

INTER-SECTORAL GOODS AND LABOR MARKET RELATIONSHIPS,
INTERNATIONAL CAPITAL MOBILITY, AND US TRADE POLITICS IN THE 1980S

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ABSTRACT

HAK-SEON LEE: Inter-sectoral Goods and Labor Market Relationships, International Capital Mobility, and US Trade Politics in the 1980s
(Under the direction of Timothy J. McKeown)

This research undertakes a specific-factors analysis of trade politics in a world of cross-border capital mobility and finds that inter-sectoral goods market relationships, as well as labor mobility, do influence the patterns of industry lobbying for trade protection when foreign direct investment (FDI) flows into the US. I study inter-sectoral goods markets by exploiting input-output tables on the structure of the American economy prepared periodically by the Bureau of Economic Analysis in the U.S. Commerce Department. I show that sales or purchase dependencies affect a sector's lobbying for trade protection when "neighboring" sectors receive FDI. I also show that the level of inter-sectoral labor mobility affects industry lobbying because FDI-receiving sectors usually pull labor from other sectors. Industry lobbying for trade protection is measured by (1) financial contributions to the political campaigns of members of Congress who vote for a protectionist bill; and (2) petitions filed with the US International Trade Commission (USITC) requesting anti-dumping or countervailing duties during the five Congressional periods (1981 – 1990).

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ABBREVIATIONS

BEA	Bureau of Economic Analysis
BOP	Balance of Payments
CFIUS	Committee on Foreign Investment in the US
CPS	Current Population Survey
FDI	Foreign Direct Investment
FEC	Federal Election Commission
GATT	General Agreement on Tariffs and Trade
IFDI	Inward Foreign Direct Investment
IPE	International Political Economy
IR	International Relations
ITC	International Trade Commission
M&A	Merger and Acquisition
NBER	National Bureau of Economic Research
NBRM	Negative Binomial Regression Model
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Squares
PAC	Political Action Committee
PCSE	Panel Corrected Standard Errors
SIC	Standard Industrial Classification

CHAPTER ONE

INTRODUCTION

1.1 Economic Globalization and Domestic Politics

The interaction between international and domestic politics has been a primary issue for students of the international political economy (IPE). It has been said that domestic politics can be both a cause and a consequence of international politics (Gourevitch 1978). How can a country influence international politics? Political realists posit that when the world economy is dominated by a hegemon, the international economic system is more likely to be open and stable (Kindleberger 1973; Krasner 1976; Gilpin 1987).¹ After two world wars, the US, having become the sole economic hegemon, restructured the world economic system by initiating multilateral institutions such as the International Monetary Fund (IMF) and the General Agreement on Tariffs and Trade (GATT).²

How could changes in world politics influence a society's domestic politics? Since the 1970s, the world economy has been characterized by an unprecedented level of economic globalization processes driven by growing international trade, capital flows and relocation of production. And it has been argued that economic globalization exerts profound effects on an individual economy's domestic politics (Frieden and Rogowski 1996; Garrett 1998; Kahler

¹ This argument is so-called the hegemonic stability theory.

² Liberals posit that, even after a hegemon declines, international institutions help maintain a stable and open world economic system (Ruggie 1983; Keohane 1984, 1989).

and Lake 2003). Since economic globalization creates opportunities or constraints for various domestic actors, it affects the actors' policy preferences (Keohane and Miller 1996). Could the globalized economy, then, influence domestic politics in the US, still the largest national economy in the world? If so, what external sources could modify US domestic politics? Even before the current wave of globalization processes, the US economy had constantly interacted with the world economy during the nineteenth and twentieth centuries. And, depending on the level of trade openness, there have been always winners and losers among various economic actors in the US (Hiscox 2002). Then what could be a "new" external source of modification in US trade politics? One of the most prominent changes in recent decades was increased inward foreign direct investment (FDI) into the US. Unlike previous decades in the twentieth century, since the 1980s, the US has become a net cross-border investment receiver instead of a sender (Graham and Krugman 1995; Kang 1997). Since most inward FDI stays within the US, it is reasonable to suspect that this investment has had an impact on US domestic politics.

This research focuses on how increasing inward FDI affected the patterns of US industry lobbying during the 1980s. Why do I care about the effects from inward FDI? When foreign firms engage in direct investment in US industries, the investment induces modifications in corporate ownership structure and industry goods production between domestic and foreign firms. These modifications after inward FDI imply new business environments, which provide new opportunities or constraints for US industries. In response, US industries will modify their political activities, pursuing more favorable government policies.³ Thus, based on the so-called interest group politics model, this research assumes

³ An important assumption is that economic actors lobby when they calculate that the benefits from provided policies will be greater than the costs of lobbying activities.

that economic actors pressure the government, seeking policies favorable to the fortunes of the economic actors.

1.2 Structure of Inter-industry Goods Market Relationships

Students of the IPE have examined how given trade regimes (e.g., the imposition of tariffs or non-tariff barriers) could trigger cross-border direct investment flows. The discussion of so-called “tariff-jumping” FDI implies that newly established tariffs in a local economy will lead multinational corporations (MNC) to engage in direct investment to gain access to the local market (Hamada 1974; Brecher and Diaz-Alejandro 1977).

Other researchers have examined how an exogenous increase in international capital flows affects a domestic society’s trade politics. Goodman et al. (1996) find that foreign firms advocate free trade when they engage in import-complementing FDI to ease imports from their home countries. Yet the foreign firms demand protection against other foreign exporters once their local production substitutes previous imports from their home countries. Chase (1998) argues that sectors receiving large stocks of inward FDI engage in less lobbying for trade protection since protectionist rents from trade barriers should fall once foreign firms begin to produce locally. By contrast, Zeng and Sherman (2005) argue that inward FDI increases industry demand for trade protection because foreign investment poses a competitive challenge to domestic firms. Unlike these studies, which deal with a given sector’s reaction to FDI in its own sector, Hiscox (2004) investigates how a *given* sector would respond to FDI in *other* sectors, and finds that the increasing cross-border capital

mobility in some sectors should increase lobbying incentives for specific capital owners in other sectors, which may lose labor to the FDI-receiving sectors.

In order to gain a more complete picture of the causal relationship between inward FDI and industry lobbying, this research focuses on inter-industry business structure, which indicates input-output goods sales relationships between upstream and downstream industries. Why do I care about inter-industry structure? Since the structure represents the level of “closeness” between industries in goods sales connections, it also implies the degree of inter-industry “dependencies.” An upstream sector that sells a larger portion of its total shipments to a downstream sector is highly dependent upon the downstream sector. Another upstream sector that sells a small amount of its total sales to a downstream sector is less dependent upon the downstream sector. Once corporate ownership structure and industry production change after foreign firms engage in FDI and produce in a local sector, other sectors will experience different levels of impacts on their business fortunes because there are various levels of goods sales (or purchase) dependencies between the FDI-receiving sector and the other sectors. Hence the level of inter-industry dependencies will determine the degree of industry sensitivity to inward FDI in neighboring sectors. Should inward FDI and inter-industry business structure have a negative (or positive) impact on an industry’s fortune, the industry will modify its lobbying activities, seeking the most favorable government policies.

Assume that foreign automobile companies begin to produce in the US and gain domestic market share. Then the foreign investment should affect the fortunes of automobile parts suppliers in different ways depending on their sales dependencies upon the automobile industry. Consider domestic suppliers that are highly dependent upon the FDI-receiving

automobile industry. If foreign automobile companies producing in the US procure inputs from their parent firms or home country suppliers rather than US suppliers (as MNCs usually do when they engage in FDI), US suppliers will face a negative demand shock, all else equal. Then the harmed US suppliers will devote resources to lobbying since they have a stake in blocking imported inputs sold to the automobile industry.⁴ On the other hand, suppliers that are less dependent upon the automobile industry will not see much direct impact from inward FDI in the automobile industry, and thus will not respond in a substantial way. Hence varying degrees of inter-industry goods sales dependencies should bring different levels of responses from various sectors when a given sector receives inward FDI. I measure industrial responses by two direct measurements of industry lobbying for trade protection: industrial campaign contributions to protectionist candidates for the US House of Representatives and industry petitions filed with the US International Trade Commission (ITC).

1.3 Inter-industry Labor Mobility

Another main topic of this research is how inter-industry labor mobility can affect industry lobbying in trade politics when other sectors receive FDI and expand production. Various manufacturing sectors employ different types and levels of skilled labor, which affects the “stickiness” of labor mobility across sectors. If a given sector employs less sector-specific skilled labor, then the sector will have a relatively high level of labor mobility since its labor can be compatible with other sectors that also do not require highly sector-specific

⁴ The assumption is that when FDI occurs, the effected sectors have a purely “political” reaction and do not respond by changing some aspects of their business -- at the extreme, exiting from production. Also, I assume that the political effort by the sector receiving FDI is not changed by the FDI, and the foreign firm sending the FDI also does not change its own political effort.

skills.⁵ Then that type of labor is more mobile across sectors, all else equal. On the contrary, if a given sector employs highly sector-specific skilled labor, then the sector will have a relatively low level of labor mobility since its labor cannot be compatible with other sectors. Then sector-specific labor is less mobile across sectors, all else constant. The level of inter-industry labor mobility is important in trade politics since when some sectors receive FDI and expand production, they tend to pull labor from other sectors. This logic comes from Jones (1971) and Hiscox (2004), who employ a two-sector and three-factor model that assumes that two types of capital are specific to each sector, respectively, but that labor is mobile between sectors in an economy.⁶ While they assume that labor is uniformly mobile, I presume that a given sector's level of labor mobility will be substantially different from that of other sectors. And, when FDI-receiving sectors pull labor from other sectors, the level of labor mobility matters because some sectors will be more likely to lose labor than others.

I predict that sectors that employ less sector-specific skilled labor and thus have a high level of labor mobility will be more likely to lobby if other sectors receive FDI and draw labor from them to expand production, all else constant, because the loss of labor to other sectors will result in less production and less profits, all else equal. By contrast, sectors that employ highly sector-specific skilled labor and have a relatively low level of labor mobility will be less likely to lobby when other sectors receive FDI and pull labor from other parts of the economy, all else equal. Capital owners who employ highly sector-specific skilled labor need not worry about losing labor to investment-receiving sectors. Thus, various degrees of labor mobility caused by different levels of sector-specific labor skills will work as a source of industrial political activities when FDI flows into other sectors.

⁵ This assumes that the supply of unskilled labor exceeds the supply of appropriately skilled labor.

⁶ One type of capital is mobile across borders, while the other is not.

1.4 Research Organization

In summary, this research will investigate how inward FDI *and* the structure of inter-industry connections, as well as labor mobility, can influence the evolution of the demand side of trade politics in the US.⁷ The research takes place in three steps: first, it considers how foreign investors' participation interacts with inter-sectoral goods and labor market relationships among US manufacturing sectors; second, it considers how these interactions influence a given sector's lobbying efforts for trade protection; finally, it considers how these political demands may help modify US trade policies.⁸ When trade policy changes but institutions do not, the proximate cause of the modification may be changing industrial structure after FDI flows into the US.

This dissertation is organized as follows. Chapter Two reviews the literature on interest group politics, cross-border capital flows and trade politics. Chapter Three presents the theory and hypotheses regarding inter-sectoral goods market relationships and labor mobility. Chapter Four discusses designs for empirical tests, presenting estimation, variables and data sources. Chapter Five presents the results of statistical analyses. Chapter Six concludes and discusses the political implications of this research.

⁷ Many factors influence the evolution of trade politics. This research does not argue that foreign direct investment is the most important factor that affects trade politics. Instead, it posits that FDI can be another source in the modification of trade policies.

⁸ This research does not investigate the final modification of trade policies provided by the government. It mainly focuses on the demand side of trade politics, rather than the supply side.

CHAPTER TWO

LITERATURE REVIEW

This chapter draws findings from the extant international political economy literature on the topic of the demand side of trade politics with and without cross-border capital flows. Given that existing studies have dealt with the relationships between trade politics and international capital flows, the findings from previous works will help analyze how inter-industry structure affects industry lobbying in the era of cross-border capital flows. I discuss the existing literature on FDI politics as well in order to explain why I focus on industry lobbying on trade policies rather than lobbying on FDI policies.

2.1 Interest Group Politics Without Cross-border Capital Mobility

The demand side of trade politics is basically concerned with why firms or industries demand protection and how the interest groups manifest their demands (Goodman et al. 1996).⁹ Actors in the demand side of trade politics include societal groups and political leaders. Societal groups include import-competing producers, export-oriented producers, foreign exporters, and trade unions. Political leaders include elected executives, bureaucrats, or members of legislatures who participate in policy-making processes in trade issues.

⁹ Protection in trade politics is a broad term including both tariffs and non-tariff barriers (NTBs) to trade (Lavergne 1983). Import quotas, subsidies, and a variety of trade restrictions are examples of NTBs, which are more difficult to measure than tariff levels.

This research assumes that the government supplies liberal or protectionist trade policies in response to demands from economic actors.¹⁰ The extent to which the government provides protection to societal actors is a function of the demands made by the domestic interest groups.¹¹ Interest groups seek to influence the political process in ways that promote their own interests (Grossman and Helpman 2002).¹² They spend resources for lobbying only if government plays an important role in their industry and if the expected benefits of influencing policy outweigh the costs of lobbying (Stigler 1971; Pittman 1977).¹³ These actors are predominantly producers rather than consumers since the well-organized interests of pressure groups will receive benefits from the political process at the expense of final consumers, who have diffuse interests (Schattschneider 1935; Nelson 1988).¹⁴ A protectionist measure provides large benefits to a small number of interest groups and causes a great number of consumers a slight loss (Pareto 1927).¹⁵ If consumers are sophisticated and

¹⁰ In the interest group politics model, political institutions are considered as “either captives of special interest groups or conduits of social pressure” (O’Halloran 1994). The pressure groups model directly links economic conditions and interest group demands to policy outcomes.

¹¹ Lavergne (1983) points out that the essence of interest group politics is that the government responds opportunistically to political leverage. According to Schattschneider (1935), the tariff obtained by an industry is a function of the degree of pressure that the industry was able to organize.

¹² Setting politicians as maximizing agents who pursue their own selfish interests rather than as benevolent agents seeking to maximize aggregate welfare, Grossman and Helpman (1994) argue that the manner of campaign and party financing in democratic countries creates powerful incentives for politicians to “peddle” their influence. According to them, the structure of trade protection reflects the outcome of a competition for political favors. This shows that incumbent politicians seek to get support from interest groups, and interest groups lobby not just electoral candidates, but also incumbent officeholders.

¹³ In US trade politics, Congress is primarily responsible for regulating commerce with other nations. Since Congress is a decentralized institution, it is susceptible to organized pressures (Destler 1995).

¹⁴ In this process, benefits are concentrated while costs are distributed. The pressures from domestic groups that had special economic interests were responsible for the highest tariffs in US history, under the Smoot-Hawley Tariff Act in the 1930s (Schattschneider 1935).

¹⁵ As a result, trade barriers that benefit specific producers at the expense of a large number of consumers lower the standard of living of a society on the whole.

concentrated, as business purchasers might be, then a consumer's interest would be more likely to be expressed through an organized interest group action.

There are two main interest group models in trade politics: the Stolper-Samuelson theorem and the Ricardo-Viner theorem. The first is called a factoral model, and the second a sectoral model. Without considering cross-border movements of capital or labor, the Stolper-Samuelson (1941) theorem assumes that factors of production can be mobile across sectors in a domestic economy. The theorem posits that an increase in the price of a product would more than proportionally increase the return to the factor that is intensively used in the production of that product. And if there are just two factors, the theorem suggests that the real income of the owners of the other factor, which is not intensively used in the production of the product, will fall (Alt and Gilligan 1994). Since factors are assumed to be perfectly "mobile" between sectors in the Stolper-Samuelson theorem, owners of the same factor will have similar returns across an economy regardless of the industry in which it is employed. Therefore, the Stolper-Samuelson theorem suggests that the conflicting economic interest line among economic actors is between the owners of factors of production (i.e., capital versus labor). The theorem has an implication to the Heckscher-Ohlin theorem, which posits that a country will export a good that intensively uses the factor that is relatively abundant in the society. If we combine the Heckscher-Ohlin theorem with Stolper-Samuelson, we can predict that, in a relatively capital-abundant country, the owners of labor will favor protection because it cannot be intensively used in exports, while the owners of capital will favor free trade. By contrast, in a relatively labor-abundant country, capital owners will favor protection and labor will favor free trade (Alt et. al. 1996).

Another conventional theoretical approach in trade politics is the Ricardo-Viner theorem, which assumes that all factors (or at least one factor) are specific to an industry in which they are employed (Jones 1971; Samuelson 1971).¹⁶ If a country faces an increase of imports, then an import-competing industry of that country suffers due to decreased sales and profits, all else equal. The Ricardo-Viner theorem assumes that sector-specific capital in that import-competing industry cannot move to export-oriented industries, while labor can.¹⁷ If the import-competing industry loses labor, its productivity declines, and all factors employed in the industry have lower income than before. By contrast, an exporting industry can have higher productivity because it has more labor from the import-competing industry, and both factors of the exporting industry may have higher income than before. Thus, in the specific factors model, there is a zero-sum conflict of interest between export-oriented and import-competing sectors: whichever gains, the other loses (Alt and Gilligan 1994). For this reason, the Ricardo-Viner theorem implies that lobbying activities in trade politics occur along sector lines (i.e., import-competing versus export-oriented industries) since all the factors employed in the former and all the factors employed in the latter have contrasting interests. While the owners of factors in import-competing sectors prefer protection, those in export-oriented sectors do not.¹⁸

¹⁶ While Jones (1971) called it the specific-factors model, Samuelson (1971) labeled it the Ricardo-Viner model.

¹⁷ Even though the Stolper-Samuelson theorem assumes perfect mobility of factors and the Ricardo-Viner model assumes complete specificity of factors, this is only for convenience in modeling. In reality, the level of mobility of each factor should be somewhere between perfect mobility and complete specificity (Hiscox 2001, 2002).

¹⁸ Industry-level pressure groups include industry-based labor unions and management associations. Meanwhile, an example of a class-based organization is national federations of labor unions (e.g., the AFL-CIO in the US).

Students of international political economy have debated over which of these two approaches is more appropriate when analyzing trade politics. Rogowski (1989) supports the Stolper-Samuelson theorem by claiming that factor endowments of different countries trigger increasing class conflict or urban-rural conflict when they are more exposed to international trade.¹⁹ Magee, Brook and Young (1989) argue that a factoral approach better predicts long-term US trade policy, suggesting that the Democratic Party, which is under lobby from labor, is pro-labor and pro-protection, while the Republican Party, which is under lobby from capital, is pro-capital and pro-free trade. According to them, labor and capital in the US economy have contrasting interests in the long run, and, as a result, their lobbying activities occur along factor lines, confirming the Stolper-Samuelson theorem.²⁰ However, in the short run, most factors of production are “caught” in their current activity to some degree, and short-term fluctuations of returns are more politically relevant than class-based longer-term changes. Hence, the sectoral or specific-factor approach will be more relevant in the short run (Frieden 1991).²¹ In contrast to this “time” element that explains the relative appropriateness of the Stolper-Samuelson or the Ricardo-Viner models, Alt and Gilligan (1994) argue that the sectoral model would work even in the long run if certain factor owners can have political “voice,” which influences trade policy-making in favor of the factor owners. If lobbying costs are less than the benefits from specific policies, certain factor owners would support the politicians who have incentives to adopt the policies beneficial to the owners. Thus, even in

¹⁹ Midford (1993) and Scheve and Slaughter (1998) also affirm the factoral model.

²⁰ Magee, Brook and Young (1989) undertake three additional tests to examine which approach has more explanatory power. The tests actually suggest the superiority of the Ricardo-Viner over the Stolper-Samuelson theorem. However, the authors do not reject the Stolper-Samuelson theorem, arguing that the theorem is a long-term proposition.

²¹ Lobbying activities in US trade politics is a relatively short-term phenomenon since US trade bills are subject to renewal every three to five years (Magee, Brook and Young 1989).

the long run, the sectoral model has explanatory power if the owners of certain factors have incentives to exert political pressures.²² Another attempt to resolve the controversy between factoral and sectoral approaches comes from Alt et al. (1996), who suggest that factor mobility is a matter of degree: the more costly it is for factor owners to shift out of an import-competing sector, the greater their support for protection will be, all else equal.²³

Between the two approaches, this research is based on the assumption of sectoral approaches that factors of production are relatively specific to sectors. Yet my focus on the structure of inter-industry goods sales dependencies makes this research distinct from conventional sectoral approaches that emphasize fault lines between import-competing and export-oriented sectors.

