based coalitions are undermined.	No class consensus as factor mobility is typically low in high-IIT industries.	No industry consensus. Firm-level consensus (workers + employers).

Firms that do not export prefer to remain protected from foreign competition. Thus, existing industry associations are hamstrung in their political efforts by members with competing preferences and interests. The reduced likelihood of coalitional political activity presents an opportunity for individual firms to become more active in lobbying over trade policy. What is the likelihood they will in fact engage politically? What are the incentives for action and the costs of action?

Consider the rational behavior of exporting firms under classic, endowments-based trade. In comparative advantage industries, according to the classic trade theories, all firms within the industry would benefit from liberal trade rules and access to foreign markets. Given that open markets also benefit consumers, as well as workers in competitive industries, societal consensus should coalesce around trade openness. In the

absence of strong protectionist lobbying, there will be little need for free-trading firms to engage in costly political activity as policymakers are likely to provide liberal trade rules. In comparative disadvantage industries, on the other hand, firms will be united in efforts to seek protection. The costs of openness are concentrated on these industries, making it easier for them to overcome collective action problems. Additionally, firms within these industries have shared preferences and interests, making them the best equipped to form coalitions to share the costs of political action, delegating political activity to industry-wide associations and achieving their desired level of protection. When firms fail to overcome collective action problems and form organized coalitions, they are more likely to achieve only a sub-optimal level of protection.

The incentive to lobby for liberalization is low in both comparative advantage and comparative disadvantage industries. This partially explains the long-standing assumption in much of the trade politics and American politics literatures that free trade interests are underrepresented politically, while protectionist interests are overrepresented. The assumption has been that because the benefits of openness are diffuse and in the broader public interest, actors that stand to gain from openness face a significant free rider problem (Olson 1965). On the other hand, the benefits of protection are concentrated on

smaller producer groups, making it easier for interest groups who would reap these benefits to undertake political action.[7]

I argue that the calculus determining whether to engage in costly political action is different for firms in industries with high levels of two-way trade. Because import-competing firms have an incentive to lobby for protection, as in endowments-based trade, exporting firms within the industry now also have an interest in lobbying for openness to counteract the protectionist pressures coming from within their very industry. When rival groups are actively lobbying for opposing policies, it can raise the probability that an actor's lobbying efforts will be pivotal to achieving her desired outcome (Gilligan 1997). Imagine that the probability of actor i's preferred policy being adopted is 70% when no rival groups lobby, but this probability decreases to 50% when rival firms actively lobby for an opposing policy. Actor *i*'s political efforts are more likely to be pivotal to a winning outcome when the chance of winning is 50% rather than 70%. Thus, the presence of rival, import-competing firms who lobby for protection induces exporters to lobby for

[7] There have been a few notable studies of exporter lobbying. Destler et al. (1987) document the growth of a free-trade lobby during the 1980s, concerned with security market access abroad. Milner (1988) argues that multinational corporations lobby for liberalization because of their high levels of intra-firm trade. Gilligan (1997a) argues that the institution of trade policy reciprocity (enacted in 1934) gave exporters an incentive to lobby for liberalization, as this was linked to reduced tariffs in export markets. However, most other scholars implicitly or explicitly assume that pro-liberalization lobbying is not a key factor in trade liberalization. They explain liberalization as a result of other factors, such as Congressional delegation of trade policymaking to the president, who is more insulated from protectionist lobbying (Bailey et al. 1997).

liberalization and raises the probability that their political efforts will achieve their preferred outcome.[8]

Thus far I have assumed that import-competing firms will lobby for protection in high IIT industries. Why are these firms likely to undertake costly political action? This is because the costs of trade liberalization are even more concentrated when trade is intra-industry than when trade is endowments-based. As elaborated in the previous chapter, the costs of liberalization in IIT industries fall on individual firms rather than being spread across entire industries. Therefore, the stakes are higher for import-competing firms in IIT industries. Exporters enjoy increased foreign market access and cheaper imported inputs. Any loss in domestic market share for leading exporters is likely to be outweighed by these gains, but domestically-oriented firms suffer net losses. We know that import-competing firms actively lobby for protection when trade is endowments-based; because the costs of trade are even more concentrated for them in IIT industries, I expect they will lobby for protection in these industries as well. This logic also holds for exporting firms: the benefits of liberalization are concentrated on them rather than shared with the entire industry, and exporters typically represent just a fraction of all the firms in an industry. When firms enjoy concentrated costs or suffer concentrated losses, their

[8] Marvel and Ray (1987) argue the opposite. They contend that the presence of competing lobbies will discourage lobbying from both sides, resulting in a lobbying equilibrium in IIT industries that is lower than in industries with low IIT. i directly test my argument against theirs in Chapter 4.

policy stakes are higher and they are less likely to free ride off other firms' contributions. They have a greater incentive to lobby to ensure an optimal level of protection for themselves, be it high or low.

Why don't free-trading firms form new, smaller liberal coalitions, while import-competing firms form new, smaller protectionist coalitions? For one, it is costly to form new organizations for collective action, even among small groups. Olson (1982:38) emphasized the "special start-up costs" involved in creating a new organization or "pattern of cooperation." At least in the short term, firms may calculate that the costs of building a new political coalition, even among a smaller group of firms outweigh the costs of lobbying alone for protection of their particular product variety.

This leads us to a second reason why it may be more costly for firms in IIT industries to establish new coalitions than to lobby alone. As has been discussed earlier, intra-industry trade occurs most frequently between capital-intensive, differentiated products. A domestic producer may have an incentive to lobby for protection for its own particular product variety, increasing tariffs upon the foreign varieties that are most similar to its products. But other imports within the same industry may be different enough that a producer has little incentive to lobby to increase tariffs on the industry as a whole. For example, an American-made luxury goods manufacturer such as Brooks Brothers may have an incentive to lobby for higher tariffs on apparel made with certain

luxury materials, but Brooks Brothers would have little incentive to contribute to lobbying for industry-wide protections that would raise tariffs on cheap synthetic clothing imports. Thus, in differentiated, manufacturing industries where firms are producing a wide variety of different products, it may be more beneficial for firms to lobby alone for their specific product variety than to lobby together for industry-wide protection, which provides less net benefit for each individual firm.

Still, protection remains a public good and as such is subject to free-riding. Even if a firm lobbies for protection against foreign varieties that are most similar to its own product, it cannot exclude other firms from enjoying at least some benefits of that protection. The benefits may be unevenly distributed--firm i may enjoy more benefits of protection against a certain product variety than other firms within its industry-- but these other firms are likely to enjoy some benefits of protection as well. This creates an incentive to free ride and increases the likelihood that firms will lobby alone for protection from foreign varieties that are close to their specific products. While it may seem this would generate a lobbying free-for-all in which each individual firm lobbies for protection against foreign varieties closest to its own products, it is important to remember that in the context of a free trade agreement with only one or two countries, for example, only certain domestic producers will find themselves significantly threatened by the limited foreign varieties under negotiation. Thus, in a hypothetical free trade agreement between

the US and Japan, Indian Motorcycles may deem it worthwhile to lobby for high tariffs against Japanese motorcycle competitors, while Harley-Davidson may not find Japanese motorcycles to be threatening enough to its brand to undertake lobbying efforts. If Indian is successful in achieving protection against Japanese motorcycle exports, Harley-Davidson is able to free-ride off Indian's lobbying expenditures, even if Harley doesn't capture as many gains from protection as Indian does. Thus, there remains a free-riding incentive when products are highly differentiated. This may hinder the formation of coalitions and incentivize individual lobbying by firms.

Table 3.3: Expectations about lobbying behavior

	Exporting firms	Import-competing firms
Low IIT	No lobbying	Active protectionist lobbying in comparative disadvantage industries; little/no lobbying in comparative advantage industries
High IIT	Active free trade lobbying	Active protectionist lobbying

In sum, I argue here that intra-industry trade changes the costs associated with lobbying and incentivizes firms to lobby alone for their preferred trade policies. In this model, intra-industry trade increases the probability that individual firms will be pivotal to trade policy outcomes by making trade policy more contentious within industries, it reduces the costs of firm-based lobbying relative to coalition-based lobbying and it raises the stakes of trade policy for individual firms in industries characterized by two-way

trade. At least in the short-term, the costs of lobbying alone are likely to be less than the collective action costs associated with forming a new coalition of like-minded firms. For all these reasons, I argue that firms will expect greater utility from lobbying, and total lobbying will increase in intra-industry trade industries.

Conclusion

In conclusion, the economics of intra-industry trade generate a new structure of trade preferences. When trade is endowments-based, classes or sectors are unified in their preferences about trade liberalization. When trade is intra-industry, class and industry consensus is undermined as the costs of trade fall neither on entire class, nor on entire industries, but on individual firms, dependent on whether or not they export. The large firms that benefit from exports will prefer liberalization, while firms concerned with import competition will prefer protection. The question of which political coalitions and alignments will arise in place of traditional class and sector coalitions, what they will lobby for, and how this affects policy are the central questions of this dissertation. Political economists have provided sparse and conflicting theoretical expectations about the political and policy implications of intra-industry trade, and perhaps even sparser empirical evidence. My model suggests that intra-industry trade will increase trade policy

lobbying, but this lobbying will be undertaken largely by individual firms rather than traditional trade policy coalitions.

However, one of the central predictions of my model is that much of this lobbying will be in favor of liberalization, an expectation that departs from what most of the trade literature predicts. It is only as intra-industry trade increases that exporters have an incentive to lobby, but the outcome of political contests among firms within the same industry remains an open question. No study of protection is complete without a consideration of some of the institutional factors involved in the provision of trade policy. It is for this reason that I have focused the present analysis on the structure of political coalitions and trade policy lobbying--the demand side of trade policy-- rather than policy output. One complication in bringing institutions into this analysis--and a fascinating one that is ripe for study--is that the new trade lobbying landscape in countries with high levels of IIT changes the societal "inputs" into the policymaking process. We cannot simply map existing institutional models of trade policy, which are likely to assume that policymakers are interacting with either broad class-based or sector-based coalitions, onto studies of protection in countries with high intra-industry trade. If coalitions are less likely to form and individual firms are to become more powerful lobbying actors, institutional models may need to be reworked to address the greater particularism in societal demands

over trade policy. Chapter 5 of this dissertation presents an initial foray into the question of intra-industry trade's impact on levels of protection.

CHAPTER 4

CLEAVAGE, COALITION AND INTRA-INDUSTRY TRADE IN THE UNITED STATES

Introduction

Although international trade has benefitted liberal societies enormously, trade nevertheless creates domestic "winners" and "losers." These winners and losers are positively or adversely affected by expansions in trade, and depending upon the degree of their gains or losses, they may mobilize politically to influence policymakers to adopt their preferred trade policies. The landscape of trade coalitions has varied significantly across time and place. In many advanced industrial democracies, broad class-based trade coalitions composed of workers or industrialists from a wide range of sectors have given way to narrow industry-based coalitions. Increasingly, even these narrow coalitions have crumbled as firms within the same industry have found themselves at odds over their trade preferences. In these instances, individual firms often begin to shoulder the lobbying burden instead.

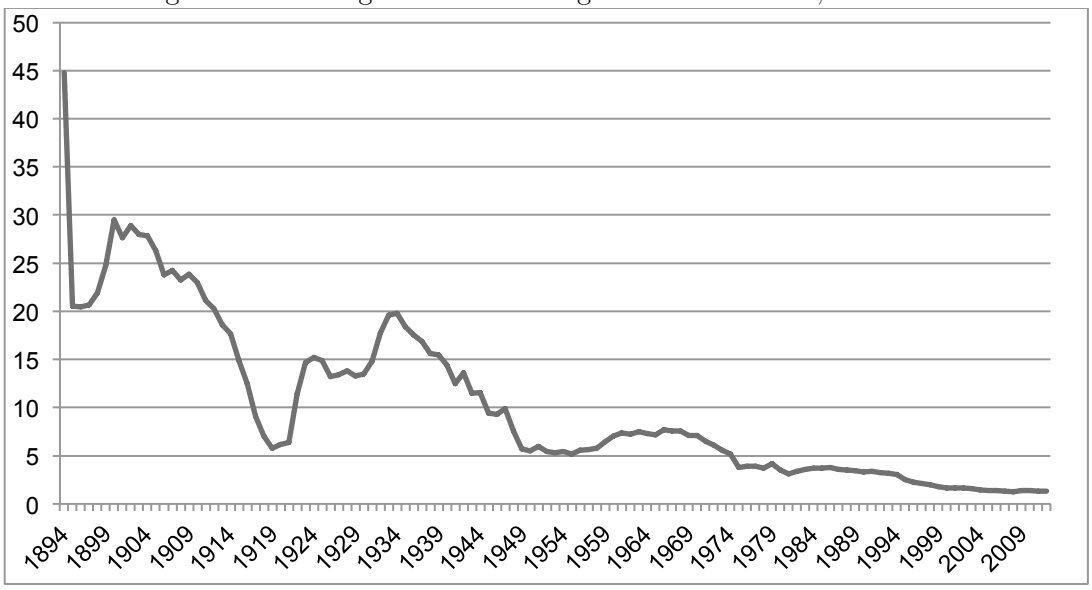
Understanding the ways in which economic actors mobilize and act collectively to influence trade policy is crucial to our understanding of patterns in trade liberalization and protection. Based on the theory I presented in Chapter 3, in this chapter I develop and test hypotheses about the way intra-industry trade affects trade coalition formation and mobilization in domestic battles over trade in the US.

This chapter proceeds as follows. First, I examine the dynamics of trade politics in the United States during the postwar period, and I demonstrate the ways that these dynamics diverge from what is predicted by the classic trade models. Second, I derive testable hypotheses to assess the influence of intra-industry trade on the structure of political coalitions aimed at influencing trade policy. In the remaining sections I test my hypotheses about coalition formation in an empirical analysis of the effects of intra-industry trade on trade lobbying in the US, and I discuss my results and their implications for the politics of international trade.

Trade Politics in the US

As in the world's other advanced industrialized democracies, US trade policy has become increasingly liberal over the 20th century and into the 21st century. As shown in Figure 4.1 below, US tariff levels have plummeted since their height in the late 1800s.

Figure 4.1: Average US Trade Weighted Tariff Levels, 1894-2012



Data Source: US International Trade Commission. Annual trade weighted average tariff is calculated by dividing total tariff revenue by total customs value.

While tariff levels have fallen consistently since the adoption of the Reciprocal Trade Agreement Act in 1934, non-tariff measures (NTMs) have increased in importance during this time. Therefore, it is important not to equate a country's tariff levels with its degree of overall trade protection. While NTMs are difficult to measure quantitatively, it is likely that they have increased considerably as tariffs have fallen. However, it is important to note that some NTMs are included in the tariff measure in the figure above, namely countervailing and anti-dumping duties. Furthermore, some analysts question whether NTMs do substantially raise overall levels of protection, or whether their effects are more limited. Milner (1988) argues that the effects of new NTM measures erected in the US in the 1970s and 1980s resulted only in a "small net increase" in protection,

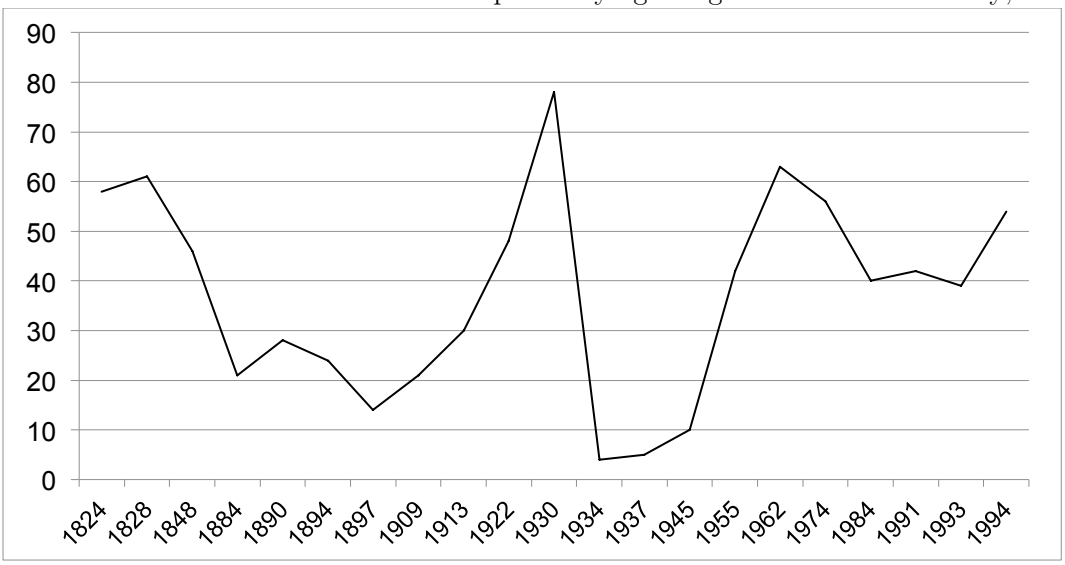
although other scholars argue that NTMs impede trade to a much greater extent than tariffs (Lee and Swagel 1997, Busch and Reinhardt 1999).

While trade liberalization in the US has been a consistent process, it has not been accompanied by a broad societal consensus about the value of free trade. After decades of strong bipartisan agreement about the importance of liberalization, at the close of the 20th century trade policy was described by one leading analyst as being once again a "contentious political issue" (Bergsten 1998:3). In this section I will present a brief overview of the political landscape of trade in the US in the postwar period, focusing on three key indicators of the nature of trade politics: the amount of political activity over trade, the direction of lobbying (liberal versus protectionist), and the composition of trade policy coalitions.

First, although trade is not always a highly salient issue among voters, lobbying activity aimed at influencing trade policy has increased in the postwar period. Hiscox (2002) measured the raw numbers of interests groups that lobbied before the House Trade Commission on major trade legislation between 1884 and 1994 and found that this number has varied widely over the course of the 20th century, quickly dropping with the passage of the Reciprocal Trade Agreements Act in 1934 and then steadily rising again in the following decades. A similar decline in trade lobbying followed the passage of the US

Trade Expansion Act in 1962, the legislation that paved the way for the opening of the Kennedy Round of multilateral tariff reductions, concluded in 1967.