How would local trade politics develop in sectoral approaches? In the domestic market, import-competing local producers and foreign exporters compete for a share of the market for a single good (e.g., color televisions or automobiles). What preferences do domestic producers have over trade policies? If the domestic producers can compete well with imports, they would not demand protection since they do not have to spend resources for protectionist lobbying. By contrast, as foreign competitors begin to take a higher domestic market share, domestic producers feel more threatened by the foreign exporters and expend more resources to demand protection (Marks and McArthur 1990). In other words, import-competing producers seek protectionist measures to maximize profitability when they are faced with severe foreign competition. Thus, a source of demand for protection can be

²² In the Ricardo-Viner model, the purpose of political action for protection is to keep factor returns high in a particular factor owner's specific industry. By contrast, in the Stolper-Samuelson model, the purpose is to keep a particular factor owner's return high in all industries in an economy (Alt and Gilligan 1994).

²³ Along this line, Alt et al. (1996) argue that "eclecticism" employing both sectoral and factoral models is needed to explain the working of international trade because each model is correct in some way, depending upon circumstances.

foreign competitors' market share in the domestic market.²⁴ In a similar vein, Lavergne (1983) argues that the comparative disadvantage of industries should be positively related to demand for protection, and domestic producers with weaker competitive positions globally demand protection.

Other domestic producers with international interests would prefer free trade as these interests become crucial for their business (Helleiner 1977; Fong 1983; Milner 1988).²⁵ Firms that substantially export a single good and purchase inputs from overseas would favor free trade for those goods. They fear that foreign governments would retaliate if trade barriers were established in the home market, and such barriers would yield them few or no benefits in any event. Moreover, they are concerned about whether their input costs will rise as a result of trade restrictions on inputs. For example, Destler and Odell (1987) found that industries highly dependent on exporting their own goods and importing intermediate goods have been against trade protection. In an attempt to explain trade liberalization since the Reciprocal Trade Agreements Act (RTAA), Gilligan (1997) argues that US exporters lobby for trade liberalization because reciprocal reduction of trade barriers between the US and foreign countries concentrates benefits to the specific exporters, who can overcome the collective action problems among pro-liberalization groups. In sum, import-competing firms or industries are subject to demand protection, while export-oriented firms or industries tend to prefer lower or no trade barriers. Thus, in the baseline condition with no cross-border

²⁴ Levels of protection may vary with fluctuation of economic conditions. For example, business cycle models link aggregate economic conditions to levels of protection. The models posit that, since lobbying requires organizational and information costs, industries demand higher levels of protection when income gains increase and lobbying costs decrease. In times of economic downturn, industries spend more resources to demand protection, and in times of economic prosperity, they spend less resource (McKeown 1984; Cassing et al. 1986).

²⁵ Frieden and Rogowski (1996) argue that reductions in the costs of international trade due to development of technology and transportation have increased the opportunity costs of protection, and this "exogenous easing of international trade (internationalization)" creates pressures for freer trade.

capital investment, the level of trade barriers can be set through the political system in response to various domestic producers' preferences over trade policies.²⁶

The standard conclusion of the baseline model needs to be modified when domestic producers demand “strategic”²⁷ trade policies -- demanding trade barriers for the domestic market if foreign markets are protected.²⁸ This is strategic in that domestic firms' support for free trade or protection can be contingent on the behavior of foreign firms and their governments (Milner and Yoffie 1989). Thus, firms that were committed to unconditional free trade (i.e., internationally oriented firms) could resort to strategic trade demands if the domestic market is open to foreign exporters while trade barriers exist abroad and the domestic market is sufficiently large that denying it to foreigners imposes a noticeable cost on them. In this situation, the export-oriented firms at home support protectionist measures domestically to pressure foreign countries to open their markets (Milner and Yoffie 1989).

The discussion of factoral or sectoral approaches in domestic trade politics and the theories of strategic trade demand assume a baseline condition in which no substantial cross-border direct investment occurs. Factors of production may be mobile or rather specific, but only within a given domestic economy. However, if domestic firms are successful in obtaining protection from the government, foreign competitors may invest directly to have

²⁶ A number of scholars focus on the supply side of trade politics and argue that political institutions, rather than economic actors' preferences or demands, are crucial in explaining trade policy (Destler 1986; Haggard 1988; Baldwin 1986; Goldstein 1993; O'Halloran 1994; Haggard and Kaufman 1995; Rodrik 1995; Verdier 1998). Other scholars pay attention to personal preferences and ideas of policymakers or politicians in the trade policy-making processes (Goldstein 1988; Krueger 1997). This research focuses only on the demand side of trade politics rather than on the supply side of trade politics, assuming that political institutions are constant at least in short-term.

²⁷ A strategic situation is defined as one in which “one participant to gain ends is dependent to an important degree on the choices or decisions that the other participant will make” (Schelling 1960).

²⁸ This means reciprocity in opening domestic and foreign markets. Reciprocity can be defined as “exchanges of roughly equivalent values in which the actions of each party are contingent on the prior actions of the others in such a way that good is returned for good and bad for bad” (Keohane 1986).

access to the local market.²⁹ Hence the baseline condition will disappear if foreign investors participate in the host economy through local production.³⁰ In the next section of this chapter, I discuss existing literature on the interaction between cross-border capital mobility and domestic trade politics.

2.2 Cross-border Capital Mobility and Trade Politics

The basic framework for analyzing cross-border direct investment and local trade politics consists of actors and changing environments that are developed by the actors' activities. The actors include: domestic firms that receive foreign investment, other domestic firms producing the same product that do not receive the investment, domestic firms producing inputs to the production of the product, domestic firms that consume the product, new domestic foreign-owned firms set up by the foreign direct investment, foreign investors (usually multinational corporations), foreign exporters, the host government, and the government of the source of the foreign investment. Changing environments imply the modification of industrial structure of production through FDI, which influences the preferences and capabilities of the various firms in local trade politics.

²⁹ Benefits of local production include evading tariffs, saving on transportation costs, higher adaptability to changes in local markets, etc. (Ellingsen and Warneryd 1999). There are various incentives for multinational corporations (MNCs) to engage in foreign direct investment (FDI). Markusen (1984) and Helpman (1984) suggest two distinctive motivations for FDI: to access markets (horizontal FDI), and to access low wages for part of production process (vertical FDI). Other motivations include: presence of intangible assets specific to firms; exchange rate uncertainty; tax incentives; transfer pricing; quality of institutions or infrastructure such as the legal system; trade protection; trade effects; etc. (Caves 1996; Blonigen 2005).

³⁰ Types of foreign participation in a domestic economy include strategic alliances and joint ventures between local firms and foreign competitors, mergers and acquisitions (M&A), and greenfield investments by foreign investors.

In the tradition of neo-classical economics, cross-border capital flows and trade are treated as perfect substitutes (Mundell 1957; Svensson 1984). This is called the Mundell equivalency: the international movement of factors of production should lead to factor price equalization across borders, just as international trade does.³¹ Since any protectionist rents generated for local firms by trade barriers will be dissipated if cross-border capital mobility increases, increasing levels of international capital mobility should reduce incentives for firms to lobby for trade protection (Bhagwati 1991; Blonigen and Feenstra 1996).

There are two directions of interaction between cross-border capital mobility and local trade politics: how trade barriers affect international capital flows and how an increasing level of cross-border capital flows influences the modification of local trade politics. Of the two, how trade barriers trigger capital flows has been examined more fully in the existing literature. The so-called “tariff-jumping” FDI argument posits that multinational firms should have an incentive to engage in direct investment to avoid trade barriers by local production and gain access to a local market (Hamada 1974; Brecher and Diaz-Alejandro 1977). The incentives for investment in the protected local market are higher returns realized there once protective measures are implemented.

Foreign investors engage in tariff-jumping FDI after protective measures are taken in a local market. However, even before trade barriers are set up in a local economy, some foreign producers may engage in direct investment with a view to weakening domestic political forces that advocate protection in the host economy. The assumption in this case is

³¹ The factor price equalization theorem posits that the relative price of two identical factors of production eventually equalizes through international trade, which gives countries incentives to specialize in the production of goods whose factors of production are abundant in each country. A labor-abundant country specializes in the production of labor-intensive goods, while a capital-abundant country specializes in capital-intensive goods. International trade between the counties lowers the price of the scarce factor and raises the price of the abundant factor in each country. The assumption is that international trade is generated by differences in factor endowments of each country. This theory is developed from the Heckscher-Ohlin theorem of international trade (Samuelson 1948).

that capital flows from the foreign investors will dampen the probability that the host country will later invoke protection against the foreign producers. This kind of investment is called *quid pro quo* FDI or tariff-threat-defusing FDI (Bhagwati et al. 1987, 1992; Grossman and Helpman 1994b; Hillman and Ursprung 1999).³² Thus foreign competitors engage in FDI in order to preempt trade barriers that are not yet implemented and try to appease potential protectionists in the local economy.³³

A parallel argument is made for exporting firms: some studies suggest that US firms engaging in outward direct investment have been more supportive of trade liberalization in the US because those firms are the beneficiaries of higher earnings from the exports of their foreign affiliates into the US market (Helleiner 1977; Milner 1988). For example, US multinational corporations that engage in FDI and intra-firm trade have been advocates for free trade (Bhagwati 1991). Thus, vertically integrated transnational firms have incentives to advocate free trade and avoid trade barriers that increase the costs of economic transactions between affiliates and parent firms (Hillman and Ursprung 1993).

The literature discussed above still lacks an explicit explanation of how foreign capital inflows could reshuffle the structure of local trade politics. More specifically, relatively less attention has been paid to the discussion of foreign investment's impacts on the trade policy preferences of American and foreign firms in the US. This is surprising since the US has received increasing amounts of foreign capital since the 1970s, and a large

³² In contrast to this argument of protection-threat-defusing FDI, Blonigen and Ohno (1998) suggest that foreign firms, which have a relative advantage in FDI over exporting, increase exports and build protectionist pressures in the host country with an aim to raise trade barriers against "other" foreign competitors in future periods. They provide empirical evidence by investigating anti-dumping cases of tapered roller bearings, color picture tubes, and voluntary export restraint (VER) in Japanese automobiles.

³³ This type of investment substitutes for previous exports from the foreign producers to the local market.

portion of the investment remains in the US.³⁴ Thus, it is reasonable to expect that inward FDI should affect the US political economy. This assumption leads to two fundamental questions: (1) Who wins and who loses after foreign investors engage in local production in the US? ; and (2) How would the winners and losers modify their preferences in economic policies? In US trade politics, the winners and losers include American firms and US affiliates of foreign firms, local suppliers, and other foreign firms that export goods to the US market without local production.

Undertaking case studies on five US industrial sectors that receive FDI,³⁵ Goodman et al. (1996) argue that once incoming FDI has occurred, the key determinant of the corporate demand for protection in US trade politics is whether the investment is import complementing or substituting.³⁶ In a case of import-complementing FDI, US-owned firms will maintain demands for protection of their outputs as they confront competition from both fronts: foreign imports and local production by foreign-owned domestic firms. For example, US affiliates of foreign firms may import outputs from their parent firms and distribute them in the local market. If so, other US producers have an incentive to demand protectionist policies aimed at those imports. As imports increase, the incentive to act against them also

³⁴ The stock of inward direct investment in the US rose from \$51.5 billion in the mid-70s (2.6% of the total US non-financial corporate net worth) to \$425.6 billion in the early 1990s (11.6% in the same measure) (Graham and Krugman 1995).

³⁵ The industries examined include typewriters, color televisions, automobiles, steel and semiconductors.

³⁶ Incoming FDI is import complementing when foreign investors in a local economy continue to rely on imports of the output good from their home base to serve the local market. In addition, IFDI is import complementing when investors use their US affiliate as a distributor or assembler or when investment actually results in increased demand for their products that they can only satisfy by continued imports. IFDI will increase imports of inputs if foreign investors choose to procure inputs from abroad. By contrast, IFDI is import substituting when local production by the foreign affiliate replaces production and exports from the home base (Goodman et al. 1996).

increases.³⁷ By contrast, US affiliates of foreign parent firms will advocate free trade in inputs and outputs insofar as they continue to rely on imports from their home base (or other parts of the world) to serve the local market.³⁸ Thus, the greater the foreign investors' dependence on the international trade of inputs and outputs, the less protectionist they are likely to be. In a case where IFDI is import substituting, a foreign producer replaces its exports to the US with goods produced by its own US subsidiary. In this situation, the US affiliates' interests begin to converge with other US-owned local firms' interests.³⁹ Then the US affiliates (alongside other domestic firms) may see foreign exporters as threatening their business and demand the protection of outputs against the exporters (Goodman et al. 1996).⁴⁰ The merit of Goodman et al. (1996) is that it examines formulations of trade policy preferences, differentiating US- and foreign-owned firms when inward FDI reshuffles the structure of local production and the goods market.⁴¹

While Goodman et al. (1996) examines industry lobbying by conducting five industry case studies, Chase (1998) undertakes a large-N approach to investigate the patterns of

³⁷ The assumption is that domestic demand is fixed.

³⁸ In a similar vein, Hillman and Ursprung (1993) argue that vertically integrated multinational corporations should be in favor of liberal trade policies.

³⁹ Other local producers will continue to demand protection of outputs if they are still faced with an import competing situation.

⁴⁰ For example, Japanese television producers in the US filed petitions with the International Trade Commission (ITC) for protection to restrict new competitors from Korea and Taiwan in the late 1970s after Japanese FDI into the US became import substituting for their previous exports to the US.

⁴¹ Another contribution of Goodman et al.'s study is that it adopts dynamic perspectives on the changing level of FDI that affects domestic and foreign investors' trade policy preferences. First, the authors argue that in an industry where IFDI is import complementing, as the level of incoming FDI as a share of total US-based production increases, the industry's aggregate demand for protection would become weaker if all other things are equal. This is because the foreign investors acquire relatively more representation in the sector's aggregate trade policy preference than the local-based firms that prefer protection. However, if IFDI becomes more import substituting, then both US- and foreign-owned firms have converging interests and would demand protection against other foreign exporters in the US market (Goodman et al. 1996).

industry lobbying for protection when more inward FDI flows into the US.⁴² He argues that after foreign firms engage in IFDI, the benefits of pre-existing protectionist rents accrued to American producers should fall because more inflows of capital into the US will drive the domestic producers' returns back to world levels (i.e., before protection).⁴³ Moreover, as foreign investors join in local production, the benefits of protectionist measures become less excludable than before since not only domestic producers but also new entrants can enjoy the protectionist rents. This will cause declining marginal benefits of collective action for American producers, who will be less likely to contribute to protectionist lobbying than before.⁴⁴ For these reasons, Chase (1998) suggests that protectionist demand from domestic producers should diminish as more foreign firms invest in the US.⁴⁵ He provides empirical evidences by showing that industries filed fewer petitions with the International Trade Commission (ITC) as more inward FDI flowed into the US between 1992 and 1997. This study has merit in showing that domestic firms lobby less not because of their fear of retaliation by trade partners, but because of ineffective trade restrictions after more inward FDI flows into the US.⁴⁶

⁴² The number of observations in the regression model is 129, which are industries at three-digit Standard Industry Classification (SIC) codes from 1992 to 1997 (Chase 1998).

⁴³ The logic is from the Mundell equivalency theorem.

⁴⁴ The costs of collective organization also rise since new foreign-owned firms in the US increase the group size of an industry. I believe this argument makes sense since Chase (1998) assumes only greenfield investments rather than M&A-type FDI.

⁴⁵ In a similar vein, Hillman and Ursprung (1993) argue that once foreign firms enter a local market by building new plants (i.e., greenfield investment), domestic producers' benefits and stake in protectionist policies should fall. This decreased stake in protection should decrease the local producers' incentive to demand protection.

⁴⁶ Another important point of the study is the discussion on trade preferences of trade unions. Chase (1998) points out that since protection not only induces inward FDI, but also restrains outward FDI, labor continues to benefit from the trade restrictions, which may bring class cleavages between labor and less protectionist capital owners when cross-border capital mobility increases.

In contrast to Chase (1998), Zeng and Sherman (2005) argue that inward FDI should increase industry demand for trade protection. They contend that merger and acquisition (M&A) type FDI by foreign firms will exacerbate the sentiment that foreigners are buying out American firms who are getting out of business and invoke protectionist tendencies in the US.⁴⁷ Moreover, foreign competitors' local production ought to threaten the fortunes of local firms since MNCs are usually able to produce more efficiently helped by ownership-specific advantages and intangible assets. As foreign firms gain market share, demand for products by local firms should fall, all else equal. In this situation, US-owned firms' profitability and even survival should be threatened, and, as a result, local producers will be more likely to lobby for protection (Zeng and Sherman 2005).⁴⁸ Empirically, this hypothesis is supported by analysis of industry anti-dumping (AD) petitions filed with the ITC between 1980 and 1995.⁴⁹ This study has merit in that it shows economic globalization processes do not necessarily produce economic liberalization tendencies in economic actors. I believe these contrasting arguments (and empirical findings) by Chase (1998) and Zeng and Sherman (2005) reveal that foreign capital inflows' impact on the pattern of US industry lobbying may be mixed, and further investigation is needed.

Previous studies discussed above still deal with how firms in a given sector would respond to incoming FDI in its own sector. Thus, they do not consider how a *given* sector

⁴⁷ In contrast, Hillman and Ursprung (1993) suggest that when foreign firms acquire local firms, reduced import competition will decrease gains to other domestic firms from protectionist policies, and domestic firms will have less incentive to demand protection. The study, though, does not test its hypothesis empirically.

⁴⁸ Alternatively, the authors suggest that inward FDI may dampen pressure for trade protection since MNCs can introduce superior knowledge in the host economy and provide more jobs and tax revenue. In the empirical test, though, this alternative hypothesis is not confirmed.

⁴⁹ Filings of countervailing duties (CVD) complaints are not included. Industries covered are three- and four-digit SIC levels. The statistical result shows that sectors receiving more inward FDI tend to file more petitions with the ITC (Zeng and Sherman 2005).

would modify its trade policy preference in response to FDI in *other* sectors in the US. Since various industries have business relationships with each other, it is reasonable to suspect that FDI in a given sector can affect the fortunes and policy preferences of other sectors. I believe that investigating how IFDI in a given sector affects the fortunes and lobbying patterns of other sectors will provide a more complete understanding of the linkage between cross-border capital flows and industry lobbying in trade politics.

In an attempt to fill the gap, Hiscox (2004) undertakes a general equilibrium analysis that employs a two-good, three-factor model developed by Jones (1971). The three factors are two sector-specific types of capital and one perfectly mobile type of labor across an economy. One type of capital, however, is mobile across national borders, while the other is not (Jones 1971). With this specific-factor model, Hiscox (2004) argues that if capital is highly sector-specific, increased international capital mobility in some sectors increases rent-seeking incentives among owners of specific capital in other sectors. Thus, the study suggests that the impact of higher levels of cross-border capital mobility on the distributional effects of international trade should depend on the degree of inter-industry capital mobility. If a new tariff is imposed on a sector, the owners of capital employed in the sector gain due to the increased price of a good the sector produces. In this situation, foreign investors have incentives to engage in direct investment in the local economy to jump over tariff barriers, and domestic capital moves into the sector as well, seeking to realize above-normal returns in the protected sector. As more international and domestic capital is invested in the sector, the industry is supposed to hire more labor to expand production. Since labor is assumed to be perfectly mobile in the domestic economy, but not across borders, more labor should be

supplied from other domestic sectors.⁵⁰ The movement of labor will drive down the returns of capital owners in the labor-losing industries, and they have an incentive to lobby for trade protection from imported goods to compensate for the reduced returns. Since the owners of highly specific capital are assumed to be unable to move abroad, they have no other option but to resort to lobbying for trade protection. Thus, as some types of capital become more mobile internationally, the stake in trade politics can rise for owners of other specific factors. Empirically, Hiscox (2004) shows that increased cross-border capital mobility (measured by the proportion of affiliate sales in total industry shipments)⁵¹ in other sectors raised a given US industry's lobbying activities (measured by total amount of campaign contributions made to members of Congress and the number of petitions filed with the US International Trade Commission).⁵²

I believe that Hiscox's study (2004) has two merits. First, it contributes to the development of trade theories by investigating how a *given* sector would modify its trade policy preference when cross-border capital mobility increases in *other* sectors. To my knowledge, Hiscox (2004) takes the first step in that direction. Second, developing theories based on Jones' (1971) two-good three-factor formal model, Hiscox (2004) presents international capital mobility's impacts on domestic trade politics in a parsimonious way, although at the expense of simplifying the real picture of the world.

⁵⁰ Thus, the possibility of immigration of the labor force is not considered in the analysis. If labor is mobile across borders, new labor could be supplied from overseas and not necessarily from other sectors in the domestic economy.

⁵¹ Since Hiscox (2004) defines cross-border capital mobility as an elasticity, the measurement of cross-border capital mobility includes both outward investment from US to the rest of the world and inward investment from overseas into the US.

⁵² The analysis of industry campaign contributions and petitions to the ITC covers two-digit Standard Industry Classification (SIC) code 20-38 from 1981 to 1990. Additionally, the petitions analysis is conducted at the three-digit SIC level from 1982 to 1996. Yet, as Hiscox (2004) points out, the three-digit level FDI data are less complete because figures are in many cases suppressed in particular categories and years to ensure confidentiality for the Bureau of Economic Analysis survey.

However, Hiscox (2004) makes two unrealistic assumptions. First, while he theorizes that industrial response to cross-border capital mobility in other sectors is uniform, industrial response might vary in systemic ways if we consider inter-industry business relationships. Inward FDI in a given sector may be beneficial to some neighboring sectors but not to other sectors. The different impacts across sectors will be caused by goods sales connections between FDI-receiving sectors and their upstream or downstream sectors. As a result, different neighboring sectors' responses to inward FDI in a given sector may vary as well. A related limitation of Hiscox (2004) is its assumption of uniformly mobile labor across sectors. While unskilled labor could presumably be hired anywhere there is a demand for it, skilled workers invest in acquiring a limited bundle of competencies. If the bundle in one sector is similar to the bundles of skills observed in another sector, the mobility of labor between sectors might be substantial. Otherwise, labor could well resist leaving a sector if its skills command a premium nowhere else. Thus labor should be assumed to have varying degrees of mobility across sectors.

After reviewing the existing literature on FDI policies in the next section of this chapter, I will discuss my theories explicitly and develop hypotheses in the next chapter.

2.3 FDI Politics

In this section, I discuss how FDI policies have been developed in the US and explain why this research focuses on the demand side of trade politics rather than that of FDI.

Historically, the US government has maintained a liberal policy toward inward and outward FDI since the late 19th and early 20th centuries. There were noticeable exceptions,

though, during the First and Second World Wars and the late 1980s. For example, in 1917, during the First World War, the Trading with the Enemy Act (TWEA) was passed, which gave the president the authority to seize assets owned by foreigners.⁵³ When Europe's economy recovered between the late 1950s and the 1970s, inward FDI from European countries increased, and, in 1975, the Committee on Foreign Investment in the US (CFIUS) was established to monitor and evaluate the impact of inward FDI into the US.⁵⁴ In the 1980s, Japan rose as one of the leading foreign investors in the US, especially after the Plaza Accord in 1985, which devalued the US dollar by 50 percent against the Japanese yen and Germany's deutsche mark over the next two years.⁵⁵ When the Japanese computer and semiconductor company Fujitsu Limited tried to acquire California's Fairchild Semiconductor Corporation,⁵⁶ US legislators criticized the idea of selling out US firms to foreign competitors (Alvarez 1989). As a result, in 1988, the US Congress passed the Exon-Florio Amendment, which authorizes the President to investigate foreign acquisitions, mergers and takeovers of US firms from the perspective of national security (Graham and Marchick 2006).⁵⁷

⁵³ Woodrow Wilson seized virtually all US assets owned by Germans during 1917-8, and so did Franklin D. Roosevelt in 1941 (Graham and Marchick 2006).

⁵⁴ CFIUS was originally established by Executive Order no. 11,858. It is chaired by the Secretary of the Treasury and includes representatives from 11 other agencies, including the departments of Defense, State, and Commerce, as well as Homeland Security. The Treasury Department describes its purpose as this: "CFIUS seeks to serve US investment policy through thorough reviews that protect national security while maintaining the credibility of our open investment policy and preserving the confidence of foreign investors here and of US investors abroad that they will not be subject to retaliatory discrimination." Source: <http://www.ustreas.gov/offices/international-affairs/exon-florio/>.

⁵⁵ The devaluation of the US dollar made the asset value of US firms lower than before.

⁵⁶ Ironically, when Fujitsu made its bid, Fairchild was not a US company but a subsidiary of a French company, Schlumberger Limited, which had bought Fairchild years before.

⁵⁷ Between 1988 and 2005, there have been total of 1,593 filings, 25 investigations, and only one presidential rejection (the case of the China National Aero Tech's attempt to buy MAMCO Manufacturing in 1990). Source: Department of Treasury (Graham and Marchick 2006).

Investigating the demand side of FDI politics is a demanding job, because there exist no “domestic institutions to channel demands and supply the policy output” (Crystal 1998). Conducting case studies on industry demands over the issue of inward FDI policy in several US manufacturing sectors, Crystal (1998) argues that domestic producers do not have “procedures to follow, laws to invoke, or formal government agencies” to address when firms want to demand a restrictive policy against inward FDI. The only exceptions are national security concerns embedded in the Exon-Florio Amendment, which was actually established not in response to demands from industry interest groups, but by political processes among elected policymakers who decide critical foreign economic policies (Kang 1997). In short, US IFDI policies have been developed by political leaders’ initiatives and concerns about national security rather than by industrial demand.

Given this situation, I understand that undertaking a quantitative approach to investigate industrial lobbying in inward FDI policies will be challenging, and for this reason, this research focuses on industry lobbying for trade policies.

CHAPTER THREE

THEORY AND HYPOTHESES

Why should we pay attention to inter-sectoral goods and labor market relationships when investigating the linkage between cross-border capital flows and trade politics? How can sale and purchase dependencies between upstream and downstream sectors, as well as inter-sectoral labor mobility, influence industry lobbying for protection when more cross-border capital flows into the US? Why would inter-industry business connections and labor mobility affect the fortunes of a given sector when foreign direct investment (FDI) flows into its business partner sector(s)? To what extent would the changes in (or expectations for) the fortunes of an industry trigger it to make political efforts to influence trade policies?

In this chapter, I explain my theories on how inter-sectoral goods and labor market relationships will affect a given sector's demand for trade protection when its neighboring sectors receive inward FDI. I do not address the supply features of the "market" for policy, not only because the demand side is complex enough, but also because I am only investigating events in one country, and that country's political institutions and party system are relatively stable over the time period that I investigate.

This research adopts a sectoral approach and assumes that capital and labor are relatively specific to a given sector in which they are employed. Capital is, however,

assumed to be mobile across borders within a sector.⁵⁸ Because previous studies of trade politics have shown that a sectoral empirical model generally performs better than an equivalent factoral model (e.g., Magee et al. 1989; Frieden 1990; Irwin 1994, 1996; Fordham and McKeown 2003), it is reasonable to investigate whether a sectoral model of labor and capital flows would similarly perform better than the factoral approach to modeling the effects of these factors.

I assume that the domestic economy is in equilibrium, and that the only relevant disturbance to the equilibrium is cross-border direct investment.⁵⁹ I then address how inward FDI affects the ownership structure and production in FDI-receiving sectors, and the behavior of upstream and downstream sectors.

This research considers only foreign direct investment rather than portfolio investment or other types of foreign participation in the US economy. Direct investment involves “actual control over what is owned,” while portfolio investment is “simply the establishment of claim on an asset for the purpose of realizing some returns” (Graham and Krugman 1995).⁶⁰ By definition, portfolio investment does not alter the control of corporate assets. Because it usually takes place in a secondary securities market where most transactions are not initial public offerings, I assume that these transactions do not change the quantity or quality of the goods sold or purchased by the relevant firms. Nor does this

⁵⁸ A variety of sources determine the degree of capital mobility across borders. They include: interest rates; labor costs; strength of the home economy; market size of the host economy; government regulations and policies; distance and culture; firm-specific advantage factors, etc. (Huang 1997).

⁵⁹ Since this research deals with the effects of inward FDI, outward investment from US multinationals to foreign host countries is assumed to be in equilibrium as well.

⁶⁰ The International Monetary Fund (IMF) defines FDI as “Investment that is made to acquire a lasting interest in an enterprise operating in an economy other than that of the investor, the investor’s purpose being to have an effective voice in the management of the enterprise” (Julius 1991). The US Department of Commerce defines a foreign investment as direct when a single investor has acquired a stake of 10 percent or more in a US firm (Graham and Krugman 1995).

research investigate strategic alliances or licensing agreements between foreign competitors and domestic firms, because these types of inter-firm cooperation do not involve flows of capital across borders.⁶¹ In short, this research deals with only two types of foreign direct investment: greenfield investments and merger and acquisitions (M&A) investments.

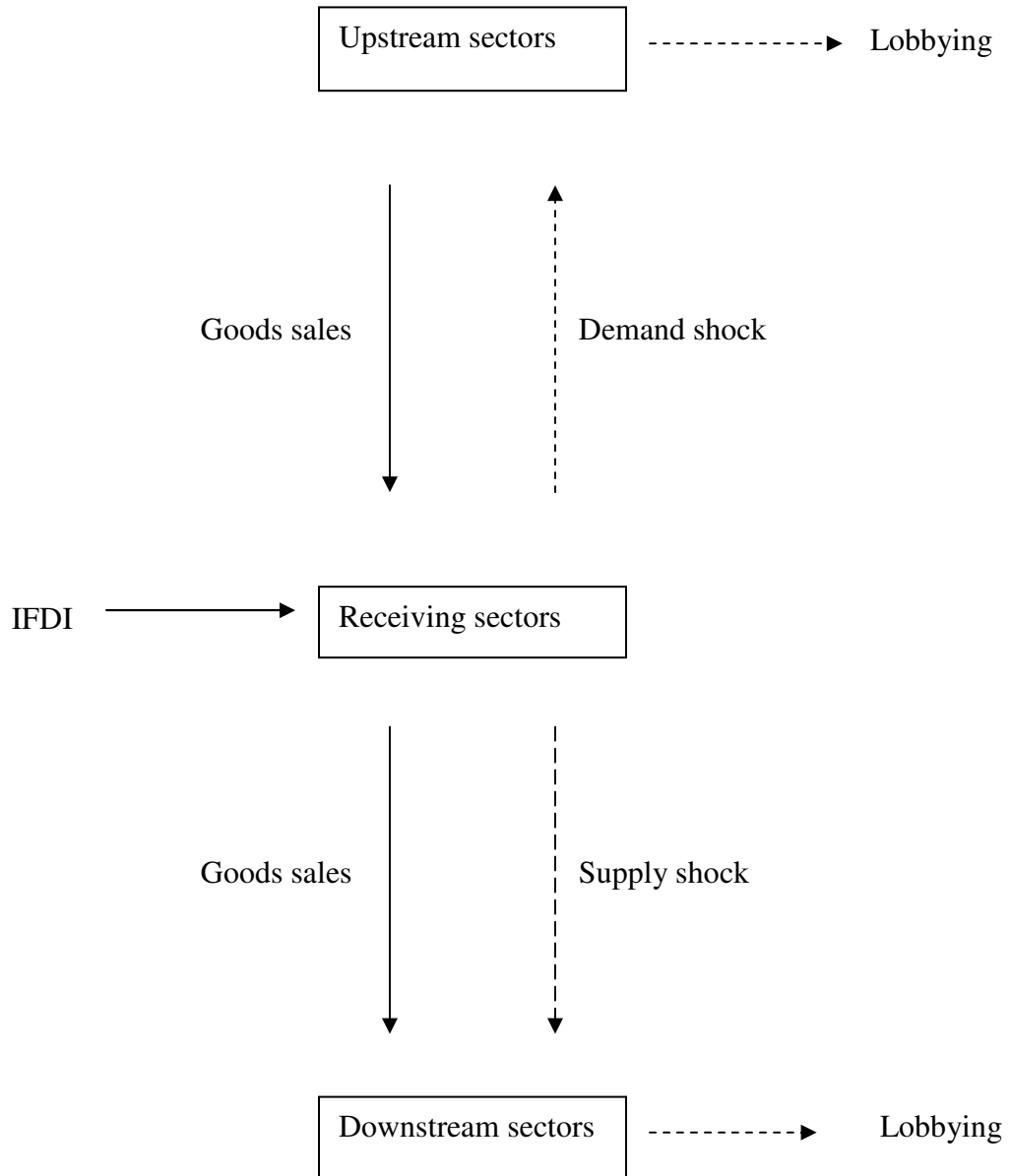
3.1 Inter-sectoral Goods Market Relationships

This research examines inter-sectoral goods market relationships as a source of changes in a given sector's political activity in trade politics. I expect that a given sector's reaction to events in upstream or downstream sectors is an increasing function of its input or output dependency on the sector in question. I treat dependency as the proportion of a given sector's total purchases (sales) that involve transactions with the upstream (downstream) sector.

This research considers only the relative importance of business relationships between upstream and downstream sectors. The absolute size of sales from a sector to another is relevant only to assessing the amount of resources that the sector devotes to influencing political activity. If the stakes are small, then little will be invested in securing them. Below I explain how a given sector's sale and purchase dependencies affect the magnitude of industry lobbying for trade protection when its neighboring sectors receive FDI. Figure 3.1 depicts inter-sectoral goods sales relationships, inward foreign direct investment, and their impacts on industry lobbying.

⁶¹ This research sheds light on internationally mobile capital as one of the sources of modifications in US trade politics. However, it may be reasonable to suspect that strategic alliances or licensing agreements between foreign and domestic firms could affect trade politics as well. I leave these issues for future research.

Figure 3.1 Inter-sectoral Business Relationships, IFDI and Industry Lobbying



3.1.1 Upstream Sectors' Sales Dependency on Downstream Sectors

If a given sector has a relatively close business connection with a particular downstream sector, how could foreign direct investment into the downstream sector affect the fortunes of the upstream sector and cause it to modify its lobbying activities?

Consider the goods sales connections of a sector selling producers' goods. The sector sells its output to various downstream industries, which use them to produce final goods. I assume that the domestic economy has been in equilibrium with inward foreign direct investment (FDI) prohibited, but now the government allows inward FDI and foreign firms engage in local production.

When FDI takes place in a sector, it is either greenfield investment or merger and acquisitions (M&A). How will the two types of FDI affect a sector that receives them? There are two kinds of impacts: changes in ownership structure and in industry production. If foreign direct investment does not change the effective control of domestic firms, then, for purposes of this study, it cannot be distinguished from portfolio investment. Both greenfield investment and M&A modify the receiving industry's ownership structure. When greenfield investment occurs, foreign investors build new production facilities and the receiving sector's total domestic production will increase, all else equal. By contrast, if foreign investors buy control of existing local firms, there is no change in the sector's total production, all else equal. Thus, while both greenfield and M&A types of foreign investment have an effect on the corporate ownership structure of an industry, a positive industry size effect occurs only when greenfield investment takes place.

How will changes in ownership structure and in industry production induced by inward FDI in downstream sectors influence industry lobbying in upstream sectors? I argue

that ownership and production changes in FDI-receiving sectors will transmit a demand shock to upstream sectors, which in turn will affect the upstream sectors' political activities. On the one hand, the modification of corporate ownership structure after M&A will induce foreign-controlled firms to shift purchases of intermediate goods away from domestic and towards foreign suppliers. This will bring a negative demand shock to upstream sectors. On the other hand, an increase in industry production after greenfield investment might bring a positive demand shock to upstream sectors. In my model both greenfield and M&A types of FDI could provoke a negative demand shock, but only greenfield investment could trigger a positive demand shock. In any case, I expect that in my empirical analysis to find that the effect of M&A cross-border investment might dominate the overall effect of incoming foreign direct investment for the period I examine. During the 1980s, the major type of inward FDI in the US was M&A rather than greenfield investment; the dollar value of acquisitions was several times that of new establishments of production facilities (Graham and Krugman 1995).

Why do foreign and US firms in the same market procure intermediate input goods differently? How are their different sourcing patterns related to corporate ownership structure? How will downstream firms' input sourcing influence the fortunes of upstream sectors and their lobbying activities?

I argue that IFDI into downstream sectors will give a negative demand shock to domestic upstream sectors when foreign firms gain market share in downstream sectors at the expense of domestic firms, or – in case of M&A – merely import more intermediate input goods than US firms do. The Bureau of Economic Analysis (BEA) reports that US affiliates of foreign firms rely on imported inputs to a much greater degree than do domestically

owned firms. In 1989, the import share of intermediate inputs by US manufacturing affiliates was 17 percent, while that of US owned manufacturing firms was 11 percent (Zeile 1998).⁶² Thus, US affiliates of foreign firms tend to import substantially more inputs than US owned firms in the same sector do.

The significant difference in import propensity between foreign and domestically owned firms in the US arises because foreign investors usually undertake intra-firm trade when they engage in FDI, particularly at the early stage of the investment, to procure input goods unavailable from local suppliers (Goodman et al. 1996; Crystal 1998). The portion of intra-firm trade in total US imports has been substantial. In 1982, intra-firm trade accounted for 32 percent of total US imports of goods and services, increasing to 37 percent in 1993 (Whichard and Lowe 1995).⁶³ Moreover, during the 1980s, two-thirds of total imports by US manufacturing affiliates came from their foreign parent firms or other foreign affiliates of the parent firms (Zeile 1997). Thus US affiliates have had higher import propensities, and the majority of their imports has been supplied through intra-firm trade.

Another source of US affiliates' greater tendency to import input goods is long-term supply contracts between foreign firms and their home country suppliers. Caves (1996) suggests that if transaction costs for switching suppliers are substantial, firms usually will sign long-term contracts with their suppliers. In such a situation, foreign firms controlling production in the US would likely maintain their reliance on previously contracted suppliers, often located in their home country or in third countries, for supplying their US affiliates.

⁶² In 1994, the portion of imported inputs increased to 19 percent for US affiliates, while that of US owned firms remained 11 percent (Zeile 1998).

⁶³ This measurement includes imports from foreign affiliates to US parent firms and those from foreign parent firms to US affiliates.

When foreign firms produce in the US, their home country suppliers follow them by making their own direct investments in the US market. There are two incentives for foreign investors to do so. When foreign firms produce locally, either building new production facilities or buying out US firms, the foreign investors may require specifically designed parts and input goods US suppliers cannot provide. For instance, Japanese manufacturing firms induced their own suppliers to follow them overseas, because the Japanese suppliers already met their customers' technological requirements for intermediate goods (Wassmann and Yamamura 1989). Thus, the dependence of the original investing firm on inputs that are differentiated products, along with requirements for close communication and easy goods movement between supplier and purchaser and substantial investment on both sides in a long-term relationship, create incentives for suppliers to locate close to their customers, even if there is not a strong formal contractual relationship between them and their customers. Another incentive to spur home country suppliers to follow their customer firms abroad is domestic content regulations that require a firm to use a certain amount of domestically produced inputs in producing its final outputs. For example, in the 1980s, when Japanese automobile companies began US production, Japanese parts suppliers accompanied them for this reason (Graham and Krugman 1996).⁶⁴ When US affiliates procure inputs from their

⁶⁴ Domestic content requirements have usually been imposed by developing countries to encourage industrialization. Yet Japanese automobile companies' practice of using Japanese parts when they produce cars overseas brought the issue to Europe and the US. For example, France declared that the Nissan Bluebird, a Japanese car made in Britain, would be included under France's voluntary export restraint (VER) with Japan because the car assembled in Britain was actually a Japanese car using inputs from Japan and not from Britain (Krugman and Obstfeld 1994).

home country suppliers who are also producing in the US, domestic suppliers cannot sell input goods to the foreign owned downstream firms.⁶⁵

In sum, when foreign firms engage in FDI in downstream sectors, new foreign ownership can influence the fortunes of upstream sectors when US affiliates tend to procure inputs from their own supply sources rather than local suppliers in upstream sectors. On the one hand, when foreign firms buy control of domestic firms, and switch their input source from domestic upstream sectors to imports, domestic suppliers lose previous customers, all else equal. For example, if DaimlerChrysler begins to procure spark plugs from German suppliers rather than US suppliers that previously sold the plugs to Chrysler before the merger, the US suppliers lose customers, all else equal. In this case, the upstream sectors will have a stake in blocking imports through protectionist lobbying. On the other hand, when foreign firms engage in greenfield investment, US suppliers will also have a stake in blocking imports. First, if foreign firms in downstream sectors begin to gain market share and tend to procure inputs from their own sources rather than US upstream firms, US upstream firms' sales will fall and their stake in blocking imports will increase, all else equal. Under assumptions of highly competitive markets and no rigidities, any situation where demand growth does not keep pace with supply growth will involve falling prices for producers. Second, even if foreign firms in downstream sectors do not gain market share, if trade barriers are provided against input goods foreign firms import, their production costs for final

⁶⁵ The arrival of foreign input providers might also involve increased competition for the domestic firms supplying inputs in markets other than the sector receiving the original FDI. For example, if a Japanese manufacturer of spark plugs builds facilities in the US to make spark plugs for Toyota, it may sell spark plugs to other sectors (e.g., aircraft, generators, other sectors that use internal combustion engines).

goods will increase, and domestic demand for the foreign firms' final goods will decrease.⁶⁶ All other things being equal, decreased demand for foreign firms' goods will trigger increased demand for domestically owned firms' final goods. Then, domestic upstream firms that supply input goods to the domestic downstream firms will benefit.⁶⁷ In this case, domestic upstream sectors have a stake in blocking imports and may resort to lobbying for protection. For example, when Japanese and European firms invested directly in the US automobile industry in the 1980s and 1990s, US suppliers took a protectionist stance against the goods purchased by the auto producers because new foreign automobile makers procured their input goods from their own suppliers or parent firms rather than buying from US suppliers (Goodman et al. 1996).