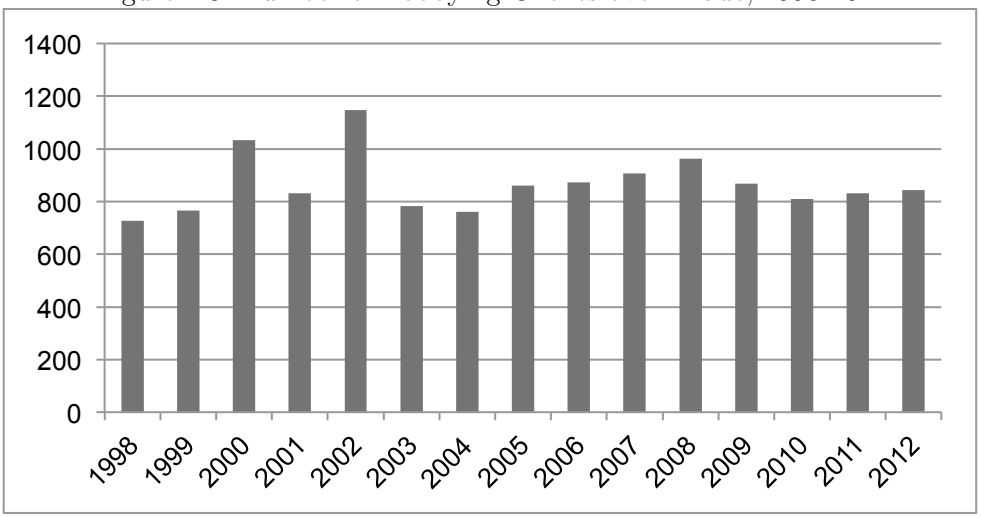
Figure 4.2: Total Number of US Interest Groups Lobbying Congress over Trade Policy, 1824-1994



Source: Hiscox data (2002). Number of interest groups testifying before House trade committees on major trade legislation.

Another data source on the amount of political activity in the trade issue area shows that in the last 15 years the number of unique actors that lobbied over trade has been fairly stable, though increasing slightly over time. These lobbyists include individual firms, industry associations, consumer advocacy groups, labor unions and lobbying firms hired by these actors. The Center for Responsive Politics collects data on all lobbying activities before Congress and US government agencies (Hiscox only counts appearances before Congress), starting in 1998. Since 1998, the number of actors lobbying over trade in a given year has ranged from a low point of 727 unique lobbyists in 1998 to a high point of 1,148 unique lobbyists in 2002.

Figure 4.3: Number of Lobbying Clients over Trade, 1998-2012

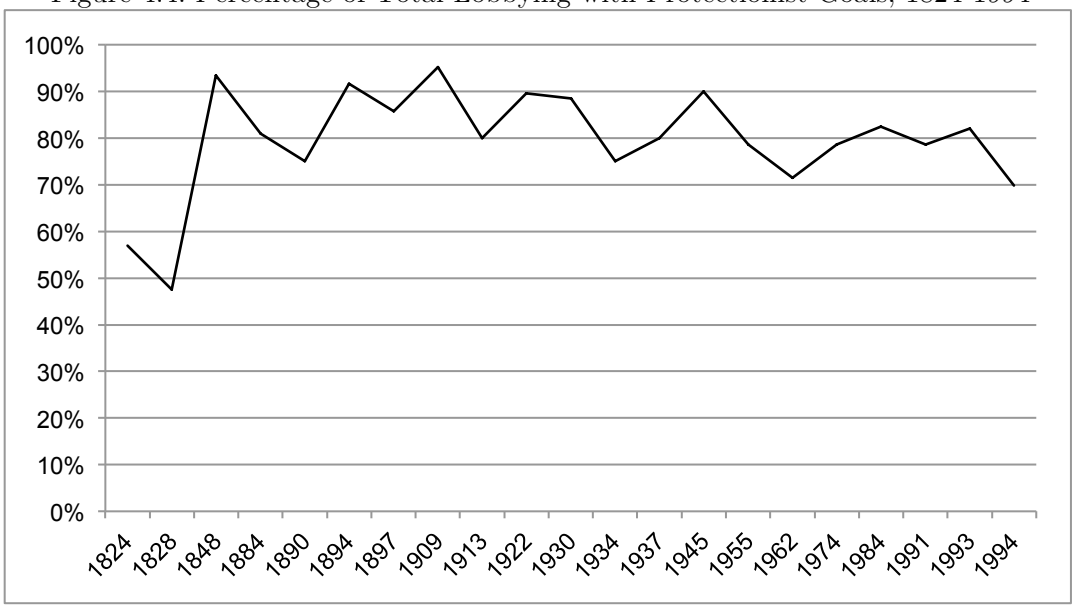


Source: Center for Responsive Politics and the US Senate Office of Public Records. Includes lobbying of Congress and US government agencies.

Second, the goals of trade policy lobbying have varied widely over time. Many analysts provide evidence suggesting that demands for protection have not decreased as trade policy has become more liberal; some scholars provide evidence that net protectionist lobbying has in fact increased (Gibson 2000, Hiscox 1999, Midford 1993). Policymakers have responded to these demands, even as they slashed tariffs, by increasing export assistance and other non-tariff protective measures (Bhagwati and Patrick 1990). In the longest time-series dataset of US trade policy lobbying, Hiscox (2002) tracks the amount of lobbying before Congress that had protectionist policy goals, relative to liberal goals. Between 1824 and 1994, protectionists comprise over half the total lobbying efforts on all major pieces of trade legislation except the infamous tariff of 1828 when free-traders from the South lobbied hard-- mostly unsuccessfully-- against the protection demanded by

industrialists and farmers from the Northeast and West. Since 1828, interest groups seeking protection have been the most politically active voice in trade policymaking, responsible for between approximately 70% and 95% of the lobbying activity on major trade legislation.

Figure 4.4: Percentage of Total Lobbying with Protectionist Goals, 1824-1994



Source: Hiscox data (2002). Based on number of interest groups lobbying before House trade committees on major trade legislation.

Verdier's (1994) data collection efforts present a similar picture. In his analysis of oral and written testimony at Congressional hearings, he finds that between 1934 and 1987, the percentage of lobbying with a protectionist bent ranged between approximately 50 to 90%, with peaks in 1934, 1955 and 1986.[1] Gilligan (1997) tracked the number of

[1] Though the two datasets present a fairly consistent overall picture of lobbying trends over time, the differences in their findings are likely attributed to differences in their data collection methodologies. Verdier includes testimony before the Senate Finance Committee, for example, while Hiscox only looks at

protectionist complaints brought by US firms to the International Trade Commission, and he found that this number has been steadily increasing over time.

A third important phenomenon in 20th and 21st century US trade politics is the changing composition of the political coalitions that form to influence trade policy. Several scholars argue that lobbying has become more heterogeneous over time in the developed countries (De Bièvre and Dür 2005, Hiscox 1999, Gilligan 1997a, Milner 1988). Midford (1993) traces the way that the postwar consensus among industrialists in support of freer trade broke down in the late 20th century, as industrialists even in capital-intensive industries demanded increased protection.

Systematic, quantitative data on the composition of US trade policy coalitions has only recently become available and only for a small handful of years. In their innovative new dataset, Bombardini and Trebbi (2012) provide the first firm-level lobbying data for a broad swath of sectors, coding political actors engaged in lobbying activities to indicate whether they are individual firms or industry associations. As described more fully in the next sections, their data shows great variation in the ways in which US manufacturing sectors organize politically. In some sectors, individual firms contribute nearly all of the lobbying expenditures. In other sectors, lobbying is done nearly exclusively by trade associations. A closer look at the Bombardini and Trebbi data on lobbying over trade

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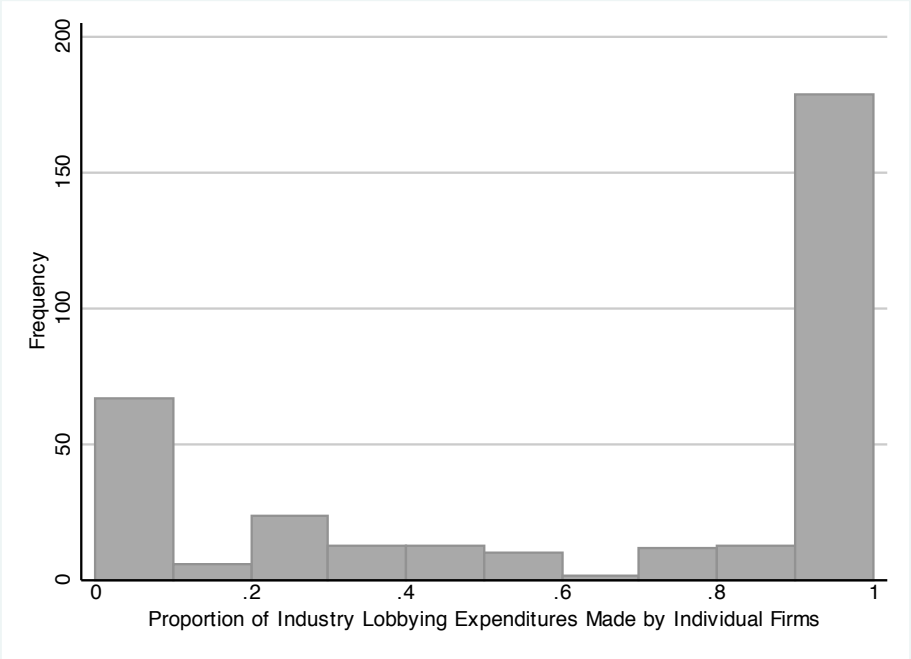
House testimony. Additionally Hiscox's data includes all interest groups while Verdier includes only trade associations and trade unions.

policy reveals some interesting empirical observations. Figure 4.5 (below) is a frequency histogram showing the number of sectors with various proportions of individual firm lobbying versus trade association lobbying. Figure 4.5 shows that in 179 industries (or 53% of the 339 manufacturing sectors that lobbied over trade policy in the years 1999-2001), over 90% of lobbying expenditures are made by individual firms. In 67 manufacturing industries (or nearly 20% of industries that lobbied), industry associations contributed more than 90% of lobbying expenditures. In the remaining industries (27% of lobbying industries) both firms and associations contribute to lobbying, at varying proportions.

Figure 4.5: Trade Lobbying by Individual Firms versus Coalition in US Manufacturing Sectors (1999-2001)



Data Source: Bombardini and Trebbi 2012. Data is for 339 US manufacturing sectors, defined at the 4-digit SIC level. Data is pooled over 1999-2001 to maximize coverage.

In sum, we can characterize the trade political landscape in the late 20th century and early 21st century as one in which economic actors have remained consistently active, and perhaps increasingly active, in lobbying over trade policy, even as US tariff levels have reached historically low levels. Additionally, the available data suggests that political activity in support of protection has remained consistently high as a percentage of overall trade lobbying. Finally, perhaps the most interesting development in US trade politics has been the rise of the individual firm as a political actor, at the expense of the industry-wide, or factor-wide, coalition. While time-series data on the composition of trade coalitions isn't available, the frequency with which individual firms lobby today is not an outcome that has been documented in historical studies of US trade politics, and it is not one that the classic, endowments-based trade theories predicted.

Intra-Industry Trade and Trade Policy Coalitions in the US

In this chapter, I test my argument developed in Chapter 3 that as intra-industry trade increases it leads to a breakdown in industry consensus over trade and incentivizes individual firms to lobby. I argued that intra-industry trade increases the probability that individual firms will be pivotal to trade policy outcomes by making trade policy more contentious within industries, it reduces the costs of firm-based lobbying relative to coalition-based lobbying and it raises the stakes of trade policy for individual firms in

industries characterized by two-way trade. With competing preferences among firms in the same industry, and substantial firm-level gains or losses at stake, firms have an incentive to take political action to counter opposing voices lobbying for trade policies that run counter to their interests.

As discussed in Chapter 2, intra-industry trade has risen in the US during the postwar period, as it has in almost all of the advanced industrialized economies. Figure 4.6 below shows that by 2005 intra-industry trade accounted for more than half of all trade in manufactures.

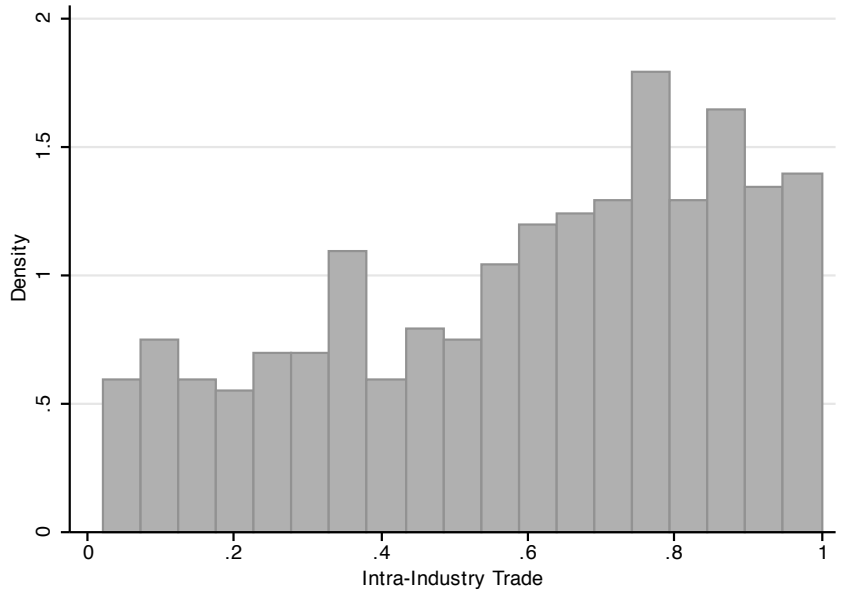
Figure 4.6: Average level of intra-industry trade for US manufacturing sectors, 1972-2005

Data source: Schott 2010. For each year between 1972 and 2005, there is data for 402 to 448 manufacturing categories, defined at the 4-digit SIC level. See Schott 2010 for further data information.

In the years 1999-2001, the years of my sample, Figure 4.7 shows that there is great industry-level variation in IIT. Most manufacturing sectors have IIT levels that are

greater than 0.5, but we can see that there are also a substantial amount of sectors—roughly one-third—characterized by lower levels of IIT.

Figure 4.7: Density Plot of IIT in 402 manufacturing sectors in US, 1999-2001



Source: Bombardini and Trebbi (2012) data.

As intra-industry trade increases, I expect that it will be increasingly difficult or trade associations to formulate strong and coherent positions on trade policy, due to the heterogeneity of their members' preferences. Import-competing firms prefer protection, but exporting firms prefer trade liberalization, as tariffs are typically negotiated within the framework of reciprocal tariff reductions among trading partners. I expect that trade associations, faced with these opposing preferences within their membership, will scale back their trade lobbying efforts. At the same time, I expect that individual firms will ramp up their lobbying expenditures in support of trade policies that allow them to

maximize their gains from trade or minimizes their losses. This leads to my first hypothesis:

> H1: Individual firm lobbying over trade, relative to coalition-based lobbying, will be higher in sectors with higher intra-industry trade.

I also expect that total firm lobbying will be higher overall in industries with higher intra-industry trade than industries with lower levels of IIT. As I argued in Chapter 3, intra-industry trade increases a firm's lobbying utility for three reasons. First, exporters in IIT industries have a greater incentive to lobby for liberalization than exporters in comparative advantage industries, where there is not a strong protectionist lobby from within their industry. In IIT industries, exporters must provide a counterweight to protectionist demands from non-exporting firms. Second, for both exporting and import-competing firms, the probability of one's political action being pivotal to the desired policy outcome is higher when there is political contention. Finally, the gains and losses from trade protection are concentrated on individual firms within the industry, rather than harming or benefitting the industry as a whole. This leads to a second hypothesis:

> H2: The total amount of lobbying expenditures by individual firms will be higher in industries with higher levels of intra-industry trade.

Research Design

To test the hypothesis that higher intra-industry trade leads to more active lobbying by individual firms relative to industry-wide coalitions, I estimate the following model:

$$\text{FirmLobby}_i = \alpha \ + \beta\text{IIT}_i + \beta\text{ImpPen}_i + \beta\text{ExpDep}_i + \beta\text{Conc}_i \ + \beta\text{CapLab}_i \ + \text{e}_i$$

where intra-industry trade, import penetration, export dependence, industrial concentration and the capital/labor ratio are independent variables.

With this model I analyze the effects of intra-industry trade on the composition of trade policy coalitions. Specifically, I test for whether increases in IIT lead individual firms to spend more money on trade policy lobbying relative to industry coalitions. The primary dependent variable in this analysis, Firm Lobbying Proportion, is measured as the proportion of an industry's lobbying expenditures that are made by individual firms relative to expenditures by industry associations composed of coalitions of firms. This measure allows me to examine a sector's political organization to see whether, within that sector, firms delegate trade lobbying to associations representing their joint interests, or whether individual firms take on political activity themselves. In this study, I define industry at the 4-digit sector classification level according to the Standard Industrial Classification system (SIC), revision 2. To test the hypothesis that individual firms in

high IIT industries will spend more on lobbying than individual firms in industries with low IIT, I employ the dependent variable Total Firm Expenditures. This variable measures, for each industry, lobbying expenditures contributed by individual firms. It captures the sum total lobbying expenses contributed by all lobbying firms within an industry.

The main independent variable in this study is Intra-Industry Trade. I employ the most commonly used measure of intra-industry trade, developed by Grubel and Lloyd (1975):

$$\mathrm{IIT}_i = 1 - \frac{|X_i - M_i|}{(X_i + M_i)}$$

where X_i and M_i are measures of exports and imports of industry i, respectively. This measure approaches one as trade becomes more balanced, or more heavily IIT, and it reaches zero when there is no two-way trade in the given industry.

One point to bear in mind about this measurement of IIT is that it gives no information as to the import versus export composition of trade. In other words, a competitive industry that exports heavily and competes with a small number of imports may have the same level of IIT as a primarily domestic-oriented industry with few exports and heavy import competition. Both these industries would have low levels of IIT, although one is primarily an exporting industry (in other words, a comparative advantage industry) and the other is primarily an import-competing industry (a comparative

disadvantage industry). Therefore, I control for Import Penetration, measured for each industry as the ratio of imports to domestic production for domestic consumption (imports / shipments + imports - exports). This measure controls for the fact that industries that face greater competition from imports are more likely to lobby in favor of protection. We might expect that industries subject to heavy import competition would have active trade associations lobbying on behalf of individual firms. Even when import penetration is high, however, we might see a breakdown in industry consensus over the value of protection if that industry is subject to high levels of intra-industry trade. In IIT industries, some firms will export and have an interest in reducing protectionist barriers, while non-exporters may continue to prefer protection. In these industries, higher import penetration ratios may be associated with greater lobbying by individual firms relative to industry-wide coalitions.

I also include several control variables to test for leading alternative explanations. Export Dependence measures the percentage of total domestic production that is destined for foreign markets (exports / exports + shipments). Milner (1988) argues that exporting firms, and especially multinationals, will lobby for openness. Thus, high export dependence may lead to more active lobbying by individual firms, no matter the level of intra-industry trade. I argue that even among industries with high levels of export dependence, individual firm lobbying will be higher in high IIT industries because of the

higher degree of import competition in these industries, which divides industry and incentivizes political action by both those firms seeking protection and those seeking liberalization.