If an upstream sector has a relatively low level of sales dependency upon an FDI-receiving sector, the upstream sector will devote relatively a smaller effort to lobbying, because its fortunes will not be heavily influenced by FDI in the downstream sector, all else equal. In contrast, if an upstream sector is highly dependent upon its FDI-receiving downstream sector, the upstream sector will devote more to lobbying efforts, all else equal. I argue that even a competitive upstream sector will do so, because once it is highly dependent upon local customers (i.e., downstream firms) for its goods sales, its stake in blocking imports will increase if FDI-receiving downstream firms gain market share (at the expense of domestic producers who are purchasing their inputs from other domestic producers) and tend to source inputs away from the upstream sector. This will intensify the upstream sector's

⁶⁶ This will be favored by a coalition of domestic producers in the receiving sector and domestic upstream suppliers.

⁶⁷ I thank Thomas Oatley for pointing this out.

lobbying activities because the investment in the downstream sector will have a negative demand shock to the upstream sector.

When FDI flows into a downstream sector, changing industry ownership structure will have a significant impact on industry procurement patterns in which market mechanisms are complicated by the presence of asset specificity. The industry procurement patterns will influence upstream sectors' fortunes, which in turn should affect the sectors' stake in blocking imports.

My theory of upstream sectors' sales dependency and changing ownership structure in FDI-receiving downstream sectors yields this hypothesis:

H₁: The more an upstream sector depends upon sales to a sector receiving foreign direct investment, the more effort it will devote to lobbying for protection from imports, all else equal.

I have discussed how inward FDI in receiving sectors might generate a negative demand shock to upstream sectors and thereby influence the upstream sectors' lobbying in trade politics.

Incoming greenfield investment could generate a positive demand shock to upstream sectors if incoming foreign firms do not rely on intra-firm trade or long-term supplier relationships to provide their inputs. When production expands, the receiving sector will demand more input goods than before. One source is local upstream sectors. More downstream purchases of their intermediate goods benefit the upstream sectors. On the other hand, since the US is a relatively open economy, foreign producers could supply the additional intermediate input goods. In this case, foreign suppliers can gain, but domestic

upstream sectors may not. They might even lose once import penetration level rises, all else equal.⁶⁸

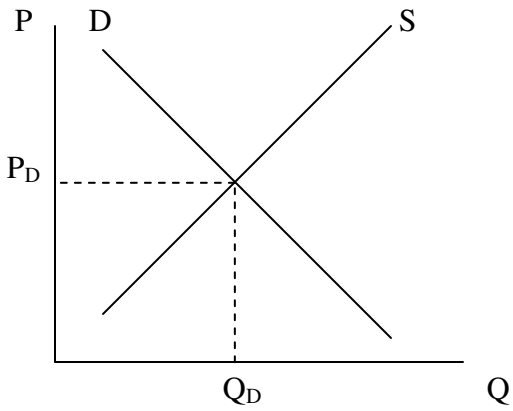
How can we expect upstream sectors to react to the expansion of a downstream sector after it has received FDI? A partial equilibrium model of a competitive market, with no rigidities allows us to predict that various upstream sectors' responses will depend on the upstream producers' level of international competitiveness.⁶⁹ If an upstream sector is import-competing, then once the receiving sector increases demand for input goods, the upstream sector's stake in blocking imports will also increase, and the upstream sector will lobby for more protection, all else equal. The assumption is that a sector will devote more resources to obtaining a given political outcome if the value of the outcome increases. Hence, a prohibition on the import of a downstream sector's input goods would be worth more for the upstream sector, all else equal. Figure 3.2 shows that an outward-shifting demand curve for input goods, which occurs after the downstream sector receives greenfield FDI and thereby expands production, can increase upstream sectors' stakes in blocking imports.

⁶⁸ This is a negative demand shock case discussed above.

⁶⁹ Industry competitiveness is represented by the net difference between the ratio of imports over shipments and the ratio of exports over shipments of a given sector. An industry's ability to compete internationally is defined as the industry's comparative advantage (Lavergne 1983). In fact, a given sector can produce globally competitive goods and non-competitive goods at the same time. However, on the whole, if a sector produces more competitive goods than non-competitive goods, its export ratio given its shipments size will be relatively higher than in the opposite case. In general, if a given sector is export-oriented, it is able to export more of the goods it produces and fewer goods are imported, given the sector's size. On the contrary, if a given sector is import competing, it exports fewer goods, if any, and more goods are imported given its size.

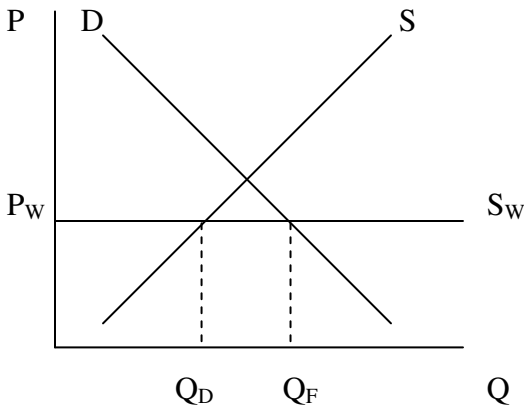
Figure 3.2: Outward Shift of Demand Curve After Inward FDI in Downstream Sector

(1) Closed economy



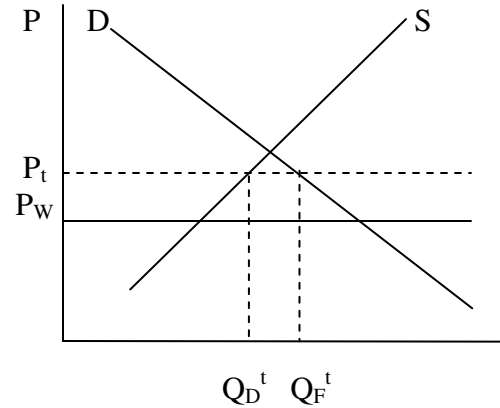
D: Domestic demand
 S: Domestic supply
 P_D : Domestic price
 Q_D : Quantity supplied by domestic upstream producers

(2) Open economy-imports

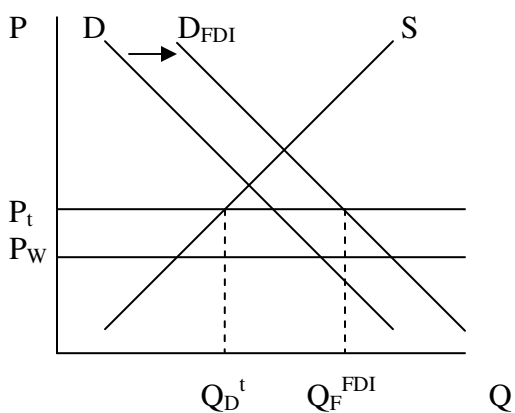


S_w : World supply
 P_w : World price
 P_t : Price after tariffs
 Q_D : Quantity supplied by domestic upstream producers
 $Q_F - Q_D$: Quantity supplied by foreign producers
 $Q_F^t - Q_D^t$: Quantity supplied by foreign producers after tariffs

(2-1) Open economy - tariffs

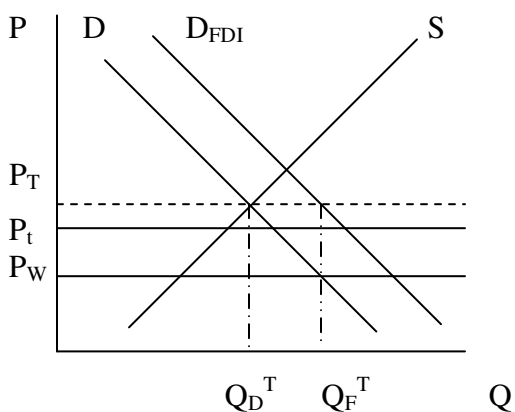


(3) Open economy – Change in downstream demand after FDI into the downstream sector



D_{FDI} : Increased demand from FDI-receiving downstream sector
 $Q_F^{FDI} - Q_D^t$: Quantity supplied by foreign producers after FDI

(4) Open economy – imports, FDI into downstream sector and additional tariffs



P_T : Price if additional tariffs are imposed
 $P_T - P_t$: Price increase if additional tariffs are imposed
 $Q_F^T - Q_D^T$: Quantity supplied by foreign producers if additional tariffs provided

When an upstream sector is import-competing, if the upstream sector is highly dependent upon the downstream sector for its sales, then the upstream sector's stake in blocking imports increases accordingly. As a result, the highly dependent upstream sector will devote more effort to obtaining trade protection, all else equal. On the other hand, if the upstream sector is relatively less dependent upon the downstream sector, then the upstream sector's stake in blocking imports is relatively low. In this case, the less dependent upstream sector will spend fewer resources for its protectionist demand.

Meanwhile, when an upstream industry is internationally competitive and producers in that industry worldwide cannot easily differentiate their products from the production of other producers in the sector, then the value of a prohibition of foreign imports will be small or nonexistent, because the level of import penetration will be relatively small and the incoming foreign owners by assumption would have no particular interest in relying on intra-firm trade or long-term supply contracts. In this situation, the competitive upstream sector has no incentive to demand protection, all else equal. Moreover, because the upstream sector produces competitive intermediate goods, the FDI-receiving downstream sector will be more likely to procure the input goods from the domestic upstream sector rather than less competitive imports, and the downstream sector has no motive to expend effort to change trade barriers. In short, once inward FDI in the downstream sector benefits the competitive upstream sector, the upstream sector has no incentive to engage in lobbying efforts for trade protection, all else equal.⁷⁰

⁷⁰ Alternatively, the competitive upstream sector would not demand protection because of the fear of retaliation from foreign competitors (Helleiner 1977; Fong 1983; Milner 1988). Should the industry demand protection, foreign competitors will induce governments in their home markets to impose retaliatory protection against the upstream sector's goods.

My theories on industrial competitiveness and the sales dependency of a given upstream sector upon its downstream sector yield another hypothesis:

H₂: When an upstream sector is not competitive, the more the sector depends upon sales to a sector receiving foreign direct investment, the more effort it will devote to lobbying for protection from imports, all else equal.⁷¹

Upstream sectors' dependency upon downstream sectors matters because a demand shock induced by inward FDI in a downstream sector gives upstream sectors incentives to lobby in trade politics. An increase in industry production or changes in ownership structure after FDI in a downstream sector is a source of demand shock to an upstream sector. When there is a positive demand shock and no product differentiation, intra-firm trade, or long-term supplier relationships, import-competing upstream sectors lobby for increased rents that will be provided by trade barriers. Export-oriented sectors do not lobby because the positive demand shock benefits them. When higher import propensity of foreign firms in downstream sectors causes a negative demand shock, upstream sectors tend to lobby more to compensate loss, all else equal.⁷²

Both Hypotheses 1 and 2 imply that upstream sectors' sales dependency upon downstream sectors influences the magnitude of industrial lobbying in the era of increased cross-border direct investment. However, while Hypothesis 2 focuses on an upstream

⁷¹ Since a given upstream sector's competitiveness is a continuous concept from negative to positive, as the sector's competitiveness increases, the magnitude of extra protection demands will decrease accordingly.

⁷² However, alternatively, even after foreign firms engage in direct investment in downstream sectors, the investment may not trigger a demand shock in upstream sectors if domestic firms reduce production accordingly. In this case, newly foreign-owned firms in downstream sectors simply gain market share previously owned by domestic firms, and domestic upstream sectors switch their customers from US firms to foreign firms producing in the US. An assumption is that input goods are perfect substitutes. I thank Thomas Oatley for pointing out this case.

sector's competitiveness, Hypothesis 1 suggests that, independently of its level of comparative advantage, an upstream sector's level of sales dependency should itself affect industry lobbying. This is because even export-oriented upstream sectors will want to limit foreign inputs flowing into the US when the receiving sector is characterized by the supply rigidities that have been already mentioned. In such a situation, the domestic suppliers' comparative advantage is irrelevant to the purchasing decisions of the foreign firm (at least, until the difference in price or quality of goods between the domestic and the foreign input suppliers become relatively large). Comparing empirical tests on Hypotheses 1 and 2 will have important implications in the discussion of industry lobbying in trade politics in the era of economic globalization. If sales dependency has independent and substantial impacts on industry lobbying, then we should highlight the structure of inter-industry business connections in addition to industrial competitiveness when we take sectoral approaches in trade politics.

3.1.2 Downstream Sectors' Purchase Dependency on Upstream Sectors

How would inward FDI affect lobbying activities in downstream sectors? Should inter-sectoral goods market relationships have any effect on the political efforts of downstream sectors? If so, how would the effects of purchase dependency be different from those of sales dependency?

Consider a given downstream sector observing foreign direct investment in the receiving sector. When foreign investors engage in greenfield investments in the US, there will be an increase in industry output, all else equal (It might be assumed that some or all of

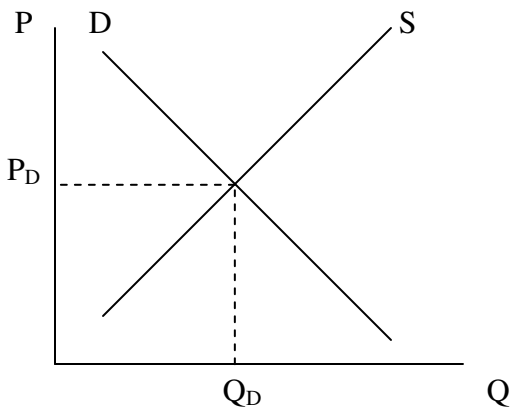
that increase is exported. However, as an empirical matter this assumption is unrealistic, because foreign investors usually undertake market-oriented FDI to sell output in the US, which is the largest market in the world).⁷³ As in the upstream case, when foreign firms merely take control of local firms, I assume that there is no substantial change in industry production, all else equal.

How would a FDI-receiving sector's production increase influence the intermediate goods market? As Figure 3.3 shows, when industry production expands, the domestic supply curve of intermediate goods the upstream sector produces will shift outward, all else equal. The outward shift of the supply curve will reduce the price of the good and increase the quantity of the good available, if all else remains constant. When the price of intermediate goods produced by the FDI-receiving upstream sector declines, its downstream sector will gain.

⁷³ Gross Domestic Product (GDP) at Purchase Power Parity (PPP) level is highest in the North America Free Trade Area (NAFTA), surpassing the European Union (EU). Source: CIA World Fact Book 2005.

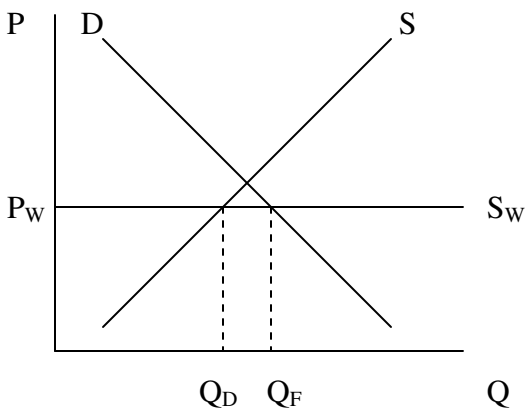
Figure 3.3: Outward Shift of the Supply Curve of Receiving Sector

1) Closed economy



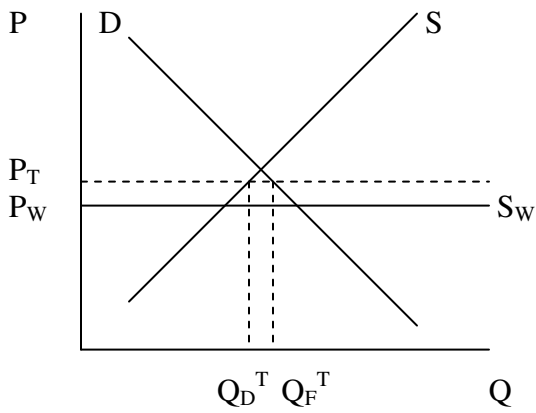
D: Domestic demand
 S: Domestic supply
 P_D : Domestic price
 Q_D : Quantity supplied by domestic upstream producers

(2) Open economy-imports



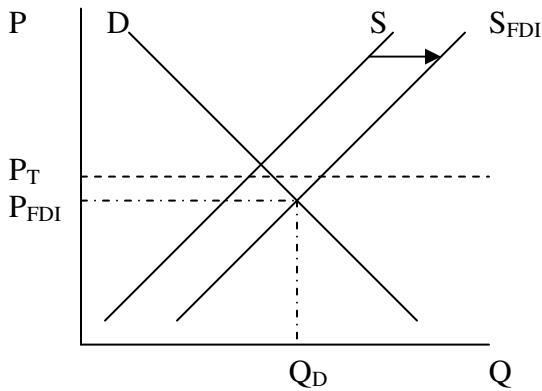
S: Domestic supply
 S_W : World supply
 P_W : World price
 Q_D : Quantity supplied by domestic upstream producers
 $Q_F - Q_D$: Quantity supplied by foreign producers

(3) Open economy – imports and tariffs



P_T : Price after tariffs imposed
 $P_T - P_W$: Price increase after protection in upstream sector
 $Q_F^T - Q_D^T$: Quantity supplied by foreign producers

(4) Open economy – FDI into upstream sector



S_{FDI} : Supply increase by FDI-receiving sector
 P_{FDI} : Price after FDI into receiving sector
 $P_T - P_{FDI}$: Price decrease after FDI into upstream sector
 Q_D : Quantity supplied by US and foreign-owned producers in receiving sector

Any industry that purchases intermediate goods from an FDI-receiving upstream sector would benefit as long as the price of the goods decreases after the supply expands. Here, the level of purchase dependency of a given upstream sector upon the downstream industry determines the relative size of the gains. A sector that buys a lot of the intermediate goods (considering its sales) will benefit more, while another sector that purchases relatively smaller amounts of the goods (considering its sales) will benefit less. Thus, if a downstream sector is highly dependent upon a receiving sector, the expansion of the goods market after greenfield investment in the upstream sector will provide more benefit to the downstream sector, all else equal. By contrast, if a downstream sector is less dependent upon its upstream sector, it will have smaller gains from the lowered input costs induced by inward FDI in the upstream sector.

In this research I assume that a given downstream sector's reduced input costs will reduce its vulnerability to international competition, all else equal. In this situation, the downstream sector will reduce its magnitude of lobbying for trade protection because the gains from import restrictions on its final goods would be smaller: the price difference between the domestic price and the world price will have decreased or even disappeared, and the quantity sold by foreign competitors in the domestic market will also have decreased. In terms of the above diagrams, this is represented by $P_T - P_{FDI}$.

How would a downstream sector's purchase dependency affect the magnitude of its political efforts? If a downstream sector gains heavily because it is highly dependent upon its upstream sector for input goods, the magnitude of reduction in its lobbying efforts will be

accordingly substantial, all else equal.⁷⁴ In contrast, if a downstream sector has a relatively low purchase dependency upon its upstream sector, the gains from lowering input costs will be small, if any, and the magnitude of reduction in its lobbying efforts will also be small, all else equal. Thus, how highly a given downstream sector is dependent upon its upstream sector (i.e., the level of purchase dependency) will affect its lobbying efforts when the upstream sector receives FDI and expands production.

This research argues that a downstream sector will not change its trade policy preference when there is no substantial change in industry production when M&A- type foreign investment takes place, all else equal. If production increases after greenfield investment in upstream sectors, a downstream sector will benefit from reduced procurement costs and may devote less effort to protectionist lobbying, all else equal. Because neither process reduces the welfare of the downstream sector, I hypothesize that there should be either no increase or a net decrease of lobbying efforts from the downstream sector when its upstream sector receives FDI.

H₃: The more a downstream sector depends upon purchases to a sector receiving foreign direct investment, the less effort it will devote to lobbying for protection from imports, all else equal.

As discussed in Chapter Two, Hiscox (2004) has investigated a sector's lobbying patterns when *other* sectors have a higher level of cross-border capital mobility. He argues that a given sector's increased capital mobility has a *positive* effect on another sector's

⁷⁴ If we assume a minimal fixed cost for lobbying, the gains from lowering procurement cost and the magnitude of decreasing lobbying efforts will be a step function rather than a linear function. However, this research assumes that if a given sector is spending a substantial amount of resources for lobbying, there should be a "net" decrease of lobbying efforts, all else equal. I thank Mark Crescenzi for pointing out this issue.

lobbying, since the latter is losing labor to the FDI-receiving sector.⁷⁵ My focus and assumptions differ from his. I distinguish between upstream and downstream sectors rather than following his method of aggregating all sectors. When an upstream sector is heavily dependent upon its downstream sector, increased inward FDI in the downstream sector will usually have a *positive* impact on the upstream sector's lobbying for trade protection, all else equal (Hypothesis 1). However, incoming FDI in an upstream sector will have a *negative* effect on its downstream sector's lobbying efforts, if the increased local supply of goods benefits the downstream sector, *ceteris paribus*, or no effect if the incoming investment is M&A related (Hypothesis 3). A more differentiated approach ought to be more accurate if sales or purchase dependency mediates the effects of foreign investment in other domestic sectors. Treating other sectors as if they are all of equal importance is a comparatively restrictive assumption.

Hiscox (2004) posits that labor market effects are the primary driver of changes in a sector's political effort. Like Hiscox (2004), I also treat labor market effects, but my approach there also differs from his.

3.2 Inter-sectoral Labor Mobility

Goods market effects are not the only determinant of inter-sectoral relationships. The results obtained by Hiscox (2004) suggest that labor mobility across sectors also could affect the relationships.

⁷⁵ While Hiscox (2004) deals with international capital mobility including outward and inward FDI, my research deals with inward FDI only. Thus the two studies are not directly comparable.

In the sectoral (or Ricardo-Viner) model of trade politics, capital is usually considered as a specific factor that is immobile across industries. By contrast, another factor of production, labor, is assumed in the literature to be homogenous and mobile across sectors (but not across borders).⁷⁶ Hiscox (2004) investigated the impact of cross-border capital mobility on trade politics, by using Jones' (1971) specific factor model, which employs two types of specific capital (internationally mobile or not) and one type of labor, which is mobile and shared across sectors in an economy. Both Jones (1971) and Hiscox (2004) treat labor as a uniformly mobile factor in the interest of working with a formally tractable model. If that objective gives way to an emphasis on empirical accuracy, then an approach that treats labor flows into and out of sectors as potentially constrained might be preferable. In the Jones (1971) model, the assumption of mobile labor is crucial because the mobility determines a given sector's fortunes when other sectors have higher levels of inward cross-border capital and attract labor. I investigate whether the mobility of labor in a given sector will differ substantially from that of another sector, both in terms of where labor goes and how easily it does.⁷⁷ While labor in some sectors can move to other sectors with relative ease, labor in other sectors may be relatively specific to the sector in which it is employed.

I assume that different levels of labor mobility in various sectors arise from inter-sectoral variation in the level of specificity of labor skills. If an industry hires highly sector-specific skilled labor, then labor will be less mobile to other sectors because the specific labor skills would not be useful to other sectors that employ labor with different kinds of skills. Likewise, the sector will be less able to recruit new labor from other sectors. Then the

⁷⁶ Another factor of production is land. Since this research deals with manufacturing industries only, land is not included in this analysis.

⁷⁷ Likewise, its source of labor might well differ from the sources of another industry. And the industries that absorb its labor might also be different from those of another sector.

sector with highly sector-specific skilled labor will be more likely to have a relatively low level of labor mobility, all else constant. In contrast, if an industry hires relatively less sector-specific skilled labor, then the labor will be more mobile to other sectors that also employ less sector-specific skilled labor. The assumption is that non-sector-specific skilled labor is relatively easily compatible with other sectors. By the same token, the sector will be able to recruit new labor from other sectors relatively easily, since required labor skills are not highly sector-specific. Then the sector will be more likely to have a high level of labor mobility, all else equal.⁷⁸

Why should a given sector's level of labor mobility matter when other sectors receive greenfield-type FDI and draw labor from the given sector? If a given sector has a relatively high level of labor mobility, the industry is assumed to employ less sector-specific skilled labor.⁷⁹ In this case, the capital owners employing the less sector-specific skilled labor may be more likely to lose labor to given FDI-receiving sectors that expand production and attract labor, all else equal. Should labor move to the FDI-receiving sectors, the capital owners in the labor-losing sector will be subject to decreased returns. Then the owners of the capital will have an incentive to lobby for trade protection to compensate for the loss. In contrast, if a sector employs highly sector-specific skilled labor, which is not compatible with other sectors, the owners of capital in the sector may not worry about losing labor to other sectors

⁷⁸ For example, assume that the apparel industry receives cross-border investments, expands local production and attracts labor. It can be expected that labor employed in the textile industry could be relatively mobile to the apparel industry if the type and levels of labor skills required in both industries are similar. Capital owners of the textile industry might then lose labor to the apparel industry relatively easily, all else equal. In contrast, the electrical machinery industry, which employs relatively sector-specific skilled labor, would be less likely to lose labor to the apparel industry, all else constant. The logic behind this prediction is that labor skills in the electrical machinery industry are relatively highly specific to the sector and are not compatible with the apparel industry.

⁷⁹ Less sector-specific skilled labor does not necessarily mean less skilled labor. This research does not distinguish between less or highly skilled labor but considers the "specificity" of labor skills used in a sector.

that receive greenfield-type FDI and attract labor. This is because sector-specific skilled labor is not easily suited to other sectors even though FDI-receiving sectors generally draw labor from other parts of the economy. Then the capital owners may make less effort to expend extra resources for lobbying activities, all else equal.

My theory of sector-specific labor skills yields another hypothesis that posits a causal relationship between inter-sectoral labor mobility and industry lobbying in trade politics when greenfield investment flows into other sectors:

H₄: The higher a sector's labor mobility, the more effort it will devote to lobbying for protection from imports when more greenfield direct investment flows into another sector, all else equal.

Since Hypothesis 4 assumes there should be a net increase in industry production after foreign firms engage in local production, it only deals with greenfield-type FDI rather than M&A-type FDI. Thus, the impact might be relatively minor when the major type of FDI is M&A rather than greenfield investment.

Discussion of model specifications, measurement of variables, and data sources will follow in the next chapter.

CHAPTER FOUR

DATA ANALYSIS

In order to test my hypotheses, I undertake a quantitative approach for several reasons.⁸⁰ First of all, all required data have been published to analyze cross-border capital flows and trade politics in US manufacturing sectors during the 1980s. In addition, a total of ninety observations (i.e., eighteen manufacturing industries in five Congressional election periods) can be tested more efficiently and parsimoniously with a quantitative method than with a qualitative one. Since the major goal of this research is to show how inter-sectoral goods and labor market relationships mattered in US trade politics in the 1980s, investigating a larger number of industry cases with a quantitative approach will provide more conclusive results than a qualitative approach that selects a couple of representative industries.⁸¹ Moreover, the more observations of inter-industry relationships that are included, the more variance among observations can be investigated.⁸²

⁸⁰ A multivariate statistical method can simplify assumptions about causes and their interrelation as variables. An examination of patterns of co-variation among the variables can be used as a basis for making general statements about relations between aspects of cases considered collectively as populations of comparable observations (Ragin 1987).

⁸¹ However, I do not claim that case studies are an irrelevant approach to test my theory. Conducting industry case studies might test my theory as well. But my quantitative approach will be more conclusive (i.e., including more cases of various sectors), and interpretation of industry lobbying activities can be more standardized than in a case study approach.

⁸² This research employs two kinds of dependent variables (i.e., the amount of industry campaign contributions and the number of industry petitions for trade protection), and currently available statistical packages provide different estimations for the analysis of each variable. I use STATA 9 SE for the analyses.

This chapter has two sections. First, I discuss the specification of regression models. Then I present how I measure each variable used in the statistical analyses, including the sources of the variables. Tables 4.1 and 4.2 provide the basic statistics and expected signs of coefficients in each variable.

4.1 Empirical Model Specification

This research examines the demand side of US trade politics during the 1980s. The unit of analysis is an individual US manufacturing sector in a single year. The number of industries covered is eighteen: two-digit Standard Industrial Classification (SIC) codes from 20 to 38, with the exception of 21.⁸³ The time span is from 1981 to 1990, which spans five Congresses (from the 97th to the 101st). I chose the eighteen manufacturing sectors because they are tradable sectors and data is readily available.⁸⁴

This research focuses on the experiences of the 1980s, because, practically, data for one of my dependent variables, industrial campaign contributions to candidates for the US

⁸³ The industries covered include: Food and kindred products (SIC code 20), Textile mill products (22), Apparel (23), Lumber and wood products (24), Furniture and fixtures (25), Paper (26) Printing and publishing (27), Chemicals (28), Petroleum and coal (29), Rubber and plastics (30), Leather (31), Stone, clay, and glass products (32), Primary metals (33), Fabricated metals (34), Industrial machinery (35), Electrical machinery (36), Transportation equipment (37), and Instruments (38).

⁸⁴ For the primary sectors (agriculture, forestry, fishing), Input-Output Benchmark data cannot be converted to SIC two-digit codes. For the mining industry, the Current Population Survey from which I have compiled the labor mobility variable does not have detailed level data (the mining industry has four sub-level categories: metal mining; coal mining; oil and gas extraction; and non-metallic minerals). According to the Bureau of Economic Analysis, sales to the federal government and industry concentration ratios are not available for the primary sectors and the mining sector. Even though not included in this research, the size of incoming FDI in the mining sector is not substantial (1 or 2 percent of the total inward FDI in the US). The service sector is not included since it was not tradable in the 1980s. The construction sector is not tradable, either.

Congress, is readily available only for the 80s.⁸⁵ In addition to the data availability issue, inward foreign direct investment into the US increased at a noticeably larger pace in the 1980s than in previous decades. While FDI flows into the US were less than 0.5 percent of gross national production (GNP) in the 1970s, they reached 1 percent at the beginning of 1980s, and 1.4 percent by the end of the decade (Graham and Krugman 1995). In 1990, US affiliates of (non-bank) foreign firms employed approximately 5 percent of the total US labor force (Lipsey 1992). Given the increased FDI flows into the US in the 1980s, it is reasonable to suspect that this investment had an impact on US political economy.

To my knowledge, no research has systematically investigated the linkage between inter-industry economic relationships and industry lobbying in trade politics. Hence my focus on the structure of inter-sectoral connections in the analysis of US trade politics will still have theoretical implications in the IPE literature, even though data availability limits the scope of the research to the decade of the 1980s.

My basic estimation method for analyzing industrial campaign contributions is the ordinary least squares (OLS) regression model with time period dummies employed to account for unspecified period effects. For example, without period dummies, if the sales of rubber and plastics increased in the year 1984 due to the Los Angeles Olympic Games, the source of increased sales of rubber and plastics will remain in the residual (i.e., error term) because no independent variable deals with that kind of period effect.⁸⁶ The inclusion of period dummy variables will control for unexplained period and trend effects. Since the main

⁸⁵ Data for other periods is out there, but the cost of mapping it into SIC categories and coding it is very high. The industry level campaign contribution data was compiled by Fordham and McKeown (2003).

⁸⁶ If the period effect is included in the error term, then the residual and explanatory variables are correlated, and this is a violation of the ordinary least squares (OLS) estimation.

concern of this research is variations across sectors, the industry fixed effects model, which analyzes variation over periods within an industry, is not employed.⁸⁷

The negative binomial regression model (NBRM) is chosen to analyze industry petitions. Negative binomial estimation for a discrete probability model is appropriate because the dependent variable is a count of petitions filed by each industry in each period (Long 1997). Since a petition filed by an industry in a given period is likely to be related to other petitions filed by the sector in the same period, the NBRM is more suitable than the Poisson model, which assumes independent events (King 1989).⁸⁸

In addition to the basic OLS and negative binomial estimations, each model will be estimated with one-period lagged independent variables to allow more time for independent variables to have an influence on dependent variables. Most campaign contributions are made before the members of Congress are elected and vote in the next congressional period. Thus, the investigation of how independent variables in the previous period affect campaign contributions in the current period is necessary to test my theory empirically.

This research employs two regression models to analyze industrial campaign contributions and two negative binomial regression models to analyze industrial petitions filed with the ITC. Campaign contributions analyses include: (1) Ordinary least squares (OLS) with period dummies and (2) OLS with lagged independent variables and period dummies. Petitions analyses include: (1) a negative binomial regression model (NBRM) with period dummies and (2) a NBRM with lagged independent variables and period dummies.

⁸⁷ I do not employ the panel corrected standard errors (PCSEs) model developed by Beck and Katz (1995), because I deal with panel data that have a smaller number of repeated observations on a larger number of sample units. The PCSEs model is more suitable for the analysis of cross-sectional time-series (CSTS) data that usually have more time-serial dominance than cross-sectional dominance (Beck and Katz 1995).

⁸⁸ Estimates of the over-dispersion parameter showed that this supposition is correct.

4.2 Variables, Measurement and Source of Data

In this section, I explain how each variable has been compiled and measured. I also predict how each independent variable will be associated with dependent variables. The predictions are based on my theory on inter-industry relationships, as well as conventional wisdom from existing literature on trade politics.

I test my theories with two dependent variables (i.e., industrial campaign contributions to protectionist candidates and petitions filed with the US International Trade Commission) employing five explanatory and five control variables.

4.2.1 Dependent Variables

Lobbying activities take place to influence the political process in ways that further the specific interests of organized groups (Grossman and Helpman 2002).⁸⁹ This research measures industrial lobbying activities for trade protection in two ways. One is by calculating the total dollar amount of campaign contributions made by each manufacturing industry to electoral candidates for the House of Representatives who voted for a protectionist bill in each of the five Congresses (from the 97th to the 101st).⁹⁰ The other is by counting the number of petitions filed by each manufacturing sector with the US International Trade Commission (USITC) for antidumping and countervailing duties for the same Congressional periods.

⁸⁹ Measuring industry pressure exercised on the government is challenging since the nature of political pressure is secret and non-quantifiable. Furthermore, the political bargaining between societal actors and the government is often not issue-specific (Lavergne 1983; Hiscox 2004).

⁹⁰ The 97th Congress ran from 1981 to 1982, and the 101st ran from 1989 to 1990.

Political Action Committees (PACs) are private interest groups organized to support political candidates to promote legislation that represents their special interests. The Federal Election Commission (FEC) reports all campaign contributions to individual candidates made by PACs.⁹¹ Since this research requires an industry-level measurement of demand for trade protection, corporate-level campaign contributions by PACs should be converted to Standard Industrial Classification (SIC) codes. Recently, Fordham and McKeown (2003) coded all corporate PAC campaign contributions between 1981 and 1990 into two-digit SIC categories. My research basically relies on their two-digit SIC level campaign contributions data.⁹²

The original data, though, includes all campaign contributions made to any candidates regardless of their preferences regarding US trade policy.⁹³ Yet it is reasonable to assume that some candidates prefer protectionist policies while other candidates advocate free trade.⁹⁴ In order to analyze industrial demand for trade protection, it is necessary to compile data of campaign contributions made only to protectionist candidates. From the original data, I have extracted corporate contributions data for the candidates who voted for protectionist

⁹¹ The US Congress created the Federal Election Commission in 1975 to govern the financing of federal elections. It is an independent agency made up of six members who are appointed by the President and confirmed by the Senate. Its duties include: to disclose campaign finance information, to enforce the provisions of the law such as the limits and prohibitions on contributions, and to oversee the public funding of Presidential elections. Source: <http://www.fec.gov/about.shtml>

⁹² I am very grateful to the authors for sharing the data with me.

⁹³ According to Hiscox (2004), “campaign contributions may not be aimed only (or even chiefly) at encouraging politicians to alter trade restrictions.” He argues that his model “describes relationships between international mobility and the income effects of *any* kind of policy change that alters relative prices” and “campaign contributions should provide decent raw material.”

⁹⁴ I thank Thomas Oatley and Layna Mosley for pointing out this issue.

bills.⁹⁵ I then compiled the data at the two-digit SIC level. Industrial contributions only to protectionist candidates are more relevant for analyzing industrial demand for trade protection than are contributions to all candidates. Hence, this research assumes that contributions to the protectionist candidates are a direct measurement of each industry's lobbying for protection, seeking benefits from trade-related policies.

A critic might point out that protectionist candidates vote not only for trade-related bills but also for other bills on various policy issues. Industry pressure groups might have made financial contributions to their favored candidates seeking benefits from other policies, not necessarily from trade policy. Then, it might be assumed that industry lobbying to protectionist candidates can be interpreted as the interest groups' pursuit of favorable policies in general, not necessarily on trade issues alone. Still, industry contributions to protectionist candidates can be a valid measurement of corporate lobbying activities in trade politics, because we can only infer contributors' lobbying purpose from their recipients' voting records.⁹⁶

⁹⁵ Bills used to sort out protectionist representatives in each Congress are as follows: For the 97th Congress, H.R.5133, a bill to establish domestic content requirements for motor vehicles sold in the United States, and for other purposes; for the 98th Congress, H.R. 1234, a bill to establish domestic content requirements for motor vehicles sold or distributed in interstate commerce in the United States; for the 99th Congress, a bill to achieve the objectives of the Multi-Fiber Arrangement and to promote the economic recovery of the United States textile and apparel industry and its workers; for the 100th congress, a vote to pass, over President Reagan's veto, H.R. 3, the Omnibus Trade Bill, a bill to enhance American industrial competitiveness abroad by strengthening actions against unfair foreign trade, clarifying guidelines for business conduct abroad, reorganizing education and export programs, rescinding the windfall profits tax on oil, and requiring advance notice of large-scale plant closings and layoffs; for the 101st Congress, a vote to override the President's veto of H.R. 4328, the textile, apparel, and footwear trade act of 1990, to provide for orderly imports of textiles, apparel, and footwear. Voting records for individual members of Congress are from the web page of the Inter-University Consortium for Political and Social Research (ICPSR). Source: <http://www.icpsr.umich.edu/access/index.html>.

⁹⁶ Investigating voting patterns of protectionist candidates on other policy issues will be an interesting topic, but it is beyond the scope of this study and I leave it for future research.

I employ another measurement of industrial demand for trade protection – the number of petitions each industry filed with the US International Trade Commission (ITC).⁹⁷ Under the Tariff Act of 1930,⁹⁸ US industries may file petitions with the ITC requesting anti-dumping or countervailing duties for relief from unfairly priced (i.e., dumped) and subsidized imports.⁹⁹ The role of the ITC is to investigate industry petitions and determine whether dumping or subsidization is injuring the petitioners or threatening them with injury. Since this research investigates only the demand side of trade politics, it does not consider whether relief has been provided for each petition case.¹⁰⁰ Previous studies have used the petitions to examine theories of trade politics (e.g., Goldstein 1986; Hansen 1990; Blonigen and Feenstra 1996; Knetter and Prusa 2000), and industry petitions are said to be “the most direct measure of demand for trade policy available” (Gilligan 1997).

Because industry campaign contributions are made to persuade politicians to legislate trade policies favorable to the industries, this research considers the contributions as the interest groups’ political efforts either to realize rents from protectionist policies or to compensate for a loss from an increasing level of imports. Thus the contributions have wider

⁹⁷ The ITC investigates three major areas: escape clause, anti-dumping, and countervailing duty cases. This research does not include cases of escape clause, since they were rarely used in the 1980s. ITC decisions on escape clause cases are subject to presidential veto, while ITC findings of injury in antidumping and countervailing duty cases are legally binding (Destler 1995).

⁹⁸ Originally, Congress created the US Tariff Commission in 1916 as a fact-finding agency, which later acquired authority in trade regulation in the late 1940s and early 1950s. Under the Trade Act of 1974, the commission changed its name to the ITC (Hansen 1990).

⁹⁹ Dumping occurs when a foreign producer sells a product in the US at a price that is below that producer’s sales price in its home market or at a price that is lower than its cost of production. Subsidizing occurs when a foreign government provides financial assistance to benefit the production, manufacture, or export of a good. If the Department of Commerce finds that an imported product is dumped or subsidized, and if the ITC finds that a US industry producing a like product is materially injured or threatened with material injury, an antidumping duty order or countervailing duty order will be imposed to offset the dumping or subsidies. Source: http://www.usitc.gov/trade_remedy/731_ad_701_cvd/index.htm

¹⁰⁰ Types of relief include an increase in tariff, quantitative restrictions on imports, or adjustment assistance and so forth (Hansen 1990).

purposes of protectionist lobbying. Meanwhile, industry petitions have more specific conditions and goals because petitions are filed only when industries have been injured or threatened by foreign competitors' unfair trade practices. Thus, industry petitions are considered as the petitioners' efforts to seek retaliation against foreign competitors. In short, campaign contributions capture more general industry lobbying efforts than petitions that have more specific goals.

4.2.2 Explanatory Variables

This research employs five main explanatory variables. They are the following: cross-border capital mobility in one's own sector, an upstream sector's sales dependency upon FDI-receiving sectors (i.e., IFDI-effective sales dependency), a downstream sector's purchase dependency upon FDI-receiving sectors (i.e., IFDI-effective purchase dependency), and a given sector's labor mobility with FDI-receiving sectors (i.e., IFDI-effective labor mobility).¹⁰¹ In addition, to test my conditional hypothesis (Hypothesis 2), I employ an interaction term between a sector's IFDI-effective sales dependency variable and the sector's net imports-exposure.

How can we measure inward and outward foreign direct investment?¹⁰² The Bureau of Economic Analysis (BEA)¹⁰³ at the Department of Commerce publishes records of the

¹⁰¹ Since a given sector's IFDI-effective sales dependency variable is the sum of 17 bilateral individual relationships between the sector and each of 17 sectors, the variable is not an interaction term between a given sector's sales dependency upon the other 17 sectors and IFDI in the 17 sectors. The same is true for IFDI-effective purchase dependency and IFDI-effective labor mobility variables.