Industrial Concentration is measured as the four-firm concentration ratio: the percentage of industrial shipments that are produced by the top four firms in an industry. Leading firms may be more likely to lobby alone in concentrated industries where they stand to capture a large proportion of gains or losses from trade policies. Alternatively, individual firms may be more likely to lobby alone when industrial concentration is low, as collective action may be more difficult to achieve when there are numerous firms with differing preferences over trade policy. Geographic Concentration measures the degree to which an industry's activities are physically concentrated, which may also reduce collective action costs. Political Concentration is a Herfindahl index that measures the concentration of an industry's employment within electoral districts, rather than geographic units. These concentration measures control for a purely collective action-based argument which would expect lobbying through trade associations to occur in more concentrated industries with fewer firms and fewer collection action problems to overcome.

These variables—import penetration, export dependence, and industry concentration—control for some of the leading alternative demand-side explanations of the

nature of political coalitions. I include a number of other sector characteristics as controls, as discussed below.

Data

The sample in this study consists of all 459 US manufacturing sectors defined at the SIC 4-digit level, minus missing data. The sectors are part of the 2000 and 3000 group of manufacturing sectors and encompass the entire range of manufactured products, from agricultural products to chemicals to apparel to machinery.

The primary dependent variable in this study, Firm Lobbying Proportion, is the percentage of lobbying expenditures in a 4-digit manufacturing sector that is undertaken by individual firms, as opposed to a trade coalition. This measure was created by Bombardini and Trebbi (2012) in a novel new dataset that represents the only collection of firm-level trade lobbying expenditure data in the literature. Bombardini and Trebbi collected firm-level spending data from the Center of Responsive Politics and the US Senate Office of Public Records. This data includes information on the lobbyist and the client paying the lobbyist. Data from 1999-2001 was pooled to maximize coverage. They coded this data to indicate whether the client was an individual firm or a trade association and aggregated the data at the sector level to obtain a sectoral measure. Firm Lobbying Proportion is a bounded continuous variable ranging from 0 to 1. A score of 0

indicates that all lobbying expenditures in industry *i* were undertaken by associations or coalitions, while a score of 1 indicates that all lobbying expenditures in industry *i* were undertaken by individual firms. Thus, a higher score on my dependent variable indicates greater individual firm lobbying relative to industry coalitions.

The distribution of this dependent variable is strongly bimodal. As shown in Figure 4.5 above, it is very common for individual firms to contribute nearly all of the lobbying expenditures, and it is also common for individual firms to contribute nearly none of the lobbying expenditures. In nearly 53% of industries, individual firms contribute 90% or more of the industry's total lobbying expenditures, while in 20% of industries individual firms contribute less than 10% of total lobbying expenditures. During the period between 1998-2008, all the years when data was available, 84% of manufacturing sectors engaged in some level of lobbying over the trade policy issue (Bombardini and Trebbi 2012). In my sample, the mean proportion of industry lobbying that individual firms undertook is 0.667, and there is a wide range of values here. In some industries, lobbying is done virtually exclusively by trade associations and the Firm Lobbying variable approaches zero. In other industries firms contribute 100% of lobbying costs.

My second dependent variable, Total Firm Expenditures, is the total dollar amount spent by individual firms on lobbying US policymakers over trade policy. This data was collected by Bombardini and Trebbi (2012) from the Senate Office of Public

Records and includes expenditures for lobbying of Congress as well as federal agencies. They coded lobbying expenditures according to the type of client, whether firms or associations. This variable is measured in millions of dollars. The mean expenditure for individual firms within an industry is $321,000 annually. This number does not represent the mean amount spent by a single firm; rather, it represents the mean of the total amount of expenditures made by all firms within an industry that lobbied. The maximum amount that individual firms within an industry contributed was $3,627,000 in the weft knit fabric mills industry. My key independent variable, Intra-Industry Trade, was constructed using sector-level import, export, and shipments data from Schott (2010).

Table 4.1: Summary Statistics – Lobbying and Intra-Industry Trade

	Obs.	Mean	Median	Std. Dev.	Min	Max
Proportion of Industry Lobbying undertaken by Individual Firms	278	0.667	.950	0.398	0.000	1
Total Firm Lobbying Expenditures	366	.321	.042	.589	0.000	3.627
Intra-Industry Trade	282	0.587	0.950	0.264	0.000	0.983

Note: The statistics here include only the observations included in the fully specified regression models. Lobbying expenditures are in millions of dollars.

Data for Export Dependence also comes from Schott (2010). The data for Import Penetration is from Feenstra (2002). Controls for industry concentration (the value of total shipments produced by the top 4 firms) are obtained from Bombardini and Trebbi (2012), while political and geographic concentration ratios were constructed by Busch and Reinhardt (1999). I also control for an industry's Capital/labor ratio, and this data comes

from Bombardini and Trebbi (2012), who computed ratios from physical capital stock and total sectoral employment measures from the National Bureau of Economic Research Manufacturing Industry Productivity Database. This measure is an average over the 1986-1996 period. Including the capital/labor ratio allows me to control for the argument that more labor-intensive industries will be more likely to lobby jointly through trade associations (presumably for protection, although we do not have information on the direction of lobbying). To control for an industry's existing level of protection, I use data on tariff levels. The variable Tariff measures trade weighted tariff levels in the year 1999. This data is from Feenstra et al (2002). The control variable Average Size controls for firm size and indicates the average firm size in each 4-digit industry. This data is from the US Census Bureau.

Results

I estimate my primary model using a Tobit regression model because my primary dependent variable, Firm Lobbying Proportion, is measured as a proportion of one. Additionally, my dependent variable is non-normal, with censoring occurring toward both zero and one (see Figure 4.5 above), so it is inappropriate to apply a linear regression

model.[2] Therefore, following Bombardini and Trebbi (2012), I treat the proportion as a continuous variable censored at 0 and 1, and I employ a two-limit Tobit model.[3] Tobit models are used to analyze dependent variables that cannot take values above or below certain limits (Roncek 1992).

In all models, I include a SIC-1 level sector fixed-effects variable to control for variation across the 2000 and 3000 group of manufacturing sectors. Sectors in the 2000-group include agricultural and food manufacturing, mills, tobacco products, apparel, textiles, paper products, and chemicals, while sectors in the 3000-group include plastics, footwear, metal products, machinery, electronics, laboratory instruments, vehicles and others.

Tobit results are reported in Table 4.2 below. The effects of the independent variables on the latent dependent variable are reported in the top half of this table; marginal effects of these variables on the observed dependent variable are in the bottom half of the table. The results for the latent dependent variable represent the theoretical effect of the independent variables on the conditional mean of the dependent variable if it

[2] Running the analysis with an OLS model produces significant results, but my data violates several assumptions of OLS, including non-linearity and non-normality of residuals.

[3] Long (1997) and others argue that dependent variables measured as a proportion or a percentage out of 100 can be treated as a censored variable. The reason, as they argue, is that some events would have occurred more than 100% of the time, or less than 0% of the time, if that were possible. To use my data as an example, in a given industry, individual firms may have contributed 100% of the lobbying expenditures, while trade associations spent nothing on lobbying. Theoretically, had there been yet more trade legislation proposed, trade associations would have continued to spend nothing, while individual firms would have spent even more money.

Table 4.2: IIT and Proportion of Lobbying Undertaken by Individual Firms (Tobit Analysis)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Marginal Effects on Latent Dependent Variable						
Intra-Industry trade	0.366**	0.371***	0.281*	0.297*	324**	0.413***
	0.143]	0.143]	[0.157]	[0.155]	[0.143]	[0.143]
Industrial concentration		0.006***		0.004		0.004
		[0.002]		[0.002]		[0.002]
Geographic concentration		-0.224				
		[0.324]				
Political concentration		-0.883				
		[1.159]				
Export dependence					0.028	0.020
					[0.325]	[0.321]
Import penetration			-0.446**	-0.401**		
			[0.179]	[0.166]		
Capital/labor ratio				0.001**		0.001**
				[0.000]		[0.000]
				-0.017		0.052
Average firm size				[0.204]		[0.195]
Logged tariffs				-0.008		-0.008
				[0.023]		[0.022]
Sector fixed effects	-0.265***	-0.276***	-0.216***	-0.187**	-0.257***	-0.232***
	[0.076]	[0.076]	[0.081]	[0.080]	[0.080]	[0.081]
Constant	0.800***	0.666***	0.919***	0.570***	0.808***	0.415***
	[0.101]	[0.197]	[0.120]	[0.163]	[0.105]	[0.149]
Marginal Effects on the Observed Dependent Variable						
Intra-Industry trade	0.073**	0.077**	0.057*	0.067**	0.065**	0.092**
	[.029]	[.031]	[.033]	[.036]	[.030]	[.034]
Industrial concentration		0.001***		0.001		0.001
		[.001]		[.001]		[.001]
Geographic concentration		-0.067				
		[.074]				
Political concentration		-0.184				
		[.242]				
Export dependence					0.006	0.005
					[.066]	[.072]
Import penetration			-0.09	-0.091		
			[.038]	[.038]		
Capital/labor ratio				0.000**		0.000**
				[.000]		[.000]
Average firm size				-0.004		0.012
				[.046]		[.044]
Logged tariffs				-0.002		-0.002
				[.005]		[.005]
Sector fixed effects	-0.052***	-0.057***	-0.044***	-0.051***	-0.052***	-0.052***
	[.016]	[.017]	[.017]	[.020]	[.017]	[.019]
Observations	298	290	291	280	292	278
Left Censored	1	1	1	1	1	1
Right Censored	130	124	126	118	125	116

*** p<0.01, ** p<0.05, * p<0.1. All standard errors (in brackets) are heteroskedasticity robust.

were uncensored and could vary beyond its limits of 0 and 1. The marginal effect on the observed variable--the bottom half of the table-- reports the effect of a change in the regressors on the conditional mean of the censored (or observed) dependent variable.[4] The nature of my data is such that the percentage of individual firm lobbying could never vary below 0 or above 1, so we are most interested in the results reported for the observed dependent variable. I discuss these results in this section.

In all models, intra-industry trade is positively and significantly related to the percentage of lobbying expenditures within a sector that are undertaken by individual firms, relative to coalitions. As the level of intra-industry trade increases, individual firms contribute a higher percentage of the lobbying expenditures within their industry. This result holds even when controlling for other sector and firm characteristics that are expected to influence a firm's decision to mobilize politically. In the simple bivariate relationship between IIT and the (observed) percentage of individual firm lobbying (Model 1), for a one unit increase in IIT, there is an expected change of 7.3% in the share of lobbying undertaken by individual firms relative to coalitions, holding all other variables constant. Put another way, if intra-industry trade went from 0 to 100%, the percentage of firm lobbying would increase by 7.3%. If an industry's IIT increased by 10% percentage points, firm lobbying contributions would increase by 0.73%. This result holds

[4] The "latent" variable represents the values that the dependent variable (percentage of lobbying in a sector undertaken by individual firms) could take if it were not limited by 0 and 1.

even when controlling for other sector and firm characteristics that are expected to influence a firm's decision to mobilize politically.[5]

Other variables also have a positive and significant effect on the percentage of firm-based lobbying within an industry. When an industry's production is more concentrated into the hands of the four leading firms within the industry, these firms are more likely to lobby alone than firms in less concentrated sectors. As concentration decreases and an industry's production is more dispersed among many firms, these firms are much more likely to engage politically via an industry-based association (Model 2). My two other measures of concentration, geographic concentration and political concentration, never achieve significance so I drop them from additional models reported here.

Export dependence and import penetration do not achieve significance, though their signs are consistent with theoretical expectations and prior empirical work (Models 3-6). I analyze these variables in separate models because they are highly correlated with each other. My results show that as a sector becomes more dependent on exports, its firms are more likely to undertake political action alone. Conversely, as import penetration increases, firms are more likely to undertake political action through a coalition. The

[5] I achieved similar results when I estimated the relationship with a logit model, and the sizes of the coefficients were larger in the logit models. IIT had a positive and significant effect on the likelihood of firms deciding to lobby individually. The downside of the logit model is that transforming the DV into binary outcomes means that I lose a lot of information.

capital/labor ratio was statistically significant and positive in all models, although this coefficient is very small in magnitude. Firms in the more capital-intensive industries may be slightly more likely to lobby alone than via coalitions. Two final control variables, average firm size and the industry's existing tariff level, are not significant in any model.

Table 4.3 below reports the results of OLS regressions on my secondary dependent variable, Total Firm Expenditures. I transformed this variable to its natural log. Intra-industry trade has a positive relationship with higher total lobbying expenditures undertaken by individual firms, but it loses its significance when I control for export dependence. Export dependence is positively and significantly related with the amount of money that individual firms spend on lobbying.

Table 4.3: IIT and Firm Lobbying Expenditures (OLS)
DV = Total Amount of Lobbying Expenditures by Individual Firms (Logged)

Intra-Industry trade	2.062	3.61***
	[1.074]	[1.114]
Industrial concentration	0.010	.014
	[0.016]	[.016]
Export dependence	7.207***	
	[2.466]	
Import penetration		4.748 ***
		[1.231]
Capital/labor ratio	0.012***	.012***
	[0.003]	[.004]
Average firm size	-0.268	-.048
	[1.018]	[1.086]
Logged tariffs	0.167	.117
	[0.160]	[.159]
Sector fixed effects	-3.546***	-3.773***
	[0.613]	[.586]
Constant	-6.358***	-7.597***
	[1.018]	[1.150]
Observations	366	368
R-squared	0.162	0.168

*** p<0.01, ** p<0.05, * p<0.1. Standard errors (in brackets) are heteroskedasticity robust.

Discussion

The results of my analyses provide support for the arguments I have made in this chapter about the relationship between intra-industry trade and the structure of domestic political coalitions lobbying over trade policy in the US. As I hypothesized, we see that as an industry's trade structure becomes more highly intra-industry, as opposed to endowments-based, coalition-based lobbying becomes less frequent as a proportion of total lobbying. In these industries, individual firms become the most active political agents pressuring for particular trade policies before Congress and federal agencies. Additionally, industry concentration into the hands of a few leading firms is also associated with a breakdown in coalition-based lobbying in favor of individual firm lobbying. The more capital-intensive industries also are characterized by politically active firms and less active trade associations.

Taken together, these findings appear to support the claims I have made about intra-industry trade and trade coalitions. First, I argued that the adjustment costs of trade liberalization in industries that export as well as compete with imports will fall on individual firms, rather than entire classes or industries. This will lead to a breakdown in industry consensus over the value of tariff reductions. This claim is supported in my analysis: industry-based coalitions are less active relative to individual firms in industries with higher intra-industry trade, and this relationship holds even when I control for the

industry's level of export dependence. Milner (1988) argued that firms in exporting industries will lobby for trade liberalization. While I expect exporters to lobby for liberalization, I also expect import-competing firms to lobby for protection in IIT industries. Milner's analysis rests on the assumption that exporting industries enjoy a comparative advantage in production and won't suffer heavy import competition. My findings are complementary. I find that in industries with high levels of imports as well as exports, both exporters and importers have an incentive to lobby for their preferred trade policies. Even when controlling for dependence on exports, industries with higher levels of IIT are more likely to be subject to heavy firm-based lobbying, because in IIT industries, exporters are not the only actors incentivized to lobby. Import-competing firms also have an incentive to mobilize politically to counter the competing preferences of exporting firms.

Second, I argued that intra-industry trade will increase the level or intensity of firm-based political activity over trade. My results support this argument. I find a positive relationship between intra-industry trade and the amount of lobbying expenditures undertaken by individual firms to influence trade policy. Contrary to the predictions of analysts such as Marvel and Ray (1987), my results show that as intra-industry trade increases, firm expenditures over trade policy increase as well. Gilligan (1997) also expects lobbying to increase along with intra-industry trade, and he argues that this much of this

lobbying will take a protectionist stance. My data does not provide information on the policy preferences of lobbying actors, but my results suggest that exporting firms become increasingly active lobbyists as IIT increases (export dependence was positively, though not significantly, associated with individual firm lobbying). In the multilateral international trade regime, in which tariff reductions are reciprocal and hikes in tariffs are often met with retaliation, it is difficult to imagine that big exporters (who may also be big importers) would be vocally supporting protectionist trade policies. It is conceivable that they might lobby for non-tariff measures of protection, however. I will return to this question in the next chapter.

My finding that capital intensity is associated with higher firm-based lobbying is a departure from the expectations of the classic trade theories. Endowments-based approaches would expect that in the US, where capital is an abundant factor, capital-intensive producers would be united in support of openness. As this aligns with consumer preferences for free trade, there would not be a need for heavy lobbying in support of trade liberalization. I find, however, that firms in industries with high capital-intensity contribute higher total lobbying expenditures than industries that are more labor-intensive. Capital-intensity is also associated with more firm-based lobbying relative to coalition-based lobbying (even controlling for the average firm size in the industry). This makes sense when considering that capital intensity and intra-industry trade are

positively correlated, and that economists expect that increasing returns to scale industries, which also tend to be capital-intensive, are likely to have high levels of two-way trade (Krugman 1979).

The predictions of endowments-based theories may well explain trade politics outcomes in low-IIT industries whose trading patterns conform to comparative advantage. The flip side of my findings here is that when IIT is low, coalitions are more active in lobbying, relative to firms. This does conform to what the classic theories expect: we would expect that in export-oriented, comparative advantage industries firms are united behind free trade preferences and in import-competing, comparative disadvantage industries firms are united behind protectionist preferences. Homogenous preferences are conducive to coalition-based lobbying. But these classic approaches cannot explain the breakdown in lobbying coalitions, within industries, that my analysis highlights.

Finally, my findings are interesting when considered in terms of arguments about collective action. I find a positive relationship between industrial concentration and firm-based lobbying, though this relationship loses its significance in the fully specified models. This counters the Olsonian idea that smaller groups have an easier time organizing collective action (Olson 1965). We might expect that industries with fewer firms, or fewer big firms, would have an easier time organizing to jointly influence policy. This assumes that they have homogenous trade preferences, however, and the argument here is that

firms within an industry subject to high IIT will have heterogeneous preferences. In these industries, since firms have competing preferences and trade associations are more reluctant to take a firm lobbying stance, firms that want to influence policy are faced with two options: 1) lobby alone, or 2) form a new, smaller coalition with like-minded firms. Olson's logic of collective action also supplies the insight that new organizations of collective action are extremely costly to create. Thus, the emergence of firm-based lobbying in US trade politics may be based on a calculus that scarce resources are best spent lobbying directly than building coalitions. For the big firms at the forefront of highly concentrated industries, this may be especially true.

Conclusion

In conclusion, this chapter has used exciting new firm-level data to analyze the structure of trade policy coalitions in the US I have found that intra-industry trade is associated with greater firm-based lobbying and a smaller role, in comparison, for trade associations and industry-based coalitions. This phenomenon is one that classic, economic or endowments-based approaches to studying trade politics have had difficulty explaining, and it is also one that is difficult to test without firm-level data.

Nevertheless, there are limits to this study that point to clear directions for future research. First, my arguments would be greatly strengthened if I also found support for

my claims through examining the trajectory of a few industries over time. It would be a good test of my findings to use time-series data to see how changes in IIT in a single industry, over time, are associated with changes in the political organization and activity of firms and coalitions within that industry. Future research could aim at expanding the dataset used here to include more years, for a select set of industries.