¹⁰² Graham and Krugman (1994) suggest four methods for measuring inward FDI in the US: the stock of FDI as measured by cumulative investments, the assets of US affiliates of foreign firms, the number of workers employed by these affiliates, and the value-added component of the output of these affiliates.

total assets and sales values of both US affiliates of foreign firms and foreign affiliates of US firms at two- and three-digit SIC levels.¹⁰⁴ The BEA collects data on FDI by means of mandatory surveys of the US affiliates of foreign firms and foreign affiliates of US firms.¹⁰⁵ The sales and assets of US affiliates of foreign firms indicate inward foreign direct investment, and those of foreign affiliates of US firms represent outward foreign direct investment.

The assets and sales data of US affiliates are indicators of the financial structure and operations of those firms. I employ these assets and sales data because each represents the extent to which foreign investors are involved in US economy through direct ownership and local production, respectively, in a particular period. An alternative way to measure inward FDI is to capture the transferred funds from foreign parent firms to their US affiliates for a particular period. The BEA collects capital flows data to calculate the US balance of payments (BOP). However, the capital flows data do not have implications for the relative portion of foreign participation in the US economy.

Asset measurement of inward FDI indicates the portion of assets owned by foreign firms in the total assets of an industry.¹⁰⁶ Hence FDI at the asset level measures the changing

¹⁰³ The BEA is a federal agency that collects and reports data on US national income and product accounts, balance of payments accounts, and other economic data.

¹⁰⁴ The Bureau of Economic Analysis, US Department of Commerce, *Foreign Direct Investment in the US*, and *Direct Investment Abroad* (<http://www.bea.gov/bea/di1.htm>). FDI data used in this research is from Michael Hiscox at Harvard University. I am very grateful to him for sharing the data with me. An alternative source of FDI data is *Foreign Direct Investment in the US*, published by the International Trade Administration (ITA), which was used in Zeng and Sherman (2005). This research, though, does not employ the ITA data since it provides only a count of FDI inflows in each industry.

¹⁰⁵ Assets are measured at gross book value of property, plant, equipment, etc. See “A guide to BEA statistics on foreign direct investment in the US” by Alicia M. Quijano in *Survey of Current Business*, February 1990.

¹⁰⁶ Since a foreign investor can borrow funds locally rather than from its foreign parent firm or from other sources of funds, this measurement does not necessarily mean actual money flowing from overseas into the US.

ownership structure of an industry between domestic and foreign firms. The sales measurement of inward FDI indicates the portion of sales by foreign firms producing in the US in total industry sales. Hence, inward FDI at sales level implies changes in the structure of goods production between US- and foreign-owned firms.

The first explanatory variable is the level of cross-border capital mobility in one's own sector. This research employs this variable to examine the arguments of existing literature that increasing levels of international capital mobility should reduce incentives among firms to lobby for protection (Milner 1988; Bhagwati 1991; Chase 1998). The own sector capital mobility variable includes inward and outward FDI.¹⁰⁷ This variable is constructed by a given sector's total sales or assets of all affiliates (US affiliates of foreign firms and foreign affiliates of US firms) divided by the sector's total sales or assets, respectively.¹⁰⁸ If own sector capital mobility turns out to be negatively associated with industry lobbying, then the theories of the existing literature can be confirmed.

To investigate how inter-sectoral goods market relationships affect industrial lobbying efforts, this research employs two explanatory variables: an upstream sector's IFDI-effective sales dependency and a downstream sector's IFDI-effective purchase dependency. A given sector's sales dependency upon its downstream sector is the portion of shipments

I thank Timothy McKeown for pointing this out. *Survey of Current Business* by the BEA shows that US residents hold a significant portion of the assets in US affiliates of foreign firms.

¹⁰⁷ In the campaign contribution analysis by Hiscox (2004), the sign of the coefficient is negative and statistically significant when the capital mobility variable for other sectors is not included in the regression model. Yet the sign turns out to be positive and statistically insignificant when capital mobility in other sectors is included. Furthermore, in his ITC petition analysis, the sign of the coefficient is positive and statistically significant.

¹⁰⁸ This measurement of cross-border capital mobility is not perfect, as Hiscox (2004) points out. Measuring capital mobility in this way does not allow for variation in the incentives to move for international capital. Yet this research does not investigate the various incentives of cross-border capital mobility.

from the sector to its downstream sector in the given sector's total shipments.¹⁰⁹ I compile this inter-sectoral sales connection variable from the Input-Output accounts data in the *Survey of Current Business* published by the BEA at the US Department of Commerce. The BEA prepares the benchmark Input-Output accounts using economics census data collected by the Census Bureau. The Input-Output accounts are presented in several tables: standard make and use tables and supplementary tables. I compile inter-sectoral sales connections data from the use table because the table shows how much value of commodities produced by one sector is consumed by another sector.¹¹⁰ Thus, the Input-Output use table captures the interdependence between producing and consuming sectors.¹¹¹

The BEA publishes Benchmark Input-Output data every five years, and I have compiled the benchmark data for the years 1977, 1982, 1987, and 1992.¹¹² Since this research deals with the period from 1981 to 1990, yearly data other than the benchmark years have been interpolated. I have used the method of linear interpolation, assuming that the annual changes in the input-output goods market connection between any two sectors are gradual.¹¹³ The Input-Output Benchmark data have their own industry classification codes, and I have converted them into two-digit Standard Industrial Classification (SIC) codes because the dependent variables (i.e., campaign contributions and petitions) and FDI data are based on two-digit SIC codes.

¹⁰⁹ If the value is high, then the upstream sector is highly dependent upon its downstream sector for its output sales. If the value is low, the sector is less dependent. The compiled data shows that a given upstream sector has various levels of sales dependency with each different downstream sector.

¹¹⁰ The dollar value of sales is the producer's price.

¹¹¹ The Input-Output use table has rows of commodities and columns of industries. Each cell in the table indicates the value of commodities in each row consumed by an industry in each column.

¹¹² Source: <http://www.bea.gov/bea/dn2/home/benchmark.htm>

¹¹³ Interpolated years are 1981, 1983, 1984, 1985, 1986, 1988, 1989, and 1990.

The inter-sectoral goods market data are basically at a bilateral level (e.g., SIC code 20's sales dependency upon SIC code 22, and so on). This research deals with a total of eighteen manufacturing sectors in five electoral cycles, and the bilateral inter-sectoral goods sales data yield a total of 1,530 bilateral observations (i.e., 306 observations in each election period).¹¹⁴ To investigate how sales dependency affects industrial lobbying when FDI flows in, the sales dependency variable of a given sector upon its downstream sector is weighted by the incoming FDI into the downstream sector. The total of 1,530 bilateral observations, though, cannot be directly used to analyze industrial campaign contributions and petitions since these dependent variables have only ninety observations (i.e., eighteen manufacturing sectors in five election periods). Hence, I have added the values of each individual sector's seventeen bilateral relationships into one observation for each electoral period. This process yields a total of ninety observations in the IFDI-effective sales dependency variable. After summing up the binary relationships, a given sector's IFDI-effective sales dependency implies how the sector is dependent upon the other seventeen manufacturing sectors for its goods sales when the level of IFDI increases in the seventeen sectors. Some sectors have a relatively high level of sales dependency, while others have a low level of dependency.

The FDI-effective sales dependency variable is to investigate how a given sector's sales dependency and increased FDI in its downstream sector affect the former sector's lobbying efforts (Hypothesis 1). In order to test my conditional hypothesis (Hypothesis 2), which entails the level of competitiveness of a given sector, the IFDI-effective sales dependency variable is weighted by each sector's measurement of net imports-exposure.¹¹⁵

¹¹⁴ Each of the eighteen sectors has a total of seventeen bilateral relationships with the other manufacturing sectors. Eighteen sectors times seventeen relationships produces 306 cases.

¹¹⁵ This is calculated by $[(\text{imports/shipments}) - (\text{exports/shipments})]$.

This process yields interaction terms between a given sector's IFDI-effective sales dependency and the sector's net imports-exposure.¹¹⁶

This research predicts that the IFDI-effective sales dependency variable will be positively associated with industrial lobbying efforts (Hypothesis 1). This positive association implies that a sector that is highly dependent upon its downstream sector lobbies more when more FDI flows into its downstream sector. I expect that the interaction term between a sector's IFDI-effective sales dependency and the sector's net imports-exposure will be positively associated with industry lobbying (Hypothesis 2). This positive relationship means that an import-competing sector will lobby more when it is highly dependent upon FDI-receiving sectors for its goods sales.

Another explanatory variable that measures inter-sectoral goods market relationships is a given sector's purchase dependency upon its upstream sector. The purchase dependency represents a given sector's total purchase of goods from its upstream sector divided by the purchasing sector's total shipments.¹¹⁷ The purchase dependency variable is constructed from the use table in Benchmark Input-Output data from the BEA, as in the case of sales dependency. In order to investigate how purchase dependency and inward FDI affect industrial lobbying, a given sector's purchase dependency upon each upstream sector is weighted by inward FDI in each upstream sector. Finally, a given sector's total of seventeen bilateral purchase dependencies weighted by inward FDI in each upstream sector is summed up to yield the given sector's IFDI-effective purchase dependency upon its seventeen upstream sectors.

¹¹⁶ For specification of interaction models, see Braumoeller (2004) and Brambor et al. (2006).

¹¹⁷ This variable measures to what extent the given sector is dependent upon its upstream sector for procurement of intermediate input goods.

This research predicts that a given sector's IFDI-effective purchase dependency variable will be negatively associated with the sector's lobbying for trade protection (Hypothesis 3). This negative relationship implies that the given sector lobbies less as it is more dependent upon its FDI-receiving sectors for its input goods purchase.

This research employs inter-industry labor mobility as another main explanatory variable to analyze how inward FDI in neighboring sectors will affect a given sector's lobbying for trade policies. There are two possible methods to measure labor mobility across sectors. One is employing wage differentials across sectors as a proxy for labor immobility, and the other is compiling inter-sectoral labor mobility data through a survey of individual employees. Both methods are explained below in turn.

A possible direct measurement of inter-industry labor mobility is wage differentials across industries (Krueger and Summers 1988). The assumption is that, if labor is highly mobile across sectors, the movement of labor should diminish wage differentials between industries because the discrepancies would be arbitrated away. In contrast, if wage differentials are substantial, then labor is not highly mobile, but rather specific to the sectors in which it is employed. Then why do the wage levels of labor employed in various sectors have differentials? It is argued that sectors that employ industry-specific human capital use more skilled labor and have higher wage levels than other sectors (Tang and Tseng 2004). Along these lines, a study in labor economics suggests that industry-specific and firm-specific skills generate wage differentials, which create a barrier against inter-industry labor mobility (Weinberg 2001). Investigating coalition types of US trade politics in the last two centuries, Hiscox (2002) also employs industry wage differentials to measure inter-industry labor mobility.

Wage differentials may be sufficient to show a barrier for labor mobility, but they are not necessary to show such a barrier. The logic of wage differentials to explain labor mobility works only for sectors where wage differentials correspond to skill differentials. If two industries employ very different skills, but wages in both sectors are similarly high, then the wage differential would appear low, but actual inter-sectoral labor mobility would also be low. For example, labor employed in the chemical industry and the automobile industry would each receive relatively high wages, but the skills for each industry may not be compatible with the other. As a result, the level of labor mobility between the two sectors could be relatively low. Thus, similar levels of labor compensation in some sectors do not necessarily represent a high level of labor mobility between the sectors since each industry may employ highly sector-specific skilled labor.

An alternative way to measure labor mobility is to compile inter-sectoral mobility data that shows, for example, how many employees have moved from a given sector to another sector in a given time period. The patterns of inter-sectoral labor mobility might be relatively stable for years since the specific skills needed for employment in different sectors would work as a barrier against unrestrained labor mobility. Thus, labor mobility could be high between some sectors and low between others. At the individual industry level, a given sector will have a relatively high level of labor mobility if the sector hires labor whose skills are compatible with other sectors. In contrast, another sector will have a relatively low level of labor mobility if the sector requires highly sector-specific skilled labor.

I measure a given sector's level of labor mobility by collecting data on outgoing and incoming labor mobility. Outgoing labor mobility indicates how easily labor employed in a sector can move to another sector. If types of labor skills are not specific to a sector and are

easily applicable to another sector, then the labor can move to the other sector with ease, all else constant. In contrast, if types of labor skills are specific to a sector and are not easily usable in other sectors, then the labor will have a relatively low level of outgoing mobility. Incoming labor mobility refers to how easily labor can be hired in a new sector from another sector. A sector that does not require sector-specific skilled labor can recruit new labor with relative ease, assuming that there is still some unemployment. By contrast, a sector that requires relatively highly sector-specific labor skills cannot recruit labor easily, even if labor is released from other sectors.

A perfect source for labor mobility measurements would be a sector's annual labor employment history data showing how many employees have moved to which sectors, retired, migrated, become unemployed, or left the labor force; and how many employees have been newly recruited from which sectors, or from outside of the labor force, or have immigrated to take work in a given year. To my knowledge, such data does not exist, and the only way to trace the labor mobility of a sector is to extract an individual's employment record in two consecutive years from the Current Population Survey (CPS), which interviews about 59,000 households.¹¹⁸

Labor mobility between sectors is captured by comparing the industry in which an individual was employed in the previous year to the industry in which the individual is employed in the current year. An individual employee provides the information in a given year survey.¹¹⁹ The variables used to capture respondents' employed industries are "Industry

¹¹⁸ The CPS does not provide longitudinal data, and the same respondents are interviewed no more than two consecutive years.

¹¹⁹ Another way is to collect two consecutive years' employment records of an individual (i.e., merging two consecutive years of CPS data identifying respondents who have been surveyed in the two years). But, unfortunately, March 1985 and March 1986 survey data cannot be merged since the household identifiers were revised to protect the confidentiality of survey respondents (Madrian and Lefgren 1999).

last year” and “Industry last week” in the CPS questionnaires. I measured how many respondents had moved from one industry to another (e.g., SIC 20 to 22).¹²⁰ With this process I compiled the total of 306 observations on bilateral inter-industry labor movement in each of five Congresses.

This research covers a total of eighteen manufacturing sectors, and I have extracted the CPS employment records of individual respondents who have been employed only in these eighteen sectors. I exclude individuals who had been employed in one of the eighteen manufacturing sectors in the previous year but moved to a non-manufacturing sector, such as agriculture, mining or services; became unemployed; retired, emigrated, or died. Likewise, I exclude individuals who had not been in one of the eighteen manufacturing sectors in the previous year but moved to one of those sectors in the current year. When measuring labor mobility, then, I include only individuals who had been employed in one of the eighteen manufacturing sectors in the previous year and stayed in the same sector or moved to one of the seventeen other manufacturing sectors. With this approach, I can investigate how labor mobility *within* manufacturing sectors influences industrial trade policy preferences when more FDI flows into the US economy.

A given sector’s outgoing labor mobility represents what portion of labor in a given sector has moved toward another sector in a two-year period, divided by the total number of individuals who answered that they were employed in the original sector in the previous year. I believe it is more appropriate to use total sector employment than total number of workers who move to other sectors, mainly because the concept of outgoing labor mobility implies how many workers move from a given sector to another in the total number of workers in the

¹²⁰ Because the CPS uses its own industry classification codes, I have recoded them into the Standard Industrial Classification (SIC) codes.

given sector. For example, if 10,000 individuals answered that they were employed in the food industry in 1981, and if two of them moved to a new sector between 1981 and 1982,¹²¹ then the outgoing labor mobility of the food sector to the new sector in the period is $2/10,000=0.0002$. By the same token, other manufacturing sectors' outgoing labor mobility is calculated for the same period.¹²²

A given sector's incoming labor mobility represents what portion of labor has moved from one sector to the given sector in a two-year period, divided by the total number of individuals who answered in the CPS that they were employed in the given sector in the second year. For example, if 5,000 were employed in the chemical industry in the year 1982, and if five of them had actually moved from another sector to the chemical sector between 1981 and 1982, then the incoming labor mobility of the chemical industry from another industry in the period is $5/5,000=0.001$. By the same token, incoming labor mobility in each of the other manufacturing sectors is calculated for the same period.¹²³

One problem related to the measurement of outgoing labor mobility is that a given sector that is contracting overall will be more likely to shed labor and will have a higher score on this measure than a sector that is not contracting, all other factors being equal. By the same token, an expanding sector may draw labor from other sectors and may have a higher score on the incoming labor mobility measurement than a sector that is not expanding,

¹²¹ This research uses CPS data from March, and the labor is supposed to have moved to another sector between April of the previous year and March of the following year.

¹²² The same procedures are used for the other election periods.

¹²³ The same procedures are taken for the other election periods.

all else being constant. To solve this problem, this research uses total industry employment as a control variable.¹²⁴

The outgoing labor mobility of a given sector is weighted by inward foreign direct investment in another sector to which some of the given sector's labor has moved in a given period. The interaction term represents how a given sector's outgoing labor mobility and inward FDI in the other sector interact. By the same token, a given sector's incoming labor mobility is weighted by the inward FDI in another sector from which some of the given sector's labor moves in during a given period. This interaction term indicates how a given sector's incoming labor mobility and inward FDI in the other sector interact. As in the case of a given sector's sales (or purchase) dependency upon another sector, a given sector's outgoing (or incoming) labor mobility has a total of seventeen bilateral observations in a given period. Hence, I have added a given sector's seventeen IFDI-effective outgoing labor mobility scores, which yields the given sector's aggregate IFDI-effective outgoing labor mobility in a given election period. The same procedures have been used for a given sector's incoming labor mobility.

The level of IFDI-effective labor mobility of a given sector is calculated by the average rate of the sector's IFDI-effective outgoing and incoming labor mobility in a given period. With this approach, the labor mobility variable does not have a direction and is considered as an average level of specificity in the labor skills a sector employs. If a sector has a relatively high value for labor mobility, then the sector hires less sector-specific and thus more mobile labor. If a sector has a relatively low value for labor mobility, then the sector employs highly sector-specific and less mobile labor.

¹²⁴ The total shipments of a given sector can also control the size of the sector. However, a given sector's larger shipments size over another sector does not necessarily mean the sector with larger shipments size also employs more workers.

A given sector's IFDI-effective labor mobility variable should be positively associated with the given sector's lobbying for trade protection. If a sector has a relatively high level of labor mobility, the sector is assumed to employ relatively less sector-specific skilled labor.¹²⁵ When other manufacturing sectors receive incoming FDI and pull labor to expand production, a given sector with a high level of labor mobility is more likely to lose labor and lose profits.¹²⁶ Experiencing or expecting these negative impacts from inward FDI in other sectors, the sector with a high level of labor mobility will lobby more, all other factors being constant.

4.2.3 Control Variables

This research employs control variables that are conventionally believed to affect industrial trade policy preferences. They include a given sector's total employment, the industry concentration ratio, total shipments, net imports-exposure (net difference between imports-exposure and exports-dependence), and sales to federal governments.

The total employment of a given sector is included in the regression model because it normalizes the flows of labor between sectors, controlling labor mobility caused by expanding or contracting sectors. Also, the variable represents the size of an industry, which is assumed to affect industrial demand for protection. The standard argument suggests that bigger industries with a large number of employees get more attention from the government and thus are more likely to be active in lobbying activities (Lavergne 1983). Thus, the

¹²⁵ The assumption is that less sector-specific labor is more mobile across sectors while more sector-specific skilled labor is less mobile, all else being constant.

¹²⁶ This logic is from Jones (1971) and Hiscox (2004). Losing labor usually results in decreased production and reduced profits, all else being equal.

variable is expected to be positively associated with a given sector's lobbying activities. The Bureau of Labor Statistics at the Department of Labor provides annual employment data for each industry. Another variable that measures the size of a sector is its total shipments. This variable is also expected to have a positive effect on the sector's lobbying efforts.¹²⁷

The industry four-firm concentration ratio is the market share of the four largest firms in an industry.¹²⁸ Thus, it shows the relative size of the four largest firms in relation to the industry as a whole. This variable is assumed to be positively associated with a sector's lobbying for protection because highly concentrated industries should be better able to overcome the so-called free-rider problem and coordinate their lobbying efforts.¹²⁹ Industry concentration ratio data is available from *Census of Manufacturers: Concentration Ratios* published by the Bureau of the Census at the US Department of Commerce.

A given sector's net import-exposure is measured by the net difference between the sector's imports penetration and exports dependency ratios. A sector's import penetration level represented by the ratio of imports in total shipments is predicted to be positively

¹²⁷ Regarding the size effects of an industry, Lavergne (1983) hypothesizes that large sectors are more powerful in getting protection than small ones in two ways. First, large sectors have economies of scale, which can help them to overcome the fixed costs of lobbying. Second, large sectors potentially form the basis of large voting blocks, which get more attention from the President or Congressmen in elections. After empirical tests of US tariffs, Lavergne finds that large sectors have had more success than small ones in obtaining protection.

¹²⁸ Some studies deal with the geographical concentration of industries as well. Busch and Reinhardt (1999) argue that geographically concentrated but politically dispersed industries are most likely to receive protection from imports. They also argue that for trade-exposed industries, geographic concentration strongly increases the formation of common trade policy preferences among workers, employees' contributions to political campaigns, and voter turnout (Busch and Reinhardt 2000).