Another limit to this analysis is that it does not examine supply-side variables, such as political and policymaking institutions, that influence not only the success of lobbying efforts but also the decision to lobby in the first place. I attempt to address this shortcoming in the following chapter, where I use a comparative analysis to bring in cross-national differences in political institutions. When I include institutions and supply-side variables into the analysis, I can begin to make stronger claims about the effect that IIT has on trade policy itself.

CHAPTER 5

INTRA-INDUSTRY TRADE AND LEVELS OF PROTECTION

Introduction

A central and puzzling feature of the postwar global economy, especially in the years since 1980, has been the unilateral liberalization of trade policies in economies all over the world, advanced as well as developing. Rodrik (1994) calls it a "rush to free trade" and claims that this liberal shift since the early 80s represents a "genuine revolution in policymaking" (1994:62). In the previous chapter I analyzed the relationship between intra-industry trade and trade political coalitions. I examined the ways that intra-industry trade impacts trade preferences and the ways that firm actors form coalitions to influence trade policy. I found that higher intra-industry trade is associated with more political activity on the part of individual firms, and less on the part of industry coalitions. In this chapter, I move to the next step in the analysis and I examine the effects of intra-industry trade on resulting levels of protection. I argue that intra-

industry trade has incentivized free-traders to be more active in trade policy lobbying, giving policymakers greater freedom to liberalize trade and reduce tariffs.

Whereas in the last chapter, I limited my focus to the "demand side" of trade policy, in this chapter I bring in considerations of supply-side factors such as political and policymaking institutions to develop and test hypotheses about the effects of trade structure on trade policy. One of the contributions of the approach I take in this dissertation is in my two-stage analysis of the relationship between intra-industry trade and trade policy outcomes. Rather than assuming policy outcomes will perfectly reflect preferences, I break this relationship down into two key steps to provide a more comprehensive account of both trade politics and trade policy that addresses both demand-side and supply-side factors. I use the theory and results of my analysis of trade policy demands (Chapter 4) to generate new hypotheses in this chapter about resulting trade policy outcomes. I hope that this two-stage treatment can overcome some of the limitations of studies that focus solely on one side of the equation.

Most of the political science literature on trade policy can fit into a few broad categories: interest-based explanations, statist or international-level explanations, and institutionalist explanations. An early line of interest-based explanation is the endogenous tariff policy literature. The endogenous tariff model treats trade policy as a direct reflection of domestic politics and domestic trade preferences. A key assumption of this

approach is that protectionists lobby more than free-traders, so politicians implement tariffs as a way to satisfy protectionist groups and "purchase" electoral support from key constituencies (Mayer 1984; Magee, Brock and Young 1989; Conybeare 1991; Grossman and Helpman 1994). Politicians may cater to both special interest groups as well as voters. Voters and interest groups are expected to weigh the costs of political action against the benefits of their preferred trade policy, and politicians provide the policies demand as a way to improve their own electoral prospects.[1]

A limitation of this approach is that it overpredicts protection and has a hard time explaining liberalization, as well as cross-national tariff variation. If protectionists face fewer collective action problems and can more easily mobilize to influence trade policy, what explains the ongoing movement toward freer trade? Additionally, the "protection for sale" explanation may not be very generalizable outside of the American political context. For example, many scholars who study trade policymaking in the European Union argue that interest-based models are less relevant in the EU context, as policymakers there are supposed to be more insulated from lobbying (Meunier 2005, Woolcock 2005).[2] Furthermore, all too often, demand-side models generate flawed predictions of trade policy outcomes because their models draw a straight line from domestic political preferences to

[1] Guisinger (2009) challenges voter-driven models of trade policy. She uses recent survey data to show that trade is a low-salience issues among US voters, calling into question the assumption that voter demand is a significant factor in trade policy outcomes.

[2] However, recently some EU scholars have challenged this assumption. Dür (2008) argues that the influence of domestic actors on the outcome of major trade legislation in the EU has been overlooked.

policy outcomes, overlooking the role of mediating factors such as institutions. It is this problem that I have tried to avoid in this dissertation, by problematizing trade policy demands and trade policy outcomes separately.

Another approach to explaining trade policy prioritizes the role of state goals, ideas, or international factors. State-centric analyses assume that trade policy is a reflection of state goals or ideas about trade policy. Destler (1980) argues that bureaucratic insulation from interest group pressure is a large part of the reason why the US was able to liberalize its trade policies in the postwar period. Congress delegated a substantial part of trade policymaking to an executive agency, the International Trade Commission, which was able to withstand much of the protectionist pressure from society to which Congress regularly succumbs. These bureaucrats shared the prevailing pro-free trade goals of US presidents at the time. Goldstein (1988) and Krueger (1997) both focus on the role of ideas, arguing that the adoption of this pro-free trade ideology among policymakers at the time was a significant factor in the multilateral trade liberalization. Others point to American hegemony and the rise of rules-based international institutions as a primary factor behind the multilateral liberalization of trade policies (Krasner 1976, Davis 2004, Rose 2005, Goldstein et al 2007). While valuable for the insights that unelected state actors as well as international factors influence the direction of trade

policy, the obvious shortcoming of state-centric trade policy models is in their neglect of domestic politics.

In light of the shortcomings of these approaches, many scholars argue that explanations of trade policy are limited without taking into consideration the domestic political institutional context.[3] Institutions "filter" or mediate between policy demands and policy outcomes. Institutionalist analyses might focus on the way that institutions incentivize or disincentivize different societal groups to undertake political action. This approach may also examine policymakers' incentives to implement certain trade policies. Many institutionalist explanations of trade policy focus on electoral institutions. Variations in the ways that legislators are elected affect their policy choices. Several influential studies argue that proportional representation facilitates more liberal trade policies than winner-take-all electoral systems, because legislators elected through a PR system are less susceptible to demands from constituents. This is because in PR systems, a party's best strategy is to appeal to broad segments of the population as a way to maximize vote share and secure the greatest number of seats possible. In winner-take-all systems where candidates often need only a plurality of votes to win, they are much more susceptible to pressure from powerful special interests. As a result, winner-take-all systems

[3] In this analysis I limit my discussion to democracies and institutional differences within democracies. However, many scholars have studied whether democracy promotes trade liberalization, and they have come to varying conclusions. For arguments that democracy increases openness, see Milner and Kubota (2005), Mansfield et al (2002), and Wintrobe (1998). For arguments that democracy may promote protectionism, see Kono (2006) and Verdier (1998).

are expected to have more protectionist trade policies (Rogowski 1989; Mansfield and Busch 1995; Grossman and Helpman 2005). Adopting a similar logic, the presidential liberalism thesis makes the claim that countries in which presidents are responsible for trade policymaking will have more open trade policies, because presidents have more freedom to act on behalf of the national interest rather than specific special interest groups (Katzenstein 1977, Baldwin 1985, Lohmann and O'Halloran 1994). Other scholars extend this logic to arguments about constituency size. When elected officials have smaller constituencies (or districts), they are more responsive to special-interest demands, and when concerning trade policy these demands are typically protectionist. These scholars argue that electoral systems with smaller district sizes tend to be more protectionist (Nielson 2003, Hankla 2006, Kono 2009).

Other more recent scholars emphasize the accessibility of the policymaking process, rather than a specific institution. Henisz and Mansfield (2006) argue that the influence of interest group pressure on trade policy outcomes is conditional upon the number of veto points in the domestic policymaking process. When there are more veto points, protectionist sentiments among social groups are less likely to be translated into protectionist policy outcomes as the costs of political action are higher. Similarly, Ehrlich (2007) argues that when there is more access to the policymaking process, and more opportunities to influence policymakers, trade policy will be more protectionist.

Many of the arguments presented above are complementary, rather than competing. Changes in factor endowments, national industries, or trading patterns can affect societal trade preferences at the same time that institutions structure the ability of society to influence state policies. In this chapter I seek to combine insights from several approaches into an argument that can account for both demand and supply-side factors--preferences, collective action costs, and institutions--of trade policymaking. Consistent with the focus of this dissertation, however, my model does skew more heavily on the demand-side, societal factors rather than supply-side, institutional factors. This chapter proceeds as follows. First, I discuss some of the key features and developments of trade policy in the developed economies in the postwar era, and I argue that the rise of intra-industry trade has significantly changed the landscape of trade politics. Second, I present a model of the ways in which I expect intra-industry trade to affect trade policy outcomes, building on the insights about lobbying that I developed in Chapter 4. Just as scholars disagree about the impact of intra-industry trade on trade lobbying coalitions, there is no consensus in the literature on how it will affect levels of protection. These conflicting arguments have received limited empirical testing. I discuss and test some of these arguments as well as my own argument in the third section of the paper. I analyze the relationship between IIT and trade policy outcomes in a more expanded dataset than those used by the aforementioned scholars. The cross-national dataset spanning more than

a decade compiled by Nicita and Olarreaga (2007) allows me to observe changes over time as well as across national contexts. Finally, I discuss my results and their implication for the study of trade policy.

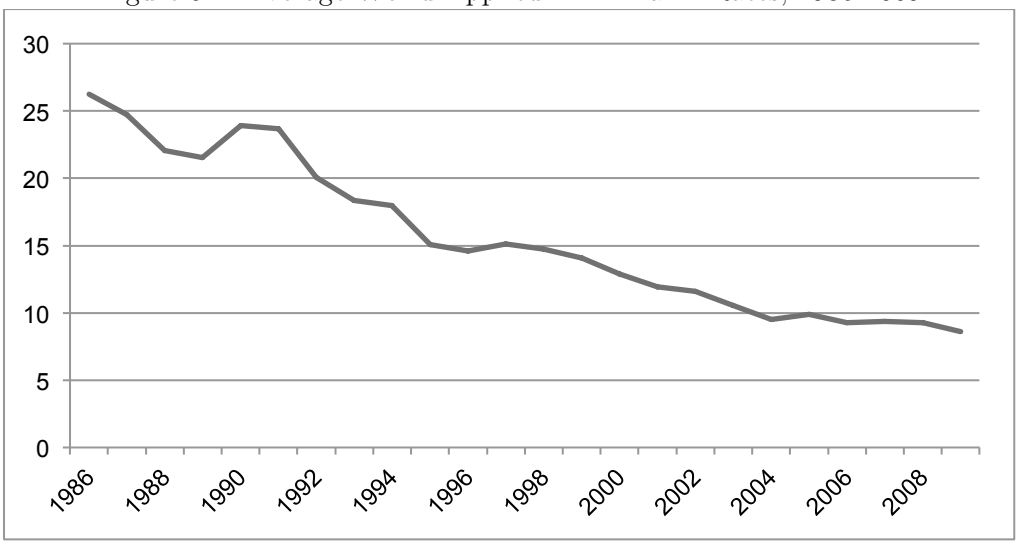
Trade Policy in OECD Countries

Perhaps the most important feature of the international trading system since World War II, and certainly one that is most discussed and studied, is the remarkable and dramatic liberalization of national trade policies and the dismantling of tariff barriers to trade. What was initially a liberal project embarked upon by the United States, Western Europe, Japan and other advanced democracies has become a truly global endeavor, as developing countries began in the 1980s to unilaterally, and often rapidly, open their economies and join the rules-based international trading regime (Rodrik 1994).

After signing the General Agreement on Tariffs and Trade in 1947, the 23 original signatories (mostly developed states and their colonies or former colonies) set about systematically reducing their tariffs through a reciprocal system that granted preferential tariff rates to other GATT members. By the early 1980s, the United States' average tariff was about 4.5%, which was 92% lower than its average tariff in 1947. Japan's, Canada's and the Western European countries' tariffs dropped to similar levels, and developing countries began clamoring to join the wealthy, free-trading club. The result of these

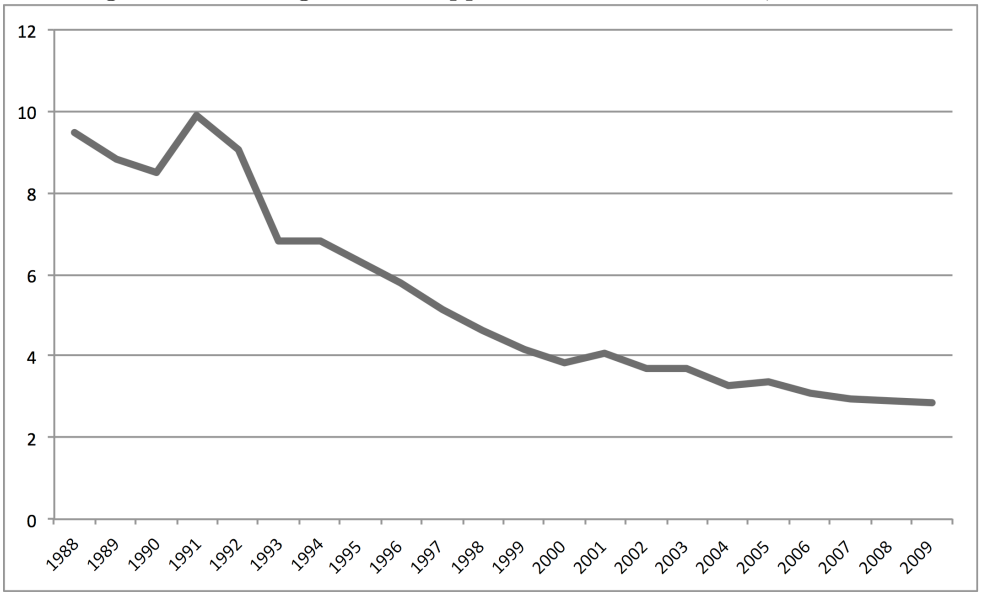
multilateral efforts was an enormous increase in world trade: the value of trade doubled between 1960 and 1970 and increased another 85% from 1970-1973 alone (Grieco 1990: 52).

Figure 5.1: Average World Applied MFN Tariff Rates, 1986-2009



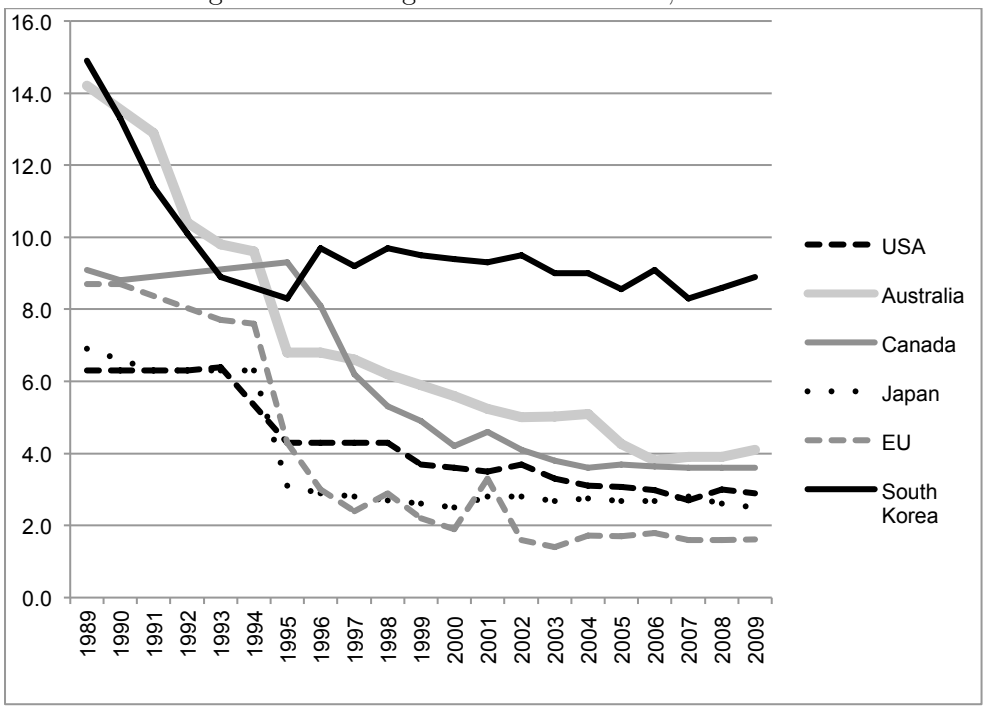
Source: UNCTAD, all available years.

Figure 5.2: Average OECD Applied MFN Tariff Rates, 1988-2009



Source: UNCTAD, all available years.

Figure 5.3: Average MFN Tariff Rates, 1989-2009



Source: UNCTAD, all available years.

With tariff levels at historically low levels across OECD countries, one might assume that societal preferences in these countries overwhelmingly favor free trade. Yet studies of trade politics and policy have found that liberalization has been highly contentious even among the early liberalizers that have seemingly marched steadily toward less and less protection (Midford 1993). Protectionist lobbying has not abated (Gilligan 1997, Dür 2008), so we have little reason to expect to observe consistently liberal trade policies across sectors and across countries. This may be one way to understand the rise of non-tariff measures: tools with which policymakers could protect domestic firms, industries and workers from trade competition without running afoul of tariff-based international trade agreements.

The major trading states realized as early as the 1960s and early 1970s that non-tariff barriers to trade were becoming a significant problem. GATT members initiated a new negotiating round, the Tokyo Round (1973-1979), specifically to address non-tariff barriers to trade. The US was particularly concerned with what it viewed as trade-distorting practices in the European states, such as producer subsidies, discriminatory government procurement practices and technical standards. The Tokyo Round produced a new and comprehensive regime governing NTMs. GATT signatories signed on to new rules about the use of customs valuation, import licensing procedures, anti-dumping, technical standards, government procurement, subsidies and countervailing duties (Grieco 1990).

Just how trade-distorting are NTMs, and how effective were GATT's efforts to reduce this form of protectionism? NTMs are difficult to measure, and quantitative studies of their incidence and impact are limited. Milner (1988) claims that in the 1970s 30% of American manufactured imports were affected by NTMs, yet she maintained that they had "limited protectionist effects". More recent quantitative work suggests otherwise. A new OECD study uses survey responses of 5,500 EU firms to construct estimates of the trade-distorting impact of NTMs in trade in various sectors between the EU, the US, and Japan (OECD 2011). The estimates, presented in Table 5.1 below, provide ad valorem equivalents of the cost of NTMs on the prices of goods within a sector. Ad valorem

equivalents estimate the tariff rate that is equivalent to the price increase imposed by the NTM.

Table 5.1: Ad Valorem equivalents of overall levels of estimated NTMs on trade by sector, 2009

Sector	EU-US	United States-EU
Travel	36	18
Transport	40	26
Financial Services	30	21
ICT	20	19
Insurance	29	39
Communication	45	27
Construction	45	37
Other business services	42	20
Personal, cultural and recreational services	36	35
Chemicals	46	53
Pharmaceuticals	34	45
Cosmetics	48	52
Biotechnology	46	50
Machinery	51	36
Electronics	31	40
Office, information and communication equipment	38	32
Medical, measuring and testing appliances	49	44
Automotive industry	35	32
Aerospace and Space industry	56	55
Food and Beverages	45	34
Iron, Steel and Metal products	35	24
Textiles, clothing and footwear	36	49
Wood and paper, paper products	30	47

Source: Estimation based on Ecorys study (2009), Dee et al (2011).

It is clear from the table above that in 2009, the effect of NTMs on the prices of goods and services traded between the US and the EU was quite significant. EU-produced medical appliances were subject to US-imposed NTMs at a level equivalent to a 49% tariff, and goods in several other sectors were subject to similarly high NTM-related costs.

The OECD report also demonstrates that there is significant variation in trade-related costs in 2009 both across countries and across sectors, as shown in Table 5.2 below.

Table 5.2: NTM and Tariff costs by country and sector, 2009

	NTM Trade Related Costs	Tariffs
Motor vehicles		
Brazil	27.2	15.5
Canada	2.6	3.8
China	33.9	20.4
European Union	17.1	8.1
India	27	17.2
Korea	20.5	8.1
Russia	34.3	15.3
United States	14.9	2.3
Processed Foods		
Brazil	39.5	14.1
Canada	23.3	18.5
China	44.8	13.7
European Union	30.1	21.3
India	36.5	48.1
Korea	37.9	33.5
Russia	69.1	15.7
United States	49.5	6.4

Source: OECD 2011.

What the new data suggests is that despite multilateral tariff reductions in the past several years, and low tariff levels that in many cases may seem insignificant, there remain substantial opportunities for governments to manipulate trade policy, especially via NTMs, in a way that produces highly protectionist results. Even tariff rates remain

quite variable, and they remain higher in many cases than one might expect, given the strong free-trade rhetoric among the developed countries especially.

Several significant puzzles emerge when considering these features of the global trading regime. Was liberalization as "painless" for firms, workers and industries in the developed countries as is often claimed, or does the rise of NTMs suggest that protectionist pressures remain highly charged in these countries? What explains variation in protection at the national level? And finally, what explains variation in protection at the sectoral level? In the next section I develop an argument linking intra-industry trade to some of the variation we observe in trade policy outcomes across OECD countries.

Intra-Industry Trade and Protection

Intra-industry trade is often invoked as one reason why trade liberalization among developed economies is relatively smooth and painless (Milner 1999, Verdier 1998, Lipson 1982). It has also been used to explain why trade liberalization among some trade partners is less contentious than among others. Gawande and Hansen (1999) argue, for example, that trade between the US and Europe has been less controversial than US-Japan trade because a much higher percentage of trade between the US and the EU countries is intra-industry. The frequent assertions that intra-industry trade a) causes fewer adverse income effects than inter-industry trade, and b) has paved the way for easy

liberalization among capital-rich countries have been too often left untested. These claims have also prompted recent researchers to go "looking for the losers" from intra-industry trade (Somjee 2012).

In the last chapter, I argued that the "losers" of intra-industry trade are laggard, small, non-exporting firms in industries that compete with imports but whose leading firms export as well. Recent work from economists has demonstrated this empirically (Amiti and Davis 2012). Given that there are real losers from the liberalization of trade in IIT industries, the claim that the rise in intra-industry trade is responsible for easy liberalization must be probed. A few political scientists have attempted to theorize and measure the impact of IIT on trade policy outcomes, and they come to a variety of conclusions. Marvel and Ray (1987) and Alt et al. (1996) expect protection to decrease as a result of more lobbying for openness by leading firms and sectors that gain from the enlarged market opportunities under IIT. Gilligan (1997) dissents, and provides evidence to support his claims that protection will rise as monopolistic firms lobby for protection of their particular product varieties. Kono (2009) argues that IIT will have no effect on trade policy except where electoral institutions privilege narrow interests, in which case IIT will lead to higher levels of protection.

These analyses reach contradicting conclusions, and two of them are limited to the US case. In this section, I build on my findings from Chapter 4 about the effects of intra-

industry trade on trade policy coalitions to develop hypotheses about its effect on trade policy outcomes. In Chapter 4, I found that in the US, higher intra-industry trade is associated with more trade policy lobbying undertaken by individual firms relative to industry-based trade coalitions. I argue that this is a result of the heterogeneous nature of trade preferences among firms in sectors with high levels of IIT. I also found that total lobbying expenditures increased as IIT increased. Firms in these industries spend more money lobbying than firms in industries characterized by more inter-industry trade.

What can we expect will be the policy impact of this new political landscape? If individual firms become the primary political actors, as opposed to class- or industry-based coalitions, two questions arise. The first is, what kind of trade policies will these firms advocate? And second, how successful will they be in translating their preferences into policy outcomes?

Tariffs

First, I expect that the leading, exporting firms in IIT industries will prefer liberal trade policies, while the smaller, non-exporting firms will prefer protectionist policies. I expect that both types of firms will be politically active, and results from Chapter 4 show that they are more likely to lobby alone for their preferred trade policies than to form coalitions. The logic here is that existing industry coalitions are less likely to take a strong

trade policy stance due to competing preferences among their members, and new coalitions may be more costly to form, at least in the short-term, than lobbying alone.

While conventional wisdom in the trade policy literature holds that groups supporting freer trade lobby less than protectionists, I demonstrated that in Chapter 4 that lobbying expenditures are higher in IIT industries, and I argue that this is because exporters who depend on foreign market access must become politically active in order to counter the protectionist influence of small, non-exporting firms. This protectionist lobby is much less active (or nonexistent) in comparative advantage industries in which there are few imports and heavy export dependence (such as arms manufactures and some chemicals and machinery, in the US). Faced with competing lobbies, I expect that trade policymakers are more likely to support tariff reductions (or oppose tariff increases) for two reasons.

First, many studies of trade policy assume that national policymakers hold free-trade preferences but adopt protectionist policies when they expect to be rewarded electorally for taking a protectionist stance.[4] According to Ikenberry, Lake and Mastanduno, these studies view the preferences of national policymakers as "partially, if not wholly distinct from the parochial concerns of either societal groups or particular government institutions, and are tied to conceptions of the 'national interest' or the

[4] This is the assumption held by those ascribing to the presidential liberalism thesis.

maximization of some social welfare function" (1988:10). If we assume that policymakers hold their own free-trade preferences, and that competitive, politically powerful firms that employ large numbers of people are actively lobbying for open trade rules, it is reasonable to expect elected officials to supply trade openness. Second, in IIT industries whose firms hold competing preferences, policymakers may be willing to side with the free-trading lobby on tariff rules because they know they have the ability to compensate losing, protectionist firms with non-tariff measures of protection.

For these reasons, I expect that tariffs will be lower in industries with high IIT than in import-competing sectors (in other words, comparative disadvantage industries with few exports that are subject to import competition, such as apparel or footwear in the US). An increase in IIT in an import-competing sector is essentially an increase in exports. I expect exporting firms to demand tariff reductions, undermining industry consensus behind protection. Thus, as IIT increases in an import-competing sector there will be greater demand for liberalization. However, I don't expect changes in IIT to influence tariff levels in exporting sectors with low levels of import competition. In these comparative advantage industries, tariffs will be low because exporters benefit from reciprocal low tariffs in their export markets. An increase in IIT in an exporting industry is effectively an increase in import competition. If firms in these industries demand

protection from this increasing import competition, I expect that they will demand non-tariff measures of protection.

> H1: In import-competing sectors, as intra-industry trade increases tariffs will decrease.

Non-Tariff Measures of Protection

I expect that leading firms in IIT industries will be strongly in favor of low tariffs, because these firms depend heavily on foreign market access. Additionally, these firms often source inputs from abroad and benefit from low tariffs on imports. At the same time, these firms may have an interest in securing non-tariff government support in the form of export subsidies, antidumping compensation, import licensing or tax refunds for exporters (to name a few examples of NTMs). Given the competing interests of firms (and workers) in IIT industries, we might also expect that policymakers will compensate the losers of openness with protection of the non-tariff variety. NTMs can be applied to support both specific producers as well as an entire industry, so rent-seeking policymakers may find a way to offset the costs of tariff reductions with non-tariff protections for smaller firms and their workers. In IIT industries, firms and associations may anticipate more success in lobbying for non-tariff forms of protection than for tariff protection, so

they may target more of their efforts on the policymakers and agents that design and provide NTMs.

In the US, the trade policy literature asserts that members of Congress are very active in bureaucratic decisions by regulatory agencies such as the International Trade Commission (ITC) and International Trade Authority (ITA) over antidumping protections. Drope and Hansen (2004) and Hansen and Prussa (1996) argue that members of Congress attend ITC hearings and argue in favor of protection for particular firms and industries, discuss ITC rulings in Congressional committee meetings, and introduce legislation proposing changes in the rules governing the way that ITC and ITA operate, with the aim of securing greater protection for firms and industries. Evidence indicates that the ITC and ITA are themselves susceptible to interest-group pressure, as representatives from firms and industry are routinely present at hearings (Drope and Hansen 2004). The congressional dominance literature and principal-agent approaches, from the broader American politics literature, provide further theoretical and empirical support for the claim that bureaucratic authority over trade policymaking does not ensure autonomy from the influence of special-interest groups (Wood 1988, Shepsle and Weingast 1984.) Thus, at least in the American political context, it is reasonable to hypothesize

that there is a link between Congressional decisions about tariff rates and bureaucratic decisions about non-tariff measures, with the one a compromise for the other.[5]

Turning to the European context, trade authority in the EU is permanently delegated to the bureaucratic European Commission, with the European Parliament retaining the power to approve or reject negotiated trade bills. In the past, scholars of the European Union have argued that models of political competition and lobbying developed in the American politics literature are not applicable in the EU context, but more recent scholars of the European Union now argue that while an interest-group infrastructure was slow to build in Brussels, special-interest influence is alive and well at the European level. Dür (2008) argues that EU scholars need to bring "economic interests back in" to the study of trade policymaking in Europe. He provides evidence of heavy consultation between business representatives, national governments, and the European Commission during two rounds of WTO negotiations, and in all cases EU negotiators took positions advocated by concentrated business interest groups rather than diffuse, public interest advocacy groups. Other recent work on lobbying in the EU finds that it is now a flourishing fixture of Europolitics and that the European Commission's reliance upon

[5] In the US, Congress votes every three years on whether to delegate trade policy negotiation authority (aka tariff policy) to the president, and Congress is heavily lobbied about this decision, while also heavily lobbied when passing major trade legislation itself. It has usually voted to do delegate, though not always. Congress retained trade policy authority throughout the Clinton presidency, from 1994 to 2002, when they voted to delegate to President Bush. Ehrlich (2008) argues that in periods when Congress retains trade policy authority, the amount of lobbying is higher.

private interest groups for information leave it susceptible to "regulatory capture" (Greenwood 2011, Coen 2007).

If leading firms are strong advocates of tariff reduction in industries subject to intra-industry trade, there are two channels through which I expect to see significant demands for non-tariff forms of protection in IIT industries. First, leading exporting firms may be highly efficient, yet competition remains fierce in manufactured goods industries with differentiated products and lots of consumer choice. These industry leaders still must compete with imports, and they have an incentive to seek protection via non-tariff channels that are less susceptible to detection by foreign governments or firms. Trade agreements and tariff reductions are typically reciprocal. Both parties to the agreement must reduce their tariffs to a negotiated level, and if one party defects from the agreement and raises tariffs, the trading partner is likely to respond with retaliatory tariff hikes. Non-tariff measures are more difficult for foreign governments to identify (though there are certainly high-profile trade disputes involving NTMs being waged in the WTO, the long-running Airbus-Boeing dispute being a prime example). Second, the smaller non-exporting firms that lose from increased import competition under liberal trade rules may actively seek non-tariff measures of protection for their products as well. These firms are unlikely to win political battles over tariff levels, so they may be more likely to seek other forms of protection for their products.

For these reasons, I expect to see higher non-tariff barriers of protection in high-IIT industries than in comparative advantage exporting industries with low import competition. As for firms in import-competing industries (low-IIT industries), they may be more successful at securing high tariffs and lobby less for non-tariff protections. As many existing studies of trade politics (and interest-group politics in general) show, legislators may be more vulnerable to special-interest lobbying than bureaucrats or executives. Thus, in import-competing industries where firms and associations have a choice in whether they lobby for tariff protection, NTM protection, or both, they may find the costs of lobbying to be lowest when the target is an elected legislator with a smaller constituency size than the national bureaucrat, appointed to represent the interests of the country as a whole.

In sum, the heterogeneous effects of IIT on firms incentivizes more firm lobbying for NTM protection in IIT industries. Firms in exporting industries will demand less NTM protection than firms in industries subject to two-way trade, and firms in import-competing industries (with low IIT) may be more successful securing tariff protection from rent seeking elected officials and less likely to seek NTM forms of protection. This yields my second hypothesis:

> H2: In sectors with higher intra-industry trade, non-tariff barriers to trade will be more significant.

Research Design

To test my hypotheses, I estimate the following models, where two dependent variables, tariffs and non-tariff measures of protection, are regressed on the independent variables: intra-industry trade, revealed comparative advantage, firm size, output, trade dependence, and particularism.

$$\text{Tariff}_i = \alpha + \beta\text{IIT}_i + \beta\text{RCA}_i + \beta\text{FirmSize}_i + \beta\text{Output}_i + \beta\text{TradeDep}_i + \beta\text{Particularism}_i + e_i$$

$$\text{NTM}_i = \alpha + \beta\text{IIT}_i + \beta\text{RCA}_i + \beta\text{FirmSize}_i + \beta\text{Output}_i + \beta\text{TradeDep}_i + \beta\text{Particularism}_i + e_i$$

I have compiled a cross-national panel dataset including sector-level data from 28 manufacturing sectors from 1991-2004. I limit the sample to twelve high-income democracies. The unit of analysis in this study is the sector-country-year. I measure sectors at the 3-digit level of aggregation, according to the International Standards Industrial Classification system, Revision 2. Although there would be benefits to using more finely disaggregated sector data, as in Chapter 4, I chose three-level data because it allows me to analyze data over a fourteen year period rather than a single year, which is all that is available at finer disaggregations. Additionally, three-level sector data is still able to capture meaningful intra-industry trade. Categories include apparel, footwear, furniture, tobacco products, transport equipment, electrical and non-electrical machinery, among others.

My sample is limited to high-income OECD democracies (high-income democracies as classified by the World Bank during the years of my sample, 1991-2004).[6] Limiting the sample by income is very important theoretically. The arguments that economists make about the relatively lower adjustment costs of IIT, compared to endowments-based (inter-industry) trade, rely on the assumption that the trade occurs between countries with similar factor endowments. Intra-industry trade between these countries is not based on comparative advantage, and as a result it is not expected to demolish entire industries in the less competitive country. When IIT occurs between countries with very different factor endowments, it should be as disruptive as endowments-based trade to the industry with higher factor costs, and it should also not be sustainable. In the medium-term, this type of trade will disappear as producers in the more expensive country are forced to exit. Essentially, in the medium-term, intra-industry trade between two countries with different factor endowments will become inter-industry trade.

In Kono's (2009) cross-national analysis of intra-industry trade and protection, he did not find that the two were related except in countries with electoral institutions that favor small, concentrated constituencies. In these countries, policymakers are responsive to

[6] My sample includes Australia, Canada, Cyprus, Germany, Iceland, Japan, Korea, Malta, New Zealand, Norway, Switzerland, and the United States. I include only one EU country because trade policy is made at the EU level, so each member state has identical protection levels. Malta and Cyprus were not EU members during the time period of this sample. I chose Germany to represent the EU because, as the EU's biggest manufacturing economy, I expect it to wield as large an influence over trade policy as any other member state, if not the largest influence. Results are similar whether Germany is included in the sample or not.

what Kono assumes is protectionist lobbying by firms in IIT industries, and then he finds that as IIT increases, protection increases as well. However, Kono includes all available countries in his sample, which means that his analysis includes countries with widely differing factor endowments at very different levels of development. It is likely that he is therefore capturing trade processes that do not conform to the assumptions of intra-industry trade theory. This is an important theoretical reason for excluding low- and middle-income countries from the sample. South-South intra-industry trade is empirically rare, because less developed countries tend to export primary materials and commodity goods that are not highly differentiable (OECD 2002). North-South intra-industry trade is also relatively infrequent, as countries at different levels of development tend to specialize in the production of different types of goods. When North-South IIT does occur, it is likely to be disruptive and to have similar distributional effects to inter-industry trade among these countries. This is one reason for the significant interest-group lobbying against liberalization of tariffs between the US and Mexico during the NAFTA negotiations. Rubber and glass manufacturers were strongly opposed to tariff reductions in the textile industry, as they anticipated heavy import competition from Mexico (Chase 2009: 202). Labor unions in low-skilled US industries such as apparel and textiles were also strongly opposed to tariff reductions, fearful of jobs moving south of the border.

By limiting my sample to high-income countries, the intra-industry trade that I observe is most likely to be North-North trade. While bilateral trade data would be necessary to completely control for major differences in factor endowments, we know that empirically IIT is highest among the OECD economies and lowest among South-South or North-South trading partners (OECD 2002). Put another way, American exports in high-IIT industries are most likely destined for other wealthy countries, and vice versa. This is because intra-industry trade is most likely to occur with manufactured goods, and most specifically with the most capital-intensive, sophisticated manufactures. These goods are also exported to low-income countries, of course, but low-income countries rarely export these goods to high-income countries. Thus, without bilateral trade data, excluding low- and middle-income countries from the sample is the best way to ensure that the intra-industry trade captured in my analysis conforms to the assumptions of intra-industry trade theory on which my hypotheses are based.

I have two dependent variables in this study: Tariffs and non-tariff measures of protection (NTMs). Each is measured in several ways. I estimate the influence of intra-industry trade on four measures of tariffs: simple applied tariffs, weighted applied tariffs, simple Most Favored Nation (MFN) tariffs, and weighted MFN tariffs. Each measure is an average tariff applied to all goods within the 3-digit ISIC category. Each is reported in percentage points. Simple tariffs measure the tariff rate applied to goods entering the

country, taking preferential tariff agreements (PTAs) into account when available. Weighted tariffs are weighted by the import share of the various goods within the tariff category. MFN tariffs are the average tariff applied to goods from MFN countries. No measure perfectly captures actual trade restrictiveness. Each one is biased to some extent--either over- or underestimating trade restrictiveness, which is why it is important to include all measures in the analysis.

My second dependent variable is NTMs. I include several measures of NTMs. Core NTM frequency ratio is the percentage of imports within a sector category that carry an unfair protectionist impact, as defined by Nicita and Olarreaga (2007). NTM core coverage ratio measures the percentage of tariff lines subject to NTMs. The simple ad-valorem equivalent (AVE) measures the impact of core NTMs in terms of the equivalent tariff rate, and the weighted AVE is the same measure, weighted by imports.

My key independent variable is Intra-Industry Trade. As described in Chapter 4, I employ the Grubel-Lloyd index, which is standard in the literature:

$$\mathrm{IIT}_i = 1 - \frac{|X_i - M_i|}{(X_i + M_i)}$$

where X_i and M_i are measures of exports and imports of industry i, respectively. I hypothesize that as intra-industry trade increases, tariff measures of protection will decrease. In contrast, I expect that NTMs will increase as intra-industry trade increases.