¹²⁹ It is assumed that protection for a sector is a public good. If a sector gets protection, all the firms in the sector benefit. Thus, one firm's consumption of protection does not prevent other firms' consumption, and once protection is provided, it is not excludable if there are no barriers to entry. In this situation, every firm in a sector has an incentive to free-ride without contributing lobbying efforts to get protection. Olson (1971) points out that because of the free-rider problem, large groups with many members are more likely to fail than smaller ones in collectively getting what they want. Following the logic of collective action, this research assumes that if a sector has a small number of firms, these firms are more likely to lobby successfully because they can overcome the free-rider problem.

associated with industrial lobbying for trade protection because a higher level of imports considering total industry size is likely to trigger local import-competing producers to demand higher protection, all else being constant.¹³⁰ The exports dependency of a sector represented by the ratio of exports in industry total shipments is assumed to be negatively related to industrial lobbying for protection because export-oriented sectors are more concerned with global markets rather than local markets only. Exporters worry about the possibility of retaliation from other countries if trade barriers are set up in the local economy, and thus are more likely to advocate the free trade of goods they produce and sell overseas.¹³¹ Since I measure net imports-exposure of a given sector by subtracting exports dependency from imports penetration, the variable is predicted to have a positive association with the given sector's lobbying for protection. Shipments, imports, and exports data are available from the National Bureau of Economic Research (NBER).¹³²

Another control variable is a given sector's total sales to the federal government, which represents the sector's business closeness to the government. An industry that sells heavily to the government is hypothesized to lobby more because of its sensitivity to government procurement, all else being constant (Lichtenberg 1989; Zaleski 1992; Hansen et al. 2005). The data is available from *Census of Manufacturers: Manufacturers' Shipments to Federal Government Agencies* published by the Bureau of the Census, the US Department of Commerce.¹³³

¹³⁰ I measure imports levels rather than changes in levels.

¹³¹ Because sectors (especially ones producing differentiated products) can simultaneously export and import, my model considers import exposure and export dependence separately.

¹³² Source: <http://www.nber.org/data/>

¹³³ Industrial shipments, imports, exports, and government sales are readjusted to the 1995 US dollar along with a dependent variable: industrial campaign contributions.

Table 4.1: Dependent, Explanatory and Control Variables and Predicted Signs

Dependent variable: Industrial Campaign Contributions or Petitions Filed with the ITC

<i>Explanatory and Control Variables</i>	<i>Predicted Sign</i>
Own sector capital mobility	-
IFDI-effective Sales dependency interacted with net imports-exposure	+
IFDI-effective Sales dependency	+
IFDI-effective Purchase dependency	-
IFDI-effective Labor mobility	+
Total employment	+
Industry concentration ratio	+
Shipments	+
Net imports-exposure	+
Sales to the federal government	+

Table 4.2: Descriptive Statistics

	Obs.	Mean	S.D. ¹³⁴	Minimum	Maximum
Industrial Campaign Contributions ¹³⁵ (1995 \$)	90	297,932	386,823	1,541	1,986,588
Petitions	90	5.43	12.79	0	83
Own Industry Capital Mobility (Shipments)	90	0.282	0.235	0.027	0.998
Own Industry Capital Mobility (Assets)	90	0.761	0.89	0.06	4.68
IFDI-effective Sales Dependency interacted with net comparative disadvantage (Shipments)	90	0.0009	0.0017	-0.002	0.0085
IFDI-effective Sales Dependency interacted with net comparative disadvantage (Assets)	90	0.000067	0.00012	-0.000061	0.00069
IFDI-effective Sales Dependency (Shipments)	90	0.0187	0.0198	0.00015	0.0811
IFDI-effective Sales Dependency (Assets)	90	0.0436	0.0494	0.0004	0.2448
IFDI-effective Purchase Dependency (Shipments)	90	0.032	0.022	0.005	0.099
IFDI-effective Purchase Dependency (Assets)	90	0.059	0.043	0.008	0.215
IFDI-effective Labor Mobility (Shipments)	90	0.003	0.003	0	0.012
IFDI-effective Labor Mobility (Assets)	90	0.006	0.007	0	0.031
Total Employment	90	2081.644	1137.53	270.7	4785
Concentration (Four-firm ratio)	90	37.57	8.71	19.83	56.68
Shipments (1995 \$bn)	90	89.19	67.92	5.84	330.03
Net comparative disadvantage (Imp/Ship) – (Exp/Ship)	90	0.1629656	0.216876	0.009082	1.313161
Government Sales (1995 \$bn)	90	6.29	14.48	0	61.72

¹³⁴ Standard Deviation

¹³⁵ Contributions to candidates who vote for protectionist bills

CHAPTER FIVE

TESTING HYPOTHESES

This research employs a total of sixteen regression models to test my hypotheses. Eight of them analyze industrial campaign contributions, and the other eight examine industrial petitions filed with the International Trade Commission (ITC). Half of the sixteen models measure FDI as the total value of assets of affiliates as a proportion of the total value of private assets in each US manufacturing industry. The other half measures FDI as the total value of the sales of affiliates as a proportion of the total value of all sales in each industry.

5.1 Industrial Campaign Contributions, 1981-1990

5.1.1 FDI Measured as Proportion of Industry Assets

Table 5.1 reports the regression results from analysis of industrial campaign contributions. In these models, foreign direct investment is measured at the asset level. Models 1 and 2 have interaction terms between IFDI-effective sales dependency variable and net imports-exposure. The interaction term is employed to test Hypothesis 2, which is a conditional hypothesis. IFDI-effective sales dependency variable in Models 3 and 4 is employed to test Hypothesis 1.

Table 5.1 Inward FDI (asset) and Industry Campaign Contributions, 1981-1990

Dependent variable: Industry contributions to Congressional campaigns of protectionist candidates

	Model 1	Model 2	Model 3	Model 4
Own industry Capital Mobility ^a	-0.13*** (0.034)	-0.132*** (0.042)	-0.131*** (0.038)	-0.133*** (0.042)
IFDI-effective Sales Dependency Interacted with Net Imports-exposure ^b	-0.167 (0.347)	0.146 (0.622)		
IFDI-effective Sales Dependency ^a	2.489*** (0.754)	2.941** (1.187)	2.226*** (0.516)	3.158*** (0.739)
IFDI-effective Purchase Dependency ^a	-1.306* (0.71)	-2.075** (0.935)	-1.463** (0.627)	-1.995** (0.863)
IFDI-effective Labor Mobility ^a	18** (8.658)	12.9 (21.3)	18** (8.578)	11.5 (20.0)
Total Employment	-41.907 (34.195)	-8.287 (40.9)	-42.02 (34.02)	-8.3 (40.56)
Concentration ^c (Four-firm ratio)	-1.769 (3.091)	1.231 (3.694)	-1.706 (3.073)	1.224 (3.663)
Shipments ^{c, d}	4.047*** (0.728)	3.861*** (0.915)	4.037*** (0.724)	3.862*** (0.908)
Net Imports-exposure ^a	0.097 (0.135)	0.119 (0.168)	0.065 (0.117)	0.141 (0.136)
Government Sales ^{c, d}	14.365*** (1.776)	16.085*** (2.104)	14.421*** (1.764)	16.09*** (2.087)
Observations	90	72	90	72
Adjusted R-squared	0.78	0.79	0.78	0.79

Notes: Standard errors in brackets. *Significant at 10%, **significant at 5%, ***significant at 1%

All estimations include constant.

^a Coefficients shown in millions

^b Coefficients shown in billions

^c Coefficients shown in thousands

^d 1995 US billion dollars

Model 1: Ordinary Least Squares (OLS) with period dummies

Model 2: OLS with lagged independent variables and period dummies

Model 3: OLS with period dummies and without interaction terms

Model 4: OLS with lagged independent variables and period dummies and without interaction terms

A given sector's inward and outward FDI appears to be negatively associated with industry campaign contributions for trade protection. In Models 1 and 3, an increase of one standard deviation (0.89) in the portion of a given sector's capital mobility decreases the industry's campaign contributions by \$115,000, all else being equal. The negative effect on contributions is also significant in Models 2 and 4, where one-period lagged independent variables are employed, allowing extra time for structural changes to affect industrial lobbying efforts. These consistent results in Models 1 through 4 confirm the argument in the existing literature that increasing cross-border capital mobility should reduce industries' incentives to lobby for protection, because protectionist rents for local firms from local trade barriers will be dissipated if cross-border capital mobility increases (Milner 1988; Bhagwati 1991; Blonigen and Feenstra 1996).

The interaction term between a given sector's IFDI-effective sales dependency and net imports-exposure does not turn out to be statistically significant in Models 1 and 2. Thus Hypothesis 2, which posits that import-competing industries that are highly dependent upon FDI-receiving sectors for good sales lobby more, is not empirically supported when FDI is measured at the asset level. However, this result does not necessarily mean that a given sector's sales dependency has no impact on industry lobbying. In Models 3 and 4, a given upstream sector's level of sales dependency upon FDI-receiving sectors turns out to be positively related to industry campaign contributions. In Model 3, an increase of one standard deviation (0.0494) in IFDI-effective sales dependency raises an upstream sector's campaign contributions by \$110,000, all else being equal. In Model 4, an upstream sector's additional lobbying is even greater (\$156,000). This result means that a sector's IFDI-effective sales dependency in the previous period has a stronger impact on the sector's campaign

contributions in the current period. Hence, a given sector's IFDI sales dependency has a positive effect on industry contributions regardless of the sector's level of net imports-exposure, as seen in Models 3 and 4. These results confirm Hypothesis 1, revealing that a highly dependent upstream sector lobbies more for protection when foreign investors' share of assets in its neighboring sectors increases, all else being equal.¹³⁶ When more foreign investors participate in the US economy, local upstream firms tend to lobby more for protection because new foreign owned firms usually procure input goods from their previous sources (such as their parent firms or home country suppliers) rather than the local upstream producers. This changing ownership structure in FDI-receiving firms influences their input procurement patterns, and this in turn triggers a modification in industry lobbying by upstream firms that are highly dependent upon sales to FDI-receiving firms.

A given downstream sector's purchase dependency turns out to have a significant negative effect on industrial campaign contributions as foreign ownership expands in FDI-receiving sectors. In Model 1, an increase of one standard deviation (0.043) in the IFDI-effective purchase dependency variable lowers a downstream sector's campaign contributions by \$56,000, all other factors being constant. The significant negative effect becomes stronger in Models 2 and 4, where lagged independent variables are employed, allowing extra time for structural changes to affect industrial lobbying efforts. The results in Models 1 through 4 confirm Hypothesis 3: the more a downstream sector purchases from FDI-receiving sectors, the less the downstream sector lobbies for protection, all else being

¹³⁶ In an interaction model, a constitutive term's coefficient is the term's effect on the model's dependent variable when the value of another constitutive term is zero (Brambor et al. 2006). Thus, the coefficients in the IFDI-effective sales dependency variable in Models 1 and 2 indicate the effect of the variable on industry campaign contributions when the level of a sector's net imports-exposure is zero. Hence the statistically significant coefficients in Models 1 and 2 do not represent the average effect of IFD-effective sales dependency on industry campaign contributions.

equal. Increased goods production after greenfield inward FDI will reduce the price of input goods. This lowered price of input goods will strengthen the competitiveness of downstream sectors. Then the sectors in turn have less incentive to lobby, all else being equal.

On the whole, the regression results of a given sector's sales and purchase dependency variables imply that inter-sectoral business relationships affect industrial campaign contributions when the portion of foreign ownership expands in US industries. Interestingly, sales and purchase dependencies of a given sector affect industrial lobbying in different ways. An upstream sector lobbies more when foreign firms own more assets in their downstream sectors, who tend to import input goods sources other than the domestic upstream sector. Meanwhile, a downstream sector lobbies less, since the expansion of foreign ownership in its upstream sectors will benefit the domestic downstream sector by providing additional goods at lowered price or higher quality goods at the same price.¹³⁷ Thus the regression results suggest that a given sector's political activities are influenced by its goods market relationships with other sectors, all else being equal.

A given sector's labor mobility appears to have a relatively marginal positive effect on the sector's campaign contributions when foreign owned assets increase in other manufacturing sectors. In Models 1 and 3, an increase of one standard deviation (0.007) in the IFDI-effective labor mobility variable raises industry contributions by over \$126,000, all else being constant. This confirms Hypothesis 4: the higher a sector's labor mobility, the more the sector lobbies for protection when more FDI flows into other sectors, all other factors being equal. A sector with a higher level of labor mobility lobbies more than another sector with a lower level of mobility when more FDI flows into neighboring sectors. Hence

¹³⁷ An assumption is that higher-quality goods are produced as a result of more severe competition between foreign and local firms after inward FDI.

labor should be treated as a sector-specific factor rather than a uniformly mobile or immobile one.

Total industry shipments appear to have a significant positive effect on contributions, as shown in Models 1 through 4. Meanwhile, total industry employment does not seem to have a significant relationship with industry campaign contributions.

Industry sales to federal agencies appear to have a strong positive effect on campaign contributions, as shown in Models 1 through 4. An increase in federal sales of \$14 billion lifts contributions by \$88,500 in Model 1, all else being equal. This finding shows that sectors that have closer business relationships with the federal government tend to lobby more, *ceteris paribus*. Industry concentration ratio and net imports-exposure do not show any significant impact on industry campaign contributions.

5.1.2 FDI Measured as Proportion of Industry Shipments

In this section, I analyze industry campaign contributions while employing a measure of FDI based on the proportion of shipments of foreign affiliates in total industry shipments. Table 5.2 reports the results.

Table 5.2 Inward FDI (shipments) and Industry Campaign Contributions, 1981-1990

Dependent variable: Industry contributions to Congressional campaigns of protectionist candidates

	Model 5	Model 6	Model 7	Model 8
Own industry Capital Mobility ^a	-0.505*** (0.13)	-0.595*** (0.163)	-0.596*** (0.127)	-0.691*** (0.157)
IFDI-effective Sales Dependency Interacted with Net Imports-exposure ^b	0.0364** (0.0167)	0.0364* (0.02)		
IFDI-effective Sales Dependency ^a	3.578** (1.567)	5.425** (2.104)	5.95*** (1.158)	7.934*** (1.589)
IFDI-effective Purchase Dependency ^a	-1.503 (1.161)	-2.439 (1.497)	-2.34** (1.123)	-3.287** (1.445)
IFDI-effective Labor Mobility ^a	52.1** (20.6)	30.5 (42.3)	48.0** (21.0)	13.2 (41.9)
Total Employment	-32.012 (30.212)	-8.584 (36.596)	-40.206 (30.714)	-14.86 (37.087)
Concentration ^c (Four-firm ratio)	2.776 (2.937)	6.015 (3.61)	3.79 (2.971)	6.883* (3.642)
Shipments ^{c, d}	3.934*** (0.625)	3.89*** (0.783)	3.911*** (0.640)	3.867*** (0.797)
Net Imports-exposure ^a	-0.067 (0.12)	-0.016 (0.142)	0.019 (0.116)	0.07 (0.136)
Government Sales ^{c, d}	13.149*** (1.661)	15.021*** (1.972)	13.662*** (1.685)	15.485*** (1.99)
Observations	90	72	90	72
Adjusted R-squared	0.81	0.81	0.8	0.81

Notes: Standard errors in brackets. *Significant at 10%, **significant at 5%, ***significant at 1%

All estimations include constant.

^a Coefficients shown in millions

^b Coefficients shown in billions

^c Coefficients shown in thousands

^d 1995 US billion dollars

Model 5: Ordinary Least Squares (OLS) with period dummies

Model 6: OLS with lagged independent variables and period dummies

Model 7: OLS with period dummies and without interaction terms

Model 8: OLS with lagged independent variables and period dummies and without interaction terms

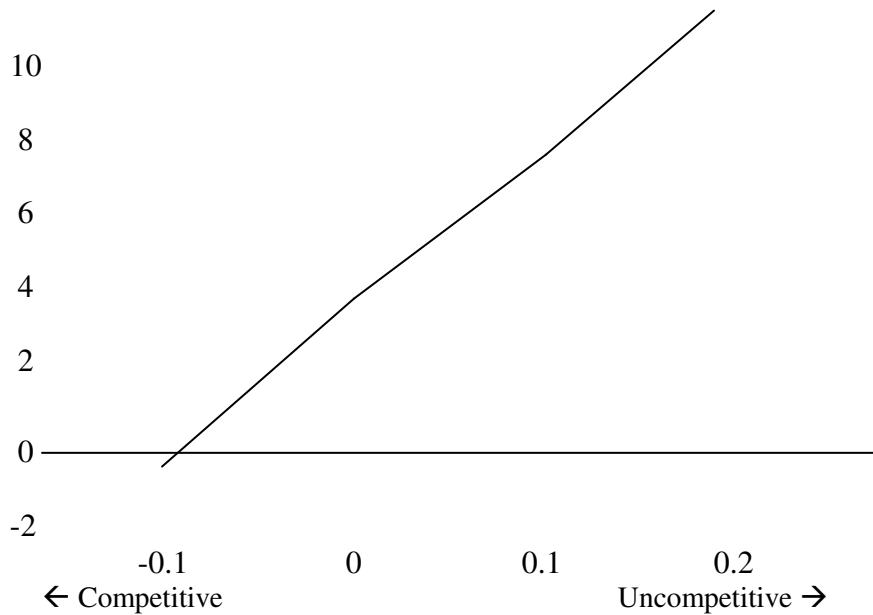
Cross-border capital mobility measured as affiliates' portion of total industry shipments turns out to have a strong negative effect on industrial campaign contributions. In Model 5, an increase of one standard deviation (0.235) in the portion of a given sector's capital mobility decreases the industry's contributions by \$117,000, all else being equal.¹³⁸ On the whole, the results in Models 1 through 8 affirm that increasing cross-border capital mobility reduces industry campaign contributions.¹³⁹ Local firms will have less incentive to lobby for protection, because protectionist rents are dissipated once foreign firms also produce locally (Chase 1998). America-based MNCs and US affiliates of foreign firms will not lobby for protection because trade barriers would harm those firms' intra-firm trade with their foreign affiliates or parent firms.

The interaction term between IFDI-effective sales dependency and net imports-exposure is statistically significant in Models 5 and 6, and this result confirms Hypothesis 2: a given import-competing upstream sector lobbies more as it becomes more dependent upon its FDI-receiving sectors, all else being equal. Figure 5.1 shows the relationships shown in Model 5.

¹³⁸ The size of the negative impact is almost the same as that of asset-measured FDI, as shown in Model 1.

¹³⁹ This finding contrasts to that of Hiscox (2004). In his analysis, the negative association is not confirmed.

Figure 5.1 Marginal Effect of IFDI-effective Sales Dependency on Industry Lobbying



Horizontal axis: Net imports-exposure of an upstream sector
 Vertical axis: Marginal effect of IFDI-effective sales dependency on industry lobbying

When a given upstream sector is export-oriented (i.e., if the value of the horizontal axis is -0.1 in Figure 5.1), the sector reduces lobbying efforts when foreign-owned firms gain market share in downstream sectors, all else being equal. However, when an upstream sector is import competing (i.e., if the value of the horizontal axis is positive), the sector lobbies more when foreign firms produce and sell more goods in FDI-receiving sectors, all else being equal. These results confirm that sales dependency of an import-competing upstream sector has an effect on industry lobbying when the portion of market share by US affiliates of foreign firms increases.

An interesting finding is that an upstream sector's competitiveness (i.e., net imports-exposure) influences industry campaign contributions only when inward FDI is measured at the shipments level (i.e., Models 5 and 6) and not in the assets-based Models 1 and 2. This

contrasting result implies that an import-competing upstream sector is more sensitive to increasing foreign shipments than expanding foreign ownership per se. Since assets might change hands without any alteration in production or sales patterns, this result is not particularly surprising, but it does suggest that lobbying is more sensitive to events in the goods market than in the capital market.¹⁴⁰

An upstream sector's sales dependency upon FDI-receiving sectors seems to have a strong positive impact on industry contributions, as shown in Models 7 and 8. This result affirms Hypothesis 1, as in the cases of Models 3 and 4. The sales dependency variable's impact is highly significant (at 99%) in all models (Models 3, 4, 7 and 8). Thus, upstream sector's sales dependency has a significant impact on industry lobbying when foreign firms participate in the US economy – either by increasing asset ownership or by engaging in local production and selling more goods in American market. On the whole, more inward FDI seems to have a substantial negative demand shock to local upstream sectors, who in turn resort to more protectionist lobbying.

When foreign firms' local production and sales increase in FDI-receiving sectors, a given downstream sector's purchase dependency appears to have a significant negative effect on industrial contributions, as shown in Models 7 and 8.¹⁴¹ This result affirms Hypothesis 3, along with Models 1 through 4. The size of the impact by purchase dependency variable upon campaign contributions is smaller when FDI is measured at the shipments level than at

¹⁴⁰ When an upstream sector's net imports-exposure is zero, the sector's sales dependency appears to have a significant positive effect on contributions as foreign-owned local firms gain market share in downstream sectors. In Model 5, an increase of one standard deviation (0.0017) in the IFDI-effective sales dependency raises industry campaign contributions by \$6,000, all else being equal.