It is important to note that intra-industry trade is endogenous to protection. High tariff barriers depress imports, which are a component of the intra-industry trade measure. It is difficult to find sector-level variables in a cross-national format that could serve as instruments. Thus, I have created an instrument for IIT similar to that which Kono (2009) used in his analysis. I instrument a sector's IIT with the average value of the same sector's IIT in the two countries with the closest GDP per capita to the original country. This instrumental measure is relevant to my IIT variable (F-statistic=43.31). This makes sense theoretically as the high-income economies in my sample have similar factor endowments (abundant in capital and skilled labor) and are likely to specialize in the production of similar goods, with similar export and import profiles. This instrument is also uncorrelated with and exogenous to protection. Protection in one country should not influence levels of intra-industry trade in other countries.

I include several other independent variables to control for alternative explanations and other factors that might influence protection. Revealed Comparative Advantage (RCA) measures whether an industry is primarily export-oriented or import-competing, and it controls for the argument that protection will be lower in exporting industries than import-competing industries. RCA ranges from -1 to 1. A negative score indicates that an industry primarily competes with imports, and a positive score indicates export orientation and low import competition. Firm Size measures the average number of

employees at firms within the sector. We might expect that with as firm size increases there will be greater labor organization and greater political influence. Output controls for sector size, and for the argument that bigger sectors, which are likely to be export-oriented, are more able to secure low tariffs via political influence and lobbying capabilities. I include one national-level trade variable, Trade Dependence, to control for the fact that countries that are more dependent upon international trade are likely to have more liberal trade rules. Trade dependence is measured as exports as a percentage of national GDP.

Finally, I include two national-level variables that allow me to test some of the leading institutional explanations of trade policy. As discussed earlier in this chapter, scholars taking an institutional approach to trade policy have developed theories about the influence of a host of political variables on trade outcomes, ranging from electoral rules to policymaking process to the size of legislative districts. While I cannot include a long list of political variables in this analysis, I use two variables that encompass the logic behind many institutional analyses: district magnitude and particularism. In different ways, these two measures indicate the responsiveness of elected officials to narrow, special interest groups. District Magnitude measures the size of legislative districts. Particularism is an index composed of three measures of electoral particularism related to party strength and the degree to which voting is party-based or candidate-based. If the standard

argument from the trade policy literature is correct, protection will increase as district size decreases. Protection will also increase as the particularism measure increases. However, if IIT incentivizes more active free-trade lobbying, we could observe the opposite effect.

Data

The sector-level protection data used in this study comes from Nicita and Olarreaga's (2007) dataset, which includes several types of tariff measures and nontariff measures as described above. The main source of this data is UNCTAD's TRAINS database. This data is available at several industrial classification levels. Tariff coverage in my data sample is very good but NTM coverage is severely limited, entirely unavailable for most years of the dataset, though it is available for one to two years in nearly all countries, for all sectors. Scarce data on NTMs is a well-noted problem in the trade policy literature and it is a serious one, as Nicita and Olarreaga estimate that NTMs account for up to 70% of global protection.

Summary statistics of my dependent variables show that there is substantial variation on tariff levels, depending on the measure. The applied tariff measures, which incorporate PTAs, are two percentage points lower, on average, than MFN tariff levels. There is also great variation in the maximum tariff rates. For non-tariff measures, there is similar variation across measures.

Table 5.3: Summary Statistics - Tariff Rates and NTMs

	Obs	Mean	Std. Dev	Min	Max
Simple Applied Tariff	2950	4.71	8.84	0	157.12
Import-Weighted Applied Tariff	2950	4.09	5.72	0	55.3
Simple MFN Tariff	2857	6.30	19.37	0	350
Import Weighted MFN Tariff	2851	6.43	19.52	0	350
Simple Core NTM (%)	308	8.19	17.41	0	93.33
Weighted Core NTM (%)	308	9.70	20.81	0	99.73
Simple AVE	282	4.05	8.58	0	48.8
Weighted AVE	282	3.64	8.62	0	56.64

I constructed my trade variables--Intra-Industry Trade and Revealed Comparative Advantage, as well as my IIT instrument--from import and export data in Nicita and Olarreaga's (2007) dataset, originally from the UN's COMTRADE database. IIT ranges fully in my sample from 0 (either no imports, or no exports) to 1 (completely balanced imports and exports), with an average value of .52. RCA also ranges fully from -1 to 1, with a mean of -.23, a value which indicates heavy import competition. My control variables Firm Size and Output also come from Nicita and Olarreaga, originally from UNIDO's Yearbook of Industrial Statistics. Trade Dependence data is from the World Bank's World Development Indicators.

The two political institutional variables, District Magnitude and Particularism, were originally developed by Carey and Shugart (1995). Wallack et al. (2003) used these measures to compile a cross-national dataset of particularism spanning the years 1978-2001 in 158 countries. As these institutional variables did not change over time in nearly all countries in my sample, I interpolated values to extend the data to 2004, the last year

of my sample. In Korea and Japan, the two cases where values on these variables did change over time (besides New Zealand, which had a one-time institutional change in 1996 when electoral reforms took effect), the changes were slight and gradual. In these cases I used 2001 values for the years 2002-2004.

Results

The first step in my analysis is to establish the validity of my instrument for my key endogenous regressor, Intra-Industry Trade. I employ a two-stage least squares approach with the instrument described earlier in this chapter. To test for relevance, I computed the first-stage F-statistic by regressing my instrument (average value of sector-level IIT from the two countries with the closest GDP per capita to the original country) on my endogenous regressor (IIT). The F-statistic is 43.73, which indicates that my instrument is correlated with the endogenous regressor and is a relevant instrument. The instrument also passes other available diagnostics for relevance (Anderson-Rubin Wald test).

The results of the 2SLS regressions (reported in Appendix A and Appendix B) reveal very large standard errors on the instrumented IIT coefficients, rending these estimates unreliable. I employed the Hausman-Wu test after the regressions to test whether my IIT variable is in fact endogenous to protection in my sample, consistent with

my priors. The results of this test indicate that there is no evidence that IIT is endogenous to protection and that I can accept the null hypothesis that it is in fact exogenous (the p-value of the test statistic = 0.44). Since it is preferable to estimate an ordinary least squares equation rather than 2SLS when regressors are exogenous, I repeated the analysis on tariffs with my non-instrumented IIT variable. I estimate these models with a random-effects specification. This makes more sense than fixed effects when considering the nature of my data. My data is hierarchical and my level-one unit is the country-sector. With fourteen years of data, there is a maximum of fourteen observations per country-sector, and in most units there are fewer observations (the average is 10 observations for each country-sector). With such a small number of observations per unit, fixed effects is highly sensitive to variance across units, producing estimates of x on y that may diverge considerably from their true values. Clark and Linzer (2013) argue that when there few observations per unit, a random-effects estimator tends to produce better beta estimates.

There is also random variation at the country unit, but the variance of country mean tariffs is much smaller than the variance of country-sector mean tariffs (variance at the sector level within countries accounts for approximately 82% of the total error variance in my models). Unmeasured sector-specific characteristics, such as factor intensities, are likely partially responsible for the varying levels of tariff protection across

sectors within the same country. Some sectors, such as tobacco and other agricultural sectors in many countries, have tariff levels far above the mean. Other sectors, such as some of the machinery sectors, have tariff levels below country means. I expect that increases in IIT relative to endowments-based trade will lead to decreases in protection across all sectors, but some sectors still have much higher tariff levels than other sectors in the same country, and these are the sector-level random effects.[7] A random effects specification can also handle my country level variables (district magnitude, particularism and trade dependence) that do not vary within country-sector-units. Fixed effects is not suitable to estimate the within-unit effects of these unit-invariant covariates and produces unreliable estimates (Clark and Linzer 2013:10).[8]

I report the results of the random-effects GLS analysis below. In all models, I include a sector dummy and robust standard errors, clustered at the country-sector level, to control for non-independent sectoral observations within countries, as described above. Results (reported below in Table 5.4) show that intra-industry trade has a negative and significant effect on three of the four tariff measures. When intra-industry trade is higher, tariff rates tend to be lower. The coefficients on tariffs are much smaller than in the 2SLS

[7] One drawback of random effects is that it can introduce bias into the estimates. This bias is minimized if the unit effects are uncorrelated with the covariates, which is approximately the case with my data.

[8] Additionally, the presence of unit-invariant covariates in my model renders the results of the Hausman test unreliable (Troeger 2008). The Hausman test is the most common test for deciding between fixed and random effects. It selected fixed effects as the best specification for my data, but all other postestimation diagnostics and theoretical reasoning point to random effects as the better specification.

Table 5.4: Intra-Industry Trade and Tariffs (GLS with random effects)

	Simple Applied Tariffs	Import Weighted Simple Applied Tariffs	Simple Average MFN Tariff	Import Weighted MFN Tariff
Intra Industry Trade	-2.787**	-2.170**	-3.242**	-4.465*
	(1.208)	(1.176)	(1.558)	(2.244)
RCA	0.098	-0.217	2.805	3.765
	(1.114)	(0.837)	(2.896)	(3.543)
Firm Size	-0.811**	-0.695***	-1.551	-1.768
	(0.389)	(0.191)	(0.905)	(0.992)
Output	-9.90e-09**	-1.13e-08***	-9.42e-09***	-8.75e-09***
	(4.24e-09)	(2.55e-09)	(7.17e-09)	(7.10e-09)
District Magnitude	0.145**	0.061	0.064	0.111
	(0.060	(0.042)	(0.075)	(0.073)
Particularism	1.998***	1.507***	2.505	2.731
	(0.442)	(0.284)	(1.328)	(1.399)
Trade Dependence	-0.082***	-0.105***	-0.245***	-0.246***
	(0.032)	(0.020)	(0.074)	(0.085)
Sector dummy	8.591***	6.179***	16.874**	16.644
	(2.611)	(1.961)	(8.948)	(8.675)
Observations	1545	1545	1535	1535
Chi2, p > chi2	84.10, (0.000)	77.96, (0.000)	91.69. (0.000)	59.41, (0.000)

*p < .1, **p<.05, ***p<.01. All standard errors are heteroskedasticity robust.

models and are much more appropriate to the scale and range of these measures. Sector size, as measured by Output, is negative and significant in two of the models, indicating that larger industry size is associated with lower tariffs. The Firm Size variable is negative and significant in two of the models, suggesting that industries with larger average firm size tend to be in sectors with lower tariff protection. A country's level of trade dependence also influences its levels of protection. In all models Trade Dependence was negatively related to tariffs: as we would expect, as trade dependence increases, tariffs decrease. The two political variables were significant in some of the models. District Magnitude was positive in all models though significant in only one. This is a surprising finding, as it suggests that as district size increases, tariffs increase. Conversely, as district size decreases, trade rules are more liberal. This is the opposite of what much of the trade policy literature has found. Particularism, on the other hand, performs as the literature generally expects: it was positive in all models and significant in two models, indicating that when political and policymaking institutions are more receptive to narrow, special-interest groups, tariff rates tend to be higher. Finally, the sector dummy is positive and significant in three models. Agricultural and apparel sectors tend to be more protected than more capital-intensive sectors. I will discuss the specific characteristics of the four different tariff measures and the implications of these findings in the next section.

The estimates on NTM measures are much less reliable, as the number of observations was drastically reduced in these models (ranging from 214 to 233). These results (reported in Appendix C) should be interpreted with extreme caution. Intra-Industry Trade flipped signs and was positively related to NTMs in all four models, though it never reached significance. Particularism was negative in all models and significant in one, suggesting that electoral institutions that are more responsive to special interests may be associated with lower NTM protection. Finally, the sectoral dummy is positively signed in all models, as expected, though not always significant.[9]

Next, I split my sample into subsamples in order to test whether IIT will have different effects on protection depending upon whether industries are more import-competing or export-dependent. This sub-sampling is important methodologically because the measurement of the IIT variable is such that when it takes on a low value, this gives no information as to whether the industry is primarily import-competing (with few exports), or export-oriented (with few imports). When I split the sample into groups, an export-oriented group and an import-competing group, I can assess whether IIT's influence on protection is different in these two groups.[10] I define import-competing

[9] I also repeated the random-effects analyses using the instrumental variable for IIT. This variable was negatively signed in all models though it never achieved significance. I do not report results here.

[10] One might wonder if the export-oriented groups do not compete with imports because they are in heavily protected sectors. This is partially true. The two MFN tariff measures are nearly double the average rates for the full sample of industries. The applied tariff rates, however, which take preferential tariff rates into account, are comparable to the applied tariff rates for the full sample.

industries as those industries with a real comparative advantage value of -0.3 or less. I define export-oriented industries as those with an RCA value of 0.3 or more. (Restricting the export-oriented industries even further reduces the sample size too greatly.)

I report the results of these analyses in Table 5.5 below. Among the import-competing industries, IIT is negative and significant in all models. This means that holding all else constant, an increase in IIT is associated with lower tariffs even in industries subject to heavy import competition. Particularism is positively associated with tariffs in all models: in countries where electoral systems are more responsive to interest-group activity, tariffs tend to be higher, all else equal. The sector dummy variable is significant and positive in all models as well, indicating that among the developed economies in my sample, agricultural and apparel industries are better protected. As I hypothesized, the effects of IIT are different among export-oriented industries with low import competition. Unfortunately, small sample size (n=213) did not yield meaningful results on the two MFN models; I cannot reject the null hypothesis that the effect of the variables on my sample are statistically different from zero. For the applied tariffs, changes in IIT were not significantly related to changes in tariffs. District Magnitude and

Table 5.5: IIT and Tariffs (GLS with Random Effects) on Subsamples

	Simple Applied Tariffs		Import Weighted Simple Applied Tariffs		Simple Average MFN Tariff		Import Weighted MFN Tariff	
	Import-Competing	Export-Oriented	Import-Competing	Export-Oriented	Import-Competing	Export-Oriented	Import-Competing	Export-Oriented
Intra Industry Trade	-4.209***	-1.933	-3.661**	0.522	-4.272***	-5.407	-3.370**	-8.156
	(1.184)	(5.595)	(1.439)	(3.046)	(1.444)	(5.168)	(1.590)	(6.221)
Firm Size	-4.00e-08***	2.82e-08	-3.36e-08**	5.96e-09	-4.95e-08***	7.98e-08	-4.77e08***	8.36e-08
	(1.39e-08)	(1.90e-08)	(1.62e-08)	(5.02e-09)	(1.58e-08)	(7.83e-08)	(2.08e-08)	(7.86e-08)
Output	-0.362	-3.855	-0.430*	-1.150**	-0.231	-8.357	-0.409	-9.341
	(0.238)	(2.004)	(0.241)	(0.490)	(0.257)	(6.581)	(0.276)	(6.874)
District Magnitude	-0.032	1.052***	0.005	0.452**	-0.074	0.943	-0.014	1.035
	(0.056)	(0.383)	(0.052)	(0.195)	(0.062)	(0.627)	(0.061)	(0.631)
Particularism	1.388***	6.223**	1.616***	2.057***	1.087**	12.250	1.194**	13.149
	(0.416)	(2.555)	(0.437)	(0.419)	(0.446)	(8.862)	(0.466)	(9.191)
Trade Dependence	-0.119***	-0.243	-0.105***	-0.005	-0.156***	-0.651	-0.166***	-0.789
	(0.026)	(0.152)	(0.026)	(0.036)	(0.029)	(0.453)	(0.031)	(0.528)
Sector dummy	7.083***	21.402***	6.565**	9.126**	7.145**	49.962	6.276**	49.814
	(2.821)	(7.997)	(3.147)	(4.251)	(3.058)	(33.729)	(3.142)	(31.842)
Observations	685	218	685	218	685	213	685	213
Chi2, p > chi2	70.85, (0.00)	18.69, (0.01)	51.20, (0.00)	55.05, (0.00)	64.49, (0.00)	7.32, (0.00)	57.36, (0.00)	8.17, (0.318)

*p < .1, **p<.05, ***p<.01. All standard errors are heteroskedasticity robust. Import-competing industries are defined as those with revealed comparative advantage of $\leq$ -0.3. Export-oriented industries are defined as those with revealed comparative advantage of ≥ 0.3.

Particularism are both positive and significantly related to the two applied tariff measures. These results seem contradictory, at least according to standard trade theory: we would expect smaller districts to be associated with higher tariffs, as rent seeking elected officials are more susceptible to special-interest capture. Particularism runs in the expected direction, however: in countries whose electoral institutions are more responsive to special interests, tariffs are higher, among the exporting industries with average tariff level.

Restricting the sample yields unreliable results for the NTM measures. With so few observations, F-statistics on three of the four models lose significance and standard errors become extremely large. I do not report the results here.

Discussion

The above analysis provides a look at how intra-industry trade influences protection in high-income democracies, across 28 manufacturing industries as well as in subsamples of export-oriented industries and import-competing industries. The results yield some interesting conclusions. First, the influence of IIT on tariffs was consistently negative, and this result held when controlling for other factors that should contribute to low protection, including specific sectoral characteristics, national trade dependence, and measures of institutional responsiveness to special-interest pressure. While I cannot claim

that intra-industry trade causes tariffs to fall, my findings provide some support for my arguments about the way this type of trade influences trade politics and policy.

Second, I hypothesized that in importing-competing sectors (heavy import competition with few exports), higher IIT would be associated with lower tariffs. My reasoning was that an increase in IIT in these sectors is likely to represent an increase in exports. As leading firms increase their exports, they are likely to pressure policymakers to cut tariff levels as a way to negotiate lower reciprocal tariffs in export markets. Additionally, policymakers may be willing to cut tariffs knowing that they have other venues (namely, NTMs) through which to compensate losing firms that do not export. My results provided some evidence to support this theory. On my subsample of import-competing industries, higher intra-industry trade was associated with lower tariffs on all tariff measures. Mean tariff levels on two of the four tariff measures (applied tariffs, which take preferential trading agreements into account) were slightly higher than average tariffs in the full sample, indicating some room for cuts. At the same time, results on the import-competing industry subsample show that in these industries, where national electoral institutions are more particularistic--more responsive to special interests--tariffs tend to be higher. While this seems like evidence for the standard trade policy argument that rent seeking politicians provide tariff protection as a way to improve their electoral prospects, it doesn't seem to support my theory that leading exporting firms that seek

lower tariffs are pressuring lawmakers to cut tariffs and winning these political battles. More research on the political behavior of exporting firms in IIT industries is needed.

My argument that increases in IIT should not influence tariffs in export-oriented industries also is supported by evidence. I found no relationship between IIT and tariff levels in export-oriented industries. I reasoned that in export-oriented industries, there is little incentive for exporters to lobby for low tariffs, and little incentive for losing firms to lobby for higher tariffs. In the first case, tariffs are likely to already be low, as exporters benefit from reciprocal low tariffs in foreign markets, and exporters may not believe that the benefits of deeper tariff cuts will outweigh the costs of lobbying. In the second case, losing firms that primarily compete with imports may calculate that the probability is low that costly political action will achieve higher tariffs. Additionally, they may expect a higher payoff from lobbying for NTM protection, and policymakers may be willing to grant this protection as a sort of compromise between competing firm interests. This line of reasoning seems plausible in the case of the applied tariffs, which are at low to average rates (3.7-6.7%), and even more plausible when considering that in these models, smaller district size is associated with lower tariffs, suggesting that elected officials supply low tariffs because powerful special interests demand it. However, higher particularism is associated with higher tariffs, a result that seems to run in the opposite direction. Also, my line of reasoning does not seem supported by the evidence on MFN tariffs, which are

nearly double (11-12%). There is certainly plenty of room for tariff cuts, so the existence of high tariffs, especially among WTO countries with stated commitments to reducing protection, seems to suggest that firms in these industries benefit from high MFN tariffs and successfully persuade policymakers to supply them with protection. Unfortunately, the small sample size does not allow me to reliably assess the influence of these variables on the two MFN tariff measures.

Finally, my second hypothesis was that as IIT increases, non-tariff measures will increase. The available data on NTM's proves insufficient to draw conclusions from this study with much confidence. On the full sample of industries, intra-industry trade was positively signed in all models, though it did not achieve significance. There were too few observations to yield meaningful results on the restricted samples. The consistently positive (though insignificant) finding on the full sample is still interesting and suggestive of the value of future research on the relationship between IIT and non-tariff forms of protection. My analysis found that industries characterized by larger average firm size do tend to enjoy greater NTM protection, and these same industries are associated with low tariff barriers. This very preliminary evidence fits with the theory that when tariff protection is not available, firm or industry actors seek NTM forms of protection, and it is provided by policymakers.

Conclusion

To conclude, this chapter examined the relationship between intra-industry trade and levels of protection in advanced industrialized democracies. I built on my findings from Chapter 4, where I showed that in the US, individual firms are more politically active than industry-based associations in industries with high intra-industry trade, and overall lobbying is higher in these industries as well. In this chapter, I used those findings to develop a theory of the way intra-industry trade may influence resulting outcomes as well. I considered not only firm preferences and incentives to lobby, but the role of political institutions in being receptive to pressure groups, and I considered how different policy options (tariffs vs. non-tariff forms of protection) might give rent seeking policymakers the ability to please each set of competing interests in IIT industries: leading, exporting firms could be supplied with low tariffs while losing, laggard firms could be compensated through non-tariff forms of protection that are less detectable by foreign competitors.

The findings in this chapter provide some support for this theory, namely in the finding that intra-industry trade is associated with lower tariff protection not only across all manufacturing industries in the sample, but also within the sub-group of import-competing industries that might be the industries most likely to demand and receive higher tariff protection. I also found preliminary evidence to support the theory that

exporters become politically active and lobby for protection in export-oriented industries also subject to intra-industry trade. The assumption that free-traders don't lobby has been longstanding in the trade policy literature. However, increasing import competition in export sectors could create a competing protectionist lobby that exporters must mobilize to overcome. This theory requires additional qualitative research to confirm or reject.

Despite some promising findings in this study, there are nevertheless some outstanding issues and weaknesses that must be addressed in future research to buttress confidence in my findings. First, although statistical tests indicated that my measure of intra-industry trade was not endogenous to my measures of protection, high protection does depress imports, which is a component of the IIT measure. At the sectoral level of analysis, it was difficult to find an appropriate instrument with cross-national coverage. My instrument, which is similar to that used in at least one existing study, struggled to achieve significance in my models, although it always ran the same direction as the non-instrumented variable. The next step of this research needs to find a solution to this issue.

Second, the analysis should be repeated on more fine-grained, disaggregated sector data. I chose to expand my study from the American to the cross-national context in order to examine the influence of intra-industry trade in different institutional contexts, but the tradeoff is that the industry categories are somewhat broad. They certainly

include some trade of quite different products within the same industry categories. With sectoral data that is too disaggregated, no intra-industry trade would be captured, but replicating the results of this study at the 4-digit sector level would be a worthwhile endeavor.[11]

Third, this study would also benefit from bilateral trade data. I have improved on past studies by excluding less developed countries from the analysis and limiting my sample to manufacturing sectors in developed countries. As most of the world's intra-industry trade occurs among the developed countries, limiting my sample in this way helps ensure that I am capturing trade among countries with similar factor endowments, a necessary assumption underlying the logic of intra-industry trade. However, bilateral trade data would perfectly ensure this. Finally, the existing large-n data on non-tariff measures is not sufficient to adequately test all of the arguments about NTMs that I made in this paper. This is a challenge that I hope to address in future qualitative research.

[11] My preliminary ventures into 4-digit sector data have yielded similar results as those reported in this study, but with fewer control variables at this point.

CHAPTER 6

CONCLUSION

This dissertation offers a theory of the relationship between the structure of international trade and the dynamics of trade politics. My primary goal has been to contribute to the distinguished branch of the trade literature in political science that uses economic insights about the winners and losers of trade to develop models of the domestic political alignments that will form for and against trade openness. I follow in a tradition of scholars who take international economic integration to be an exogenous process that redistributes incomes within society and, as such, creates coalitions for and against further trade liberalization.

The primary contribution that my analysis makes is in my explanation of new patterns in trade politics—primarily, the rise of the individual firm as a political actor—that the existing political science literature, based on older theories of international trade, struggled to explain. My model here is based on the newest economic theories of international trade. I have shown that the structure of trade has changed significantly in the post- World War II era, as the developed economies trade increasingly with other

developed economies for goods that they also produce themselves. This is a fundamental shift in trading patterns that demands new models of winners and losers and new theories about societal trade preferences, societal mobilization over trade policies, the structure of trade policy coalitions, and trade policy outcomes themselves. The leading economic-based theories of trade politics, such as the contributions of Rogowski, Frieden, and Hiscox and others after them who have sought to refine their models, are based upon economic models that do not and cannot explain intra-industry trade. The explanatory power of these analyses still stands, but their theories of trade politics only apply when trade is of the classic, inter-industry structure on which the older economic models were built. In this way, my analysis is complementary to these other leading contributions in the trade politics literature, rather than competing.

Theoretical Conclusions

In sum, my theoretical conclusions can be summarized as follows. I have argued that the economics of intra-industry trade—its sources and its distributional effects—change the structure of societal demands over trade policy in ways that undermine existing coalitions and are likely to facilitate further liberalization. In Chapter 2 I referred to the contributions of the "new trade theory" literature from economists such as Krugman (1979), Helpman (1981) and Dixit and Norman (1980) who demonstrated that intra-

industry trade is driven by economies of scale, increasing returns and consumer love of variety. I also brought in the most recent economic literature, currently known as the "new new trade theory", which demonstrates how the costs and benefits of trade fall on individual firms rather than on entire factor-owning classes or entire sectors (Melitz 2003, Bernard et al. 2007, Kasahara and Lapham 2013). In industries subject to two-way trade, exporting firms gain from liberalization while domestically oriented firms suffer losses.

Building on these insights, I developed a model of the political implications of intra-industry trade. In Chapter 3 I argued that intra-industry trade undermines industry consensus over preferred trade policy, pitting exporters against importers within the same industry. The breakdown in industry preferences makes it difficult for industry associations to take a strong position when trade policies are negotiated, and firms instead take up the lobbying burden alone. Exporters have an incentive to lobby for liberalization in the context of reciprocity-based trade negotiations, providing a counterweight to protectionist demands being made by import-competing firms within their industry.

My theoretical model relies not only on economic theories of intra-industry trade, but on political science insights about the collective action costs of coalition-based political activity. I used Olsonian arguments about the difficulties in mobilizing groups to undertake costly political activity to support my claims that as intra-industry trade

undermines industry consensus, trade policy lobbying is likely to be undertaken by individual firms rather than new coalitions.

The rise of individual firm lobbying over trade policy has important implications for trade policy outcomes, which I began to explore in Chapter 5. I proposed a theory of the way intra-industry trade may influence policy. I considered not only firm preferences and incentives to lobby, but the degree to which different types of political institutions are receptive to pressure groups, and I considered how different policy options (tariffs vs. non-tariff forms of protection) might give rent seeking policymakers the ability to please each set of competing interests in two-way trading industries. I argued that leading, exporting firms could be supplied with low tariffs (assuming reciprocity-based tariff reductions), while losing, laggard firms could be compensated through non-tariff forms of protection that are less detectable by foreign competitors.

Empirical Conclusions

My empirical analyses here yielded support for my theoretical claims, though further testing is certainly desirable, especially on non-tariff measures. In Chapter 4, I tested my hypotheses that as intra-industry trade increases, coalition-based lobbying should decrease relative to lobbying by individual firms, and the total amount of lobbying expenditures by individual firms should be higher in industries with higher two-way trade. I found

empirical support for both these claims using large-n lobbying data from US manufacturing industries. Even controlling for export dependence, import penetration, industry concentration, capital/labor ratio, and existing tariff levels— all of which have been proposed by other scholars as factors that influence trade policy demands—I still found that intra-industry trade has an independent effect on trade policy lobbying. Among US manufacturing industries, individual firms are more politically active relative to coalitions when intra-industry trade is higher. I also found that firms spend more money on trade policy lobbying when intra-industry trade is higher.

In Chapter 5, I also found preliminary support for the argument that protection will decrease as intra-industry trade increases. In my sample of manufacturing industries across OECD economies, intra-industry trade is associated with lower tariff levels. This relationship holds even when controlling for other factors that should influence protection, such as export dependence, import penetration, national trade dependence and institutional responsiveness to special interest-groups. Among import-competing industries, the industries we would expect to receive the highest levels of protection, I found that higher intra-industry trade was still associated with lower protection, suggesting that as firms increase their exports they lobby successfully for lower tariffs, over the objection of import-competing firms within the same industry, who presumably prefer higher protection.

While my results in Chapter 5 do not tell us about the causal process linking intra-industry trade with levels of protection, I contend that when we consider them in conjunction with my findings about lobbying, the evidence is supportive of my theory. Taken together, the results support my argument that intra-industry trade undermines industry consensus and incentivizes more lobbying by individual firms, and especially exporters. As exporters realize the gains to be made from specialization, returns to scale and production for foreign markets, they become increasingly politically active to lobby for tariff reductions and counteract demands from domestically oriented firms within their industries who have an interest in protection.

Agenda for Future Research

Despite my promising empirical results, there nevertheless remain gaps in the existing study that invite future research. One significant area of improvement concerns fleshing out the causal linkages between intra-industry trade, political action, and policy outcomes. Caporaso (2009) refers to a highly specified chain of causality as "narrative smoothness." Taking the Stolper-Samuelson theorem as an example, Caporaso criticizes spare theories that relate exogenous macrohistorical phenomenon to political outcomes without tracing the causal mechanisms that link one with the other. Highlighting the Stolper-Samuelson's underspecified chain of causality, he writes,

> "If the theory specified not only how trade affects factor incomes, but also how these incomes are perceived by real social classes, how these objective interests are mobilized (or not) by political entrepreneurs, and the way in which these classes are or are not organized into electoral constellations where they could make their votes count, this would greatly add to the story" (2009:78).

I have attempted in this dissertation to theorize the link between a macrohistorical, structural phenomena (the rise of intra-industry trade among developed economies), with political outcomes (more contentious trade lobbying) and policy outcomes (falling tariffs). To avoid the pitfalls of an overly spare analysis that draws too straight a line between economic preferences and policy outcomes, I focused much of my theorizing and empirical analysis on the demand side of the process: the link between intra-industry trade and the structure of political coalitions. However, confidence in the next step of the argument, that changes in lobbying behavior lead to lower protection, would be higher if I employed qualitative analysis to fill in the gaps in the causal chain.

One of the main criticisms of my analysis is likely to be that the causal arrow runs the other direction; in other words, that lower protection causes higher intra-industry trade. One response to this critique is that an increase in IIT does not mean a greater volume of trade. Higher intra-industry trade indicates a shift toward a more balanced mix of exports and imports within an industry, not a net increase in the volume of that industry's exports and imports. Lowering tariffs should not systematically make trade more balanced. Lowering tariffs may lead to a flood of lower-priced imports, which would

register as lower IIT if not also accompanied by a similar increase in exports. Rather than leading to a greater balance of imports and exports, lower protection makes trade less costly, which benefits exporting firms, their workers and consumers but harms non-exporting firms and their workers. Detailed qualitative analysis of a handful of cases would enable me to trace the causal process behind the statistical associations that I have established here. In future research I plan to select a small number of industries to examine through in-depth case studies, allowing me to better specify the mechanisms that link changes in intra-industry trade to changes in political behavior over time, and changes in policy outcomes as well.

Another area that remains underdeveloped in the present analysis is the role of policymakers and political institutions. I have made a number of simplifying assumptions about policymakers' preferences and interests, and I have not thoroughly problematized the ways that policymakers and their institutional contexts mediate between societal demands and trade policy outcomes. I have also not sufficiently addressed the ways that institutions make collective action more or less costly for different types of societal groups. As I discussed in Chapter 5, the strength of the effects of intra-industry trade on protection may depend on the institutional setting. Institutions such as electoral systems, access points, veto points, constituency size, location of trade policymaking authority, and policymaking rules all incentivize and reward political action in different ways, and this in

turn affects trade policy outcomes. This is the central focus of the political opportunity structure literature, which builds on the traditional, Olsonian approach to collective action and argues that the political process (political realities, constraints and opportunities) is as much a precursor for collective action as is the role of group organization, resources, grievances, or socioeconomic change (McAdam et al. 1996). If intra-industry trade undermines industry-based political coalitions, as I have argued, certain political or institutional landscapes will be more or less receptive to firms that lobby alone. This affects the decision to lobby in the first place, and thus the structure of trade protection.

Appendix A: 2SLS Regression on Tariff Measures with Fixed Effects

	Simple Applied Tariffs	Import Weighted Simple Applied Tariffs	Simple Average MFN Tariff	Import Weighted MFN Tariff
Intra Industry Trade	-30.225	-22.666**	16.516	-7.430
	(27.006)	(12.844)	(41.317)	(48.978)
RCA	2.445	4.556	-2.649	1.497
	(5.725)	(3.265)	(7.574)	(8.680)
Firm Size	-1.400	-0.479	0.173	-0.097
	(0.954)	(0.472)	(0.484)	(0.541)
Output	-1.46e09	-1.15e08***	3.42e-10***	-9.31e-10
	(8.04e09)	(3.72e09)	(1.49e-08)	(1.69e-10)
District Magnitude	-0.057	-0.040	-0.161**	-0.086
	(0.094)	(0.076)	(0.070)	(0.056)
Particularism	1.435	1.700**	0.110	0.710
	(0.899)	(0.690)	(0.752)	(0.798)
Trade Dependence	-0.210***	-0.222***	-0.389***	-0.367***
	(0.065)	(0.038)	(0.098	(0.113)
Observations	1505	1505	1494	1494
F, p > F	15.07, (0.00)	17.93, (0.00)	25.59, (0.00)	20.73, (0.00)

*p < .1, **p<.05, ***p<.01. All standard errors are heteroskedasticity robust.

Appendix B: 2SLS Regression on Non-Tariff Measures

	Weighted Ad Valorem Equivalent of NTM	Core NTM Frequency Ratio	Simple Ad Valorem Equivalent of NTM	Core NTM Coverage Ratio
Intra Industry Trade	2.387	-55.019	-7.290	-26.422
	(11.825)	(48.921)	(11.996)	(37.33)
RCA	0.473	8.897	2.256	2.511
	(3.839)	(12.309)	(3.336)	(9.344)
Firm Size	1.995**	3.897	1.314**	2.373
	(0.494)	(2.242)	(0.512)	(1.743)
Output	8.52e-09	6.63e-09	7.66e-09	1.19e-09
	(9.75e-09)	(1.88e08)	(8.74e-09)	(1.16e-08)
District Magnitude	-0.313	-0.025	-0.320**	-0.012
	(0.297)	(0.630)	(0.300)	(0.475)
Particularism	-1.500	1.092	-1.220	0.994
	(.880)	(2.069)	(0.809)	(1.418)
Trade Dependence	.014	.517	0.467	0.396
	(0.726)	(0.270)	(0.707)	(0.217)
Observations	214	233	214	233
F, p > F	3.07, (0.004)	1.45, (0.186)	4.01, (0.00)	1.53, (0.159)

*p < .1, **p<.05, ***p<.01. All standard errors are heteroskedasticity robust.

Appendix C: IIT and Non-Tariff Measures (GLS with Random Effects)

	Weighted Ad Valorem Equivalent of NTM	Core NTM Frequency Ratio	Simple Ad Valorem Equivalent of NTM	Core NTM Coverage Ratio
Intra Industry Trade	0.102	3.489	0.884	4.416
	(0.067)	(6.291)	(0.778)	(4.513)
RCA	0.036	-10.025***	0.256	-7.935***
	(0.048)	(3.676)	(0.710)	(2.389)
Firm Size	0.146**	1.604**	1.087***	1.293
	(0.063)	(0.758)	(0.319)	(0.636)
Output	4.31e-11	3.27e-08**	1.08e-09	1.40e-08
	(1.32e-10)	(1.43e-08)	(2.10e-09)	(9.09e-09)
District Magnitude	-0.149	0.038	-0.337**	0.007
	(0.077)	(0.510)	(0.187)	(0.440)
Particularism	-0.219	-0.017	-1.505***	0.310
	(0.334)	(1.317)	(0.527)	(1.104)
Trade Dependence	-0.060	0.271	-0.014	0.279 **
	(0.045)	(0.139)	(0.038)	(0.123)
Sector Dummy	8.170**	5.671	8.716***	5.809
	(3.784)	(5.957)	(2.980)	(4.849)
Observations	214	233	214	233
F, p > F	-- , --	25.29, (0.001)	22.630, (0.004)	24.10, (0.00)

*p < .1, **p<.05, ***p<.01. All standard errors are heteroskedasticity robust.

BIBLIOGRAPHY

Alt, J. E, Frieden, J., Gilligan, M. J., Rodrik, D., & Rogowski, R. (1996). The political economy of international trade. *Comparative Political Studies, 29*(6), 689-717.

Alt, J.E. & Gilligan, M. (1994). The Political Economy of Trading States. *Journal of Political Philosophy 2*(2), 165-192.

Alt, J.E., Carlsen, F., Heum, P., & Johansen, K. (1999). Asset Specificity and the Political Behavior of Firms: Lobbying for Subsidies in Norway. *International Organization, 53*(1), 99–116.

Amiti, M. & Davis, D. (2012). Trade, Firms and Wages: Theory and Evidence. *Review of Economic Studies, 79*(1), 1-36.

Antweiler, W. & Trefler, D. (2002). Increasing Returns and All That: A View from Trade. *The American Economic Review 92*(1), 93-119.

Bailey, M. A., Goldstein, J., & Weingast, B. R. (1997). The Institutional Roots of American Trade Policy. *World Politics, 49*(3), 309–338.

Baldwin, R. E. (1985). *The Political Economy of U.S. Import Policy*. Cambridge, MA: MIT Press.

Baldwin, R. E. & Martin, P. (1999). Two Waves of Globalisation: Superficial Similarities, Fundamental Differences. NBER Working Paper Series, No. 6904. National Bureau of Economic Research.

Beaulieu, E. (2002). Factor or Industry Cleavages in Trade Policy? An Empirical Analysis of the Stolper–Samuelson Theorem. *Economics & Politics, 14*(2), 99–131.

Bergsten, C. F. (1998). Trade Policy and Trade Legislation in 1998. In *Restarting Fast Track*. Schott, J. J. (ed.). Washington, DC: Institute for International Economics.

Bernard, A. B., Jensen, J. B., Redding, S. J. & Schott, P. K. (2007). Firms in International Trade. *Journal of Economic Perspectives, 21*(3), 105-130.

Bernard, A. B., Redding, S. J., & Schott, P. K. (2007). Comparative Advantage and Heterogeneous Firms. *The Review of Economic Studies, 74*(1), 31–66.

Bhagwati, J. N., & Patrick, H. T. (1990). *Aggressive unilateralism: America's 301 trade policy and the world trading system*. Ann Arbor, MI: University of Michigan Press.

Bièvre, D. D., & Dür, A. (2005). Constituency Interests and Delegation in European and American Trade Policy. *Comparative Political Studies, 38*(10), 1271–1296.

Bombardini, M., & Trebbi, F. (2012). Competition and political organization: Together or alone in lobbying for trade policy? *Journal of International Economics, 87*(1), 18–26.

Brawley, M. R. (1997). Factoral or Sectoral Conflict? Partially Mobile Factors and the Politics of Trade in Imperial Germany. *International Studies Quarterly, 41*(4), 633–654.

Brülhart, M. (2008). An Account of Global Intraindustry Trade, 1961-2006. World Development Report Background Paper. World Bank.

Busch, M. L., & Reinhardt, E. (1999). Industrial Location and Protection: The Political and Economic Geography of U.S. Nontariff Barriers. *American Journal of Political Science, 43*(4), 1028–1050.

Caporaso, J. A. (2009). Is there a Quantitative-Qualitative Divide in Comparative Politics? The Case of Process Tracing. In T. Landman & N. Robinson (Eds.), *The SAGE Handbook of Comparative Politics* (pp. 67–83). London: SAGE.

Carey, J. M., & Shugart, M. S. (1995). Incentives to cultivate a personal vote: A rank ordering of electoral formulas. *Electoral Studies, 14*(4), 417–439.

Chase, K. A. (2009). *Trading Blocs: States, Firms, and Regions in the World Economy*. Ann Arbor, MI: University of Michigan Press.

Clark, T.S. & D.A. Linzer. (2013, January 30). Should I Use Fixed or Random Effects? Unpublished manuscript, Emory University. Available at http://userwww.service.emory.edu/~tclark7/research.html

Coen, D. (2007). Empirical and theoretical studies in EU lobbying. *Journal of European Public Policy, 14*(3), 333–345.

Conybeare, J. A. C. (1991). Voting for Protection: an Electoral Model of Trade Policy. *International Organization 45*(1), 57-81.

Coughlin, C. C. (1985). Domestic Content Legislation: House Voting and the Economic Theory of Regulation. *Economic Inquiry, 23*(3), 437–448.

Davis, C. L. (2004). International Institutions and Issue Linkage: Building Support for Agricultural Trade Liberalization. *The American Political Science Review, 98*(1), 153–169.

Destler, I. M. (1980). *Making foreign economic policy*. Washington, DC: Brookings Institution.

Destler, I. M., Odell, J. S. & Elliott, K. A. (1987). *Anti-Protection*. Washington, DC: Institute for International Economics.

Dixit, A. & Norman, V. (1980). *Theory of International Trade*. Cambridge, UK: Cambridge University Press.

Drope, J. M., & Hansen, W. L. (2004). Purchasing Protection? The Effect of Political Spending on U.S. Trade Policy. *Political Research Quarterly, 57*(1), 27–37.

Dür, A. (2008). Bringing Economic Interests Back into the Study of EU Trade Policy-Making. *The British Journal of Politics & International Relations, 10*(1), 27–45.

ECORYS Nederland BV. (2009). Non-Tariff Measures in EU-US Trade and Investment - An Economic Analysis (Report prepared for European Commission, Directorate-General for Trade No. OJ 207/S 180-219493).

Ehrlich, S. D. (2007). Access to Protection: Domestic Institutions and Trade Policy in Democracies. *International Organization, 61*(3), 571–605.

Ehrlich, S. D. (2009). Constituency Size and Support for Trade Liberalization: An Analysis of Foreign Economic Policy Preferences in Congress. *Foreign Policy Analysis, 5*(3), 215–232.

Ehrlich, S.D. (2008). The Tariff and the Lobbyist: Political Institutions, Interest Group Politics and US Trade Policy. *International Studies Quarterly 52*(2):427-445.

Feenstra, R. C., Romalis, J., & Schott, P. K. (2002). U.S. Imports, Exports, and Tariff Data, 1989-2001 (NBER Working Paper No. 9387). National Bureau of Economic Research.

Frieden, J. A. (1992). *Debt, Development, and Democracy: Modern Political Economy and Latin America, 1965-1985*. Princeton, NJ: Princeton University Press.

Garst, W. D. (1998). From Factor Endowments to Class Struggle. *Comparative Political Studies, 31*(1), 22 –44.

Gawande, K. & Hansen, W. L. (1999). Retaliation, Bargaining, and the Pursuit of "Free and Fair" Trade. *International Organization 53*(1), 117-159.

Gibson, M. L. (2000). Conflict Amid Consensus in American Trade Policy. Washington, DC: Georgetown University Press.

Gilligan, M. J. (1997). Lobbying as a Private Good with Intra-Industry Trade. *International Studies Quarterly, 41*(3), 455–474.

Gilligan, M. J. (1997a). *Empowering Exporters*. Ann Arbor, MI: University of Michigan Press.

Goldstein, J. (1988). Ideas, Institutions, and American Trade Policy. *International Organization, 42*(1), 179–217.

Goldstein, J. L., Rivers, D., & Tomz, M. (2007). Institutions in International Relations: Understanding the Effects of the GATT and the WTO on World Trade. *International Organization, 61*(1), 37–67.

Greenwood, J. (2011). *Interest Representation in the European Union*. Basingstoke, UK: Palgrave Macmillan.

Grieco, J. (1990). *Cooperation Among Nations: Europe, America, and Non-Tariff Barriers to Trade*. Ithaca, NY: Cornell University Press.

Grossman, G. M., & Helpman, E. (1994). Protection for Sale. *The American Economic Review, 84*(4), 833–850.

Grossman, G. M., & Helpman, E. (2005). A Protectionist Bias in Majoritarian Politics. *The Quarterly Journal of Economics, 120*(4), 1239–1282.

Grubel, H. G., & Lloyd, P. J. (1975). *Intra-industry trade: the theory and measurement of international trade in differentiated products*. New York: Wiley.

Guisinger, A. (2009). Determining Trade Policy: Do Voters Hold Politicians Accountable? *International Organization, 63*(3), 533–57.

Hankla, C. R. (2006). Party Strength and International Trade. *Comparative Political Studies, 39*(9), 1133 –1156.

Hansen, W. L., & Prussa, T. J. (1996). Cumulation and Itc Decision-Making: The Sum of the Parts Is Greater Than the Whole. *Economic Inquiry, 34*(4), 746–769.

Harley, C. K. (1996). Introduction. *The Integration of the World Economy, 1850-1914*. Cheltenham, UK: Edward Elgar.

Helpman, E. (1981). International trade in the presence of product differentiation, economies of scale and monopolistic competition: A Chamberlin-Heckscher-Ohlin approach. *Journal of International Economics, 11*(3), 305–340.

Helpman, E. (1987). Imperfect competition and international trade: Evidence from fourteen industrial countries. *Journal of the Japanese and International Economies, 1*(1), 62–81.

Helpman, E. (2011). *Understanding Global Trade*. Cambridge, MA: Harvard University Press.

Helpman, E., & Krugman, P. R. (1985). *Market Structure and Foreign Trade*. Cambridge, MA: MIT Press.

Henisz, W. J. & Mansfield, E. D. (2006). Votes and Vetoes: The Political Determinants of Commercial Openness. International Studies Quarterly, 50(1), 189-212.

Hiscox, M. J. (1999). The Magic Bullet? The RTAA, Institutional Reform, and Trade Liberalization. *International Organization, 53*(4), 669–698.

Hiscox, M. J. (2002). Commerce, coalitions, and factor mobility: Evidence from congressional votes on trade legislation. *American Political Science Review, 96*(03), 593–608.

Hiscox, M. J. (2002). *International Trade and Political Conflict: commerce, coalitions, and mobility*. Princeton, NJ: Princeton University Press.

Ikenberry, G. J., Lake, D. A., & Mastanduno, M. (1988). *The State and American Foreign Economic Policy*. Cornell University Press.

Jeong, G. H. (2009). Constituent Influence on International Trade Policy in the United States, 1987-2006. *International Studies Quarterly, 53*(2), 519–540.

Kasahara, H. & Lapham, B. (2013). Productivity and the decision to import and export: theory and evidence. *Journal of International Economics 89*(2), 297-316.

Katzenstein, P. (1977). Introduction: Domestic and International Forces and Strategies of Foreign Economic Policy. *International Organization 31*(4):587-606.

Kono, D. Y. (2006). Optimal Obfuscation: Democracy and Trade Policy Transparency. *The American Political Science Review, 100*(3), 369–384.

Kono, D. Y. (2009). Market Structure, Electoral Institutions, and Trade Policy. *International Studies Quarterly, 53*(4), 885–906.

Krasner, S. D. (1976). State Power and the Structure of International Trade. World Politics, 28(03), 317–347.

Krueger, A. O. (1997). Trade Policy and Economic Development: How We Learn. The *American Economic Review, 87*(1), 1–22.

Krugman, P. R. (1995). Growing World Trade: Causes and Consequences. Brookings Papers on Economic Activity, Spring, 327–377.

Krugman, P. R. (2008, December 8). The Increasing Returns Revolution in Trade and Geography. Nobel Prize Lecture, Princeton University, Princeton, NJ.

Krugman, P. R. (1979). Increasing returns, monopolistic competition, and international trade. *Journal of International Economics, 9*(4), 469–479.

Krugman, P. R. (1981). Intraindustry Specialization and the Gains from Trade. *Journal of Political Economy, 89*(5), 959–973.

Krugman, P. R. (1990). *Rethinking International Trade*. Cambridge, MA: MIT Press.

Ladewig, J. W. (2006). Domestic Influences on International Trade Policy: Factor Mobility in the United States, 1963 to 1992. *International Organization, 60*(1), 69–103.

Lee, J.W., & Swagel, P. (1997). Trade Barriers and Trade Flows across Countries and Industries. *Review of Economics and Statistics, 79*(3), 372–382.

Lipson, C. (1982). The transformation of trade: the sources and effects of regime change. *International Organization, 36*(2), 417–455.

Lohmann, S., & O'Halloran, S. (1994). Divided government and U.S. trade policy: theory and evidence. *International Organization, 48*(4), 595–632.

Long, J. S. (1997). *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA: SAGE.

Magee, S. P., Brock, W. A., & Young, L. (1989). *Black hole tariffs and endogenous policy theory: political economy in general equilibrium*. Cambridge, UK: Cambridge University Press.

Mansfield, E. D., Milner, H. V., & Rosendorff, B. P. (2002). Why Democracies Cooperate More: Electoral Control and International Trade Agreements. *International Organization, 56*(3), 477–513.

Mansfield, E.D. & Busch, M.L. (1995). The Political Economy of Nontariff Barriers: a Cross-National Analysis. *International Organization 49*(4):723-749.

Marvel, H. P. & Ray, E. J. (1987). Intraindustry trade: sources and effects on protection. *Journal of Political Economy 95*(6), 1278-1291.

Mayer, W. (1984). Endogenous Tariff Formation. *The American Economic Review, 74*(5), 970–985.

McAdam, D., McCarthy, J. D. & Zaid, M. N. (eds.) (1996). *Comparative Perspectives on Social Movements: Political Opportunities, Mobilizing Structures, and Cultural Framings*. Cambridge, UK: Cambridge University Press.

McGillivray, F. (1997). Party Discipline as a Determinant of the Endogenous Formation of Tariffs. *American Journal of Political Science, 41*(2), 584–607.

McGillivray, F. (2004). *Privileging Industry*. Princeton, NJ: Princeton University Press.

Melitz, M. J. (2003). The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity. *Econometrica, 71*(6), 1695–1725.

Meunier, S. (2005). *Trading Voices: the European Union in International Commercial Negotiations*. Princeton, NJ: Princeton University Press.

Midford, P. (1993). International Trade and Domestic Politics: Improving on Rogowski's Model of Political Alignments. *International Organization 47*(4):535-564.

Milner, H. V. (1988). Trading Places: Industries for Free Trade. *World Politics 40*(3):350-376.

Milner, H. V. (1999). The Political Economy of International Trade. *Annual Review of Political Science 2*(91-114).

Milner, H. V. & Judkins, B. (2004). Partisanship, Trade Policy, and Globalization: Is There a Left-Right Divide on Trade Policy? *International Studies Quarterly 48*(1), 95-120.

Milner, H. V., & Kubota, K. (2005). Why the Move to Free Trade? Democracy and Trade Policy in the Developing Countries. *International Organization, 59*(1), 107–143.

Nicita, A. & M. Olarreaga. (2007). Trade, Production and Protection 1976-2004. *World Bank Economic Review 21*(1), 165-171.

Nielson, D. L. (2003). Supplying Trade Reform: Political Institutions and Liberalization in Middle-Income Presidential Democracies. *American Journal of Political Science, 47*(3), 470–491.

O'Reilly, R. F. (2005). Veto Points, Veto Players, and International Trade Policy. *Comparative Political Studies, 38*(6), 652 –675.

O'Rourke, K. H. (2003). Heckscher-Ohlin theory and individual attitudes toward globalization. NBER Working Paper Series, No. 9872. National Bureau of Economic Research, Cambridge, MA.

OECD Economic Outlook. (2002). Volume 71. (pp. 159–170). Organisation for Economic Co-Operation and Development.

OECD. (2011). The Impact of Trade Liberalisation on Jobs and Growth (OECD Trade Policy Papers). Paris: Organisation for Economic Co-operation and Development.

Olson, M. (1965). *The Logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge, MA: Harvard University Press.

Olson, M. (1982). *The Rise and Decline of Nations*. New Haven, CT: Yale University Press.

Pareto, V. ([1927] 1971). *Manual of Political Economy*. Cranbury, NJ: Scholars Book Shelf.

Redding, S. J. (2011). Theories of Heterogeneous Firms and Trade. *Annual Review of Economics, 3*(1), 77–105.

Ricardo, D. (1817). *The Principles of Political Economy and Taxation*. London: Everyman's Library.

Rodrik, D. The Rush to Free Trade in the Developing World: Why So Late? Why Now? Will It Last? In S. Haggard & S.B. Webb. (Eds.), *Voting for Reform: Democracy, Political Liberalization, and Economic Adjustment* (1994). (pp. 61–88). New York: Oxford University Press.

Rogowski, R. (1987). Trade and the variety of democratic institutions. *International Organization, 41*(2), 203-223.

Rogowski, R. (1989). *Commerce and Coalitions*. Princeton, NJ: Princeton University Press.

Roncek, D. W. (1992). Learning More From Tobit Coefficients: Extending a Comparative Analysis of Political Protest. *American Sociological Review, 57*(4), 503.

Rose, A. (2005). Which International Institutions Promote International Trade? *Review of International Economics, 13*(4), 682–698.

Ruffin, R. J. (1999). The nature and significance of intra-industry trade. text. *Economic and Financial Policy Review*, Q(IV), 2-9. Federal Reserve Bank of Dallas.

Schattschneider, E. E. (1935). *Politics, Pressures, and the Tariff*. New York: Prentice-Hall, Inc.

Scheve, K. F. & Slaughter, M. J. (2001). What determines individual trade-policy preferences? *Journal of International Economics, 54*(2), 267-292.

Schott, P. (2010). US Manufacturing Exports and Imports by SIC or NAICS Category and Partner Country, 1972 to 2005. Data note, Yale School of Management and NBER.

Scott, R. E., Salas, C., & Campbell, B. (2006, September 28). *Revisiting NAFTA: Still not working for North America's workers*. Washington, DC: Economic Policy Institute.

Shepsle, K. A., & Weingast, B. R. (1984). Political Solutions to Market Problems. *The American Political Science Review, 78*(2), 417-434.

Sherman, R. (2002). Delegation, Ratification, and U.S. Trade Policy. *Comparative Political Studies, 35*(10), 1171 –1197.

Somjee, M. (2012). Looking for the Losers in New-New Trade Theory: IIT and Wages. *Chicago Policy Review*. March 13, 2012.

Terrill, T. E. (1973). *The tariff, politics, and American foreign policy, 1874-1901*. Westport, CT: Greenwood Press.

Tosini, S. C. & Tower, E. (1987). The textile bill of 1985: the determinants of Congressional voting patterns. *Public Choice, 54*(1), 19-25.

Trefler, D. (2004). The Long and Short of the Canada-U.S. Free Trade Agreement. *American Economic Review, 94*(4), 870–895.

Troeger, V.E. (2008). Problematic Choices: Testing for Correlated Unit Specific Effects in Panel Data. Presented at the Political Methodology Meeting, Ann Arbor, MI.

Turner, J. & Schneier, E. V. (1970). *Party and Constituency: Pressures on Congress*. Baltimore, MD: Johns Hopkins University Press.

Verdier, D. (1994). *Democracy and International Trade*. Princeton, NJ: Princeton University Press.

Verdier, D. (1998). Democratic Convergence and Free Trade. *International Studies Quarterly, 42*(1), 1–24.

Wallack, J.S., A. Gaviria, U. Panizza, & E. Stein. (2003). Particularism around the World. *World Bank Economic Review, 17*(133-143).

Weller, N. (2009). Trading Policy: Constituents and Party in U.S. Trade Policy. *Public Choice, 141*(1/2), 87–101.

Wintrobe, R. 1998. *The Political Economy of Dictatorship*. Cambridge, UK: Cambridge University Press.

Woll, C. (2009). Trade Policy Lobbying in the European Union: Who captures Whom? In Coen, D. & Richardson, J. (eds.). *Lobbying the European Union*. Oxford, UK: Oxford University Press.

Wood, D.B. (1988). Principals, Bureaucrats, and Responsiveness in Clean Air Enforcements. *The American Political Science Review, 82*(1):213-234.

Woolcock, S. (2005). European Union trade policy: domestic institutions and systemic factors. In D. Kelly & W. Grant (Eds.), *The politics of international trade in the twenty-first century*. Basingstoke, UK: Palgrave.

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