¹⁴¹ Even though the sign of the coefficients is negative as predicted, the coefficients are not statistically significant in Models 5 and 6.

the asset level.¹⁴² This difference implies that downstream sectors are more sensitive to changes in ownership structure than to changes in market share between US- and foreign-owned firms in FDI-receiving sectors.

The level of labor mobility's positive effect on industrial campaign contributions turns out to be valid again. In Model 5, an increase of one standard deviation (0.003) in the IFDI-effective labor mobility variable raises industry contributions by \$156,000, all else being constant. The positive association is also found in Model 7, and these results imply that the level of sector-specificity of labor varies across sectors. Thus the so-called factor approaches, which consider labor as a uniformly mobile factor across sectors, are not empirically supported in this research. Rather, the findings of this research reveal that a more realistic approach in trade politics should treat labor as a relatively specific factor to an industry in which it is employed.

As for other control variables, total industry shipments and industry sales to federal governments turn out to be positively associated with industrial lobbying, as predicted.

Overall, the analysis of industry campaign contributions confirms my theory that inter-industry business connections, as well as labor mobility, mediate the impact of inward foreign direct investment on industry lobbying. The empirical findings of this research buttress the conventional wisdom that economic globalization affects the fortunes of domestic actors in various ways, creating new winners and losers in those processes (Frieden and Rogowski 1996; Garret 1998; Kahler and Lake 2003).

¹⁴² In Model 3, an increase of one standard deviation (0.043) in the IFDI-effective purchase dependency variable lowers a downstream sector's campaign contributions by \$63,000, all else being constant. In Model 7, an increase of one standard deviation (0.022) in the IFDI-effective purchase dependency variable decreases contributions by \$51,000, all else being constant

5.2 Petitions to the International Trade Commission (ITC), 1981-1990

This research employs the number of industry petitions filed with the International Trade Commission (ITC) as another measurement of industry lobbying for trade protection. Industrial petitions are used specifically to request a modification of trade policies after local industries have been harmed or threatened by foreign competitors' unfair trade practices. Because of the petitions' specific purpose, not all industries filed a petition in every election period during the 1980s. My data have a total of ninety observations (i.e., eighteen sectors in five Congresses), and only forty-six observations have one or more cases of petitions. By contrast, all industries have made campaign contributions of varying amounts in the same decade. I believe that investigating industry lobbying both through campaign contributions and petitions will strengthen the validity of my theory if both analyses support my hypotheses.

5.2.1 FDI Measured as Proportion of Industry Assets

Table 5.3 reports the results of petitions analysis with asset-measured FDI.¹⁴³

¹⁴³ As in the analysis of campaign contributions, this research investigates petitions employing both asset- and shipments-measured FDI.

Table 5.3 Inward FDI (asset) and Industry ITC Petitions, 1981-1990

Dependent variable: Number of petitions filed with ITC by industries

	Model 9	Model 10	Model 11	Model 12
Own industry Capital Mobility	0.21 (0.456)	-0.17 (0.477)	0.2 (0.455)	-0.171 (0.476)
IFDI-effective Sales Dependency Interacted with Net Imports-exposure ^a	0.951 (3.699)	0.28 (4.147)		
IFDI-effective Sales Dependency	24.447** (9.97)	25.95** (10.416)	26.471*** (6.235)	26.509*** (6.359)
IFDI-effective Purchase Dependency	-16.502* (8.41)	-16.789** (7.323)	-15.77** (7.88)	-16.692** (7.184)
IFDI-effective Labor Mobility	138.299 (106.825)	329.379* (197.138)	135.2 (106.362)	324.83* (185.226)
Total Employment	0.0009** (0.0004)	0.0006 (0.0004)	0.0009** (0.0004)	0.0006 (0.0004)
Concentration (four-firm ratio)	0.117*** (0.04)	0.113*** (0.035)	0.116*** (0.04)	0.113*** (0.035)
Shipments ^b	-0.012 (0.008)	-0.007 (0.008)	-0.012 (0.008)	-0.007 (0.008)
Net Imports- exposure	-1.791 (2.114)	-1.57 (1.81)	-1.454 (1.613)	-1.494 (1.408)
Government Sales ^b	-0.007 (0.021)	-0.015 (0.02)	-0.007 (0.021)	-0.015 (0.02)
Observations	90	72	90	72
Log likelihood	-190.44	-163.89	-190.47	-163.89
Pseudo R-squared	0.097	0.108	0.097	0.108

Notes: Standard errors in brackets. *Significant at 10%, **significant at 5%, ***significant at 1%
All estimations include constant.

^a Coefficients shown in thousands

^b 1995 US billion dollars

Model 9: Negative Binomial Regression Model (NBRM) with period dummies

Model 10: NBRM with lagged independent variables and period dummies

Model 11: NBRM with period dummies and without interaction terms

Model 12: NBRM with lagged independent variables and period dummies and without interaction terms

A sector's own cross-border capital mobility measured at the asset level appears to have no significant impact on industry petitions. This result contrasts with the variable's significant negative impacts on campaign contributions in Models 1 through 8.¹⁴⁴ Thus a high level of cross-border capital mobility weakens industry campaign contributions, but not necessarily industry petitions.¹⁴⁵

Even though the direction of the coefficient is positive as predicted, the interaction term between IFDI-effective sales dependency and net imports-exposure does not show any statistical significance, and thus the conditional hypothesis, Hypothesis 2 is not confirmed. This is consistent with the result in the analysis of industry campaign contributions when asset-measured FDI is employed. Thus the pattern of lobbying activities by import-competing sectors does not seem to be significantly influenced by changes in the ownership structure between US- and foreign firms.

An upstream sector's higher level of sales dependency upon FDI-receiving sectors seems to influence the upstream sector to file more petitions, all else being equal. In Model 11, for an increase of one standard deviation (0.00012) in the IFDI-effective sales dependency, the expected count of petitions increases by 3.35, all else being equal.¹⁴⁶ The sales dependency's positive coefficients in Models 11 and 12 show that, regardless of net imports-exposure, a highly dependent upstream sector tends to lobby more when foreign

¹⁴⁴ As discussed in Chapter Two, Chase (1998) and Zeng and Sherman (2003) showed contrasting regression results in their analyses of industry petitions in the era of increased cross-border capital mobility. Chase (1998) found a negative relationship between capital mobility and industry petitions, but Zeng and Sherman (2003) found that the relationship between the two to be positive.

¹⁴⁵ If legislation is a slow path to take, then firms that can exit quickly will not bother to lobby. But if petitions are relatively quick, then even firms that can exit quickly will find it rational to file petitions. I thank Timothy McKeown for pointing this out.

¹⁴⁶ For an interpretation of coefficients in a negative binomial regression model, see J. Scott Long and Jeremy Freese, *Regression Models for Categorical Dependent Variables Using STATA* (STATA Press, 2003).

owned-asset increases in the US, all else being equal. Thus upstream sectors' sales dependency seems to have a significant impact on both types of industry lobbying – campaign contributions and petitions, and this result strongly confirms Hypothesis 1.

A given downstream sector that is highly dependent upon FDI-receiving sectors seems to file fewer petitions, all else being equal. In Model 9, an increase of one standard deviation (0.043) in the IFDI-effective purchase dependency variable reduces industry petitions by 0.5, all else remaining constant. The negative effect is also significant in Models 10 through 12. These consistent negative associations between purchase dependency and industry petitions support Hypothesis 3. Along with the results in the analysis of industry campaign contributions, these empirical results confirm that downstream sectors tend to lobby less when the portion of foreign-owned assets increases in upstream industries. Thus, downstream sectors may favor more inward FDI into the US, because greenfield foreign direct investment could benefit the final goods producers by providing more intermediate goods at a lower price. Hence, US downstream sectors can be winners when more foreign firms participate in upstream sectors.

The significant and positive coefficient in the IFDI-effective labor mobility variable in Models 10 and 12 supports Hypothesis 4: the higher a sector's labor mobility, the more it lobbies when other sectors receive more FDI, all else being equal. This result shows that the level of inter-industry labor mobility affects industry lobbying, and this fact implies that the explanatory power of any approach that assumes labor is uniformly mobile across sectors, is limited.

Industry four-firm concentration ratio appears to have highly significant positive effects on industry petitions, as shown in Models 9 through 12.¹⁴⁷ Industry total employment turns out to be positively associated with industry petitions, as shown in Models 9 and 11. An industry that has a large number of employees gets more attention from the government because the fortunes of that industry could be closely related to the unemployment rate of the society. In this case, an industry with a large number of employees would tend to demand more protection, all else being equal.

Industry total shipments and sales to the federal government appear to have no positive impact on industry petitions. By contrast, the two variables have shown substantial impact on campaign contributions, as shown in Models 1 through 8. Shipments would be related to filings only if small (or large) industries tended to be import-competing. Sales to the federal government would be related to filings only if those highly dependent on such sales were import-competing. By contrast, campaign contributions are made to achieve a wide variety of policy benefits, not just trade protection.

The overall results for the control variables imply that factors that affect industry campaign contributions and those that affect industry petitions are different. Total industry shipments and sales to the federal government matter in the analysis of campaign contributions. Meanwhile, industry total employment and industry concentration turn out to be significant in the analysis of industry petitions. Since campaign contributions represent more general industry lobbying efforts to get favorable government policies, the shipment size and the level of closeness to the federal government will critically affect this type of political activity. Meanwhile, petitions to the ITC are a more specific type of industry

¹⁴⁷ In Model 9, for a change of one standard deviation (8.71) in industry concentration, the expected petitions count increases by 2.76, all else staying constant.

lobbying. This fact may well explain why industry concentration ratio, which affects the possibility of firm-level coordination, matters in the analysis of industry petitions, not in the analysis of campaign contributions.

5.2.2 FDI Measured as Proportion of Industry Shipments

Table 5.4 reports the regression results of analysis of industry petitions using shipments-measured FDI.

Table 5.4 Inward FDI (shipments) and Industry ITC Petitions, 1981-1990

Dependent variable: Number of petitions filed with ITC by industries

	Model 13	Model 14	Model 15	Model 16
Own industry Capital Mobility	3.25** (1.327)	2.18 (1.472)	1.734 (1.293)	1.047 (1.406)
IFDI-effective Sales Dependency Interacted with Net Imports-exposure ^a	0.429*** (0.129)	0.268* (0.139)		
IFDI-effective Sales Dependency	18.203 (15.93)	30.784 (18.856)	62.1*** (12.97)	59.068*** (13.38)
IFDI-effective Purchase Dependency	-8.377 (12.368)	-9.923 (12.373)	-19.77 (13.18)	-17.865 (12.058)
IFDI-effective Labor Mobility	479.048** (237.392)	398.796 (393.917)	271.675 (252.709)	178.018 (397.552)
Total Employment	0.0008** (0.0003)	0.0008** (0.0003)	0.001*** (0.0003)	0.0009** (0.0004)
Concentration (four-firm ratio)	0.092*** (0.035)	0.095*** (0.035)	0.11*** (0.038)	0.106*** (0.037)
Shipments ^b	-0.007 (0.006)	-0.01 (0.007)	-0.013* (0.007)	-0.013* (0.007)
Net Imports-exposure	-2.7 (1.903)	-1.4 (1.612)	-0.229 (1.562)	-0.253 (1.474)
Government Sales ^b	-0.039** (0.018)	-0.025 (0.019)	-0.017 (0.019)	-0.016 (0.019)
Observations	90	72	90	72
Log likelihood	-183.12	-162.99	-188.64	-164.82
Pseudo R-squared	0.131	0.113	0.105	0.103

Notes: Standard errors in brackets. *Significant at 10%, **significant at 5%, ***significant at 1%

All estimations include constant.

^a Coefficients shown in thousands

^b 1995 US billion dollars

Model 13: Negative Binomial Regression Model (NBRM) with period dummies

Model 14: NBRM with lagged independent variables and period dummies

Model 15: NBRM with period dummies and without interaction terms

Model 16: NBRM with lagged independent variables and period dummies and without interaction terms

In Model 13, unlike in any other regression models, a given sector's own capital mobility turns out to be positively correlated with industry petitions. One possible explanation could be tariff-jumping FDI (Hamada 1974). When local firms file more petitions in a given sector, foreign firms engage in more direct investment to jump over protectionist barriers that are anticipated and realized. Thus, foreign investment increases in a highly protected sector. However, in the analysis of campaign contributions (i.e., Models 1 through 8), the same variable has significant negative effects on industry lobbying. Thus increasing own sector capital mobility may reduce industry lobbying for more general purpose (i.e., campaign contributions), but not necessarily industry petitions.

In Models 13 and 14, the interaction term between a given upstream sector's IFDI-effective sales dependency and net imports-exposure has a significant impact on industry petitions. Thus, an import-competing upstream sector tends to file more petitions when foreign firms gain market share in FDI-receiving sectors, all else being equal. This result affirms Hypothesis 2. The interaction term's significant impacts are present in the analyses of both campaign contributions and petitions when FDI is measured at the shipments level (i.e., Models 5, 6, 13 and 14). When FDI is measured at the asset level, though, the interaction term is not significant (i.e., Models 1, 2, 9 and 10). These contrasting results imply that import-competing upstream sectors care more about changes in market share than ownership structure between foreign and US firms in FDI-receiving sectors. Since not all foreign assets are used for goods production, a given import-competing upstream sector may be more sensitive to changes in market share than in ownership structure of industry assets.

Regardless of industry competitiveness, a highly dependent upstream sector appears to file more petitions when foreign firms gain market share in FDI-receiving sectors, all else

being equal. This is shown by statistically significant positive coefficients in the IFDI-effective sales dependency variable in Models 15 and 16. Thus Hypothesis 1 is confirmed both in the analyses of campaign contributions (Models 3, 4, 7 and 8) and of petitions (Models 11, 12, 15, and 16). Moreover, upstream sectors' responses are statistically significant when FDI is measured both at the shipments and asset levels. This comprehensive result is plausible because my theory posits that both greenfield and merger and acquisition FDI in the US can trigger a negative demand shock to local upstream sectors, who in turn resort to lobbying for protection for compensation.

Even though the directions of the coefficients are negative, as predicted, a given downstream sector's IFDI-effective purchase dependency shows no statistical significance. This result contrasts with the result in the analysis of asset-measured FDI (i.e., Models 9 through 12) in which the variable has a significant negative effect on industry petitions. In cases of petition filings, a downstream sector seems to be more responsive to a higher portion of foreign-owned assets than to changes in market share between American and foreign firms in FDI-receiving sectors.

A given sector's labor mobility turns out to have a moderate positive effect on industrial petitions, as predicted, when foreign sales increases in another sector. This is shown only in Model 13. Although limited, this positive impact implies that a sector with higher labor mobility tends to lobby more in the era of higher cross-border capital flows. In Chapter Three, my theory posits that not all types of FDI trigger labor mobility between industries – only greenfield FDI does. Thus the relatively smaller impact of the labor mobility variable on industry petitions could be reasonable when we consider that fact that most FDI was merger and acquisitions during the 1980s. Another explanation for this could

be the specific conditions for petition filings. Even after a given sector loses labor to sectors that receive greenfield investment, the labor-losing sector would file a petition only when foreign exporters commit unfair trade practices.

Overall empirical results strongly confirm my theory that inter-industry business and labor market relationships have significant impacts on the political activities of industries in the demand side of trade politics. The theoretical implications of the main findings of this research will be discussed in Chapter Six.

CHAPTER SIX

CONCLUSION

6.1 Main Findings

This research found that inter-sectoral goods market relationships, as well as inter-sectoral labor mobility, did influence the patterns of industry lobbying for trade protection when foreign direct investment flowed into the US during the 1980s. The size and pattern of impacts from the structure of inter-industry goods and labor market relationships upon industry lobbying are various across variables and models. Most importantly, two types of inter-industry goods market connections (i.e., upstream sectors' sales dependency and downstream sectors' purchase dependency) show dissimilar impacts on industry lobbying.

Upstream sectors' response to inward FDI in their neighboring sectors turns out to be largely substantial. Responding to a higher level of inward FDI in neighboring sectors, *any* highly dependent upstream sector lobbies more, and this empirical finding strongly supports Hypothesis 1. It is reasonable to have this considerably significant result, because both merger and acquisition and greenfield FDI into the US may generate a negative demand shock to upstream sectors. Once foreign firms gain market share and procure input goods from their previous sources, such as their parent firms or home country suppliers, US upstream sectors that are highly dependent upon local market will have a negative demand shock. The upstream sectors then lose and resort to lobbying for protection against imports.

An important implication of this finding is that even competitive upstream sectors may seek a political solution when they are highly dependent upon FDI-receiving sectors and thus a negative demand shock is critical to their business fortunes.

Import-competing upstream sectors seem to lobby more (than other sectors) when they receive a positive demand shock after greenfield foreign investment increases in their neighboring sectors. This finding supports Hypothesis 2. When FDI-receiving sectors purchase more input goods to expand production, import-competing upstream sectors will have a higher stake to block imports, all else being equal. Interestingly, the empirical evidence is valid only when inward FDI is measured at the shipments level, not at the assets level. This empirical result may be reasonable because not all foreign-owned assets are related to goods production in the US. Another explanation for the relatively modest empirical support to Hypothesis 2 lies in my theory that posits only greenfield-type FDI generates a positive demand shock to upstream sectors. In fact, the majority type of inward FDI into the US during the 1980s was merger and acquisitions.

Downstream sectors tend to lobby less when more inward FDI flows into their neighboring sectors, and this empirical finding affirms Hypothesis 3. Increased local production of intermediate input goods after greenfield-type FDI will lower the price of the input goods, all else being equal. Lower priced input goods benefit downstream sectors, which can save production costs. In addition, downstream sectors will also benefit from high-quality input goods after more severe competition between local and foreign firms that also engage in local production. In this situation, downstream sectors will have less incentive to lobby for protection because their final goods have become more competitive than before.

As shown, upstream and downstream sectors show dissimilar responses to inward FDI in neighboring sectors. The directions of responses are opposite. After inward FDI, upstream sectors lobby more in case they receive a negative demand shock, while downstream sectors lobby less in case they receive a positive supply shock. The different responses are caused by a given sector's position in inter-industry business connections.

A given sector that has a higher level of labor mobility lobbies more when inward FDI increases in other sectors. This empirical finding affirms Hypothesis 4. This research assumes that different types and level of labor skills in various sectors will work as a barrier against inter-industry labor mobility. A sector that has a relatively high level of labor mobility will be more likely to lose labor when other sectors receive greenfield FDI, expand production, and pull labor from other sectors. The labor-losing sector will then lobby for protection against imports to compensate for its loss. Impacts from inter-industry labor mobility upon industry lobbying are relatively marginal because only greenfield FDI pulls labor from other sectors and induces labor-losing industries to lobby more. The empirical finding of this research implies that the level of inter-industry labor mobility does influence industry lobbying when more FDI flows into neighboring sectors.

6.2 Theoretical Contributions

This research contributes to the international political economy (IPE) literature in several ways. First, during the last several decades, researchers have dealt with how given trade barriers trigger cross-border capital flows, as shown in the discussion of tariff-jumping FDI or tariff-threat-defusing FDI. Yet relatively few studies have examined how increasing

cross-border capital flows affect the trade politics of a domestic society. In an effort to fill the gap, this research has investigated how inward FDI influenced lobbying patterns of US industries during the 1980s. The empirical findings of this research confirm that cross-border capital flows affect the patterns of industry lobbying in a domestic society, implying that foreign direct investment and local trade politics are not independent, but closely interrelated. Foreign direct investment affects the demand side of trade politics because the investment could change business environments and fortunes of industries, who in turn adjust their lobbying activities. Changing business environments include modification in the structure of ownership and goods production between foreign and US-owned firms.

Second, to my knowledge, no existing literature has systematically analyzed inter-industry goods market structure to investigate the relationships between international capital flows and trade politics. Endogenous trade theories have paid attention only on either factoral or sectoral approaches, emphasizing mobility (or specificity) of factors across sectors within an economy. Factoral approaches suggest that capital and labor have contrasting interests in trade politics because both factors are assumed to be freely mobile across sectors. Sectoral approaches, by contrast, suggest that capital is not mobile, but specific to a sector where it is employed, and thus import-competing and export-oriented sectors have contrasting interests in trade politics. Thus, sectoral approaches assume that a given sector's competitiveness over imports determines the sector's position and preferences in the demand side of trade politics.

This research adds that sectoral approaches should consider not only a given sector's competitiveness, but also the sector's position in inter-industry structure of goods market relationships. When FDI flows in "neighboring" sectors, upstream and downstream sectors will modify their lobbying activities, responding to changes in ownership structure and goods

production in their “neighboring” sectors. An upstream sector that sells a large portion of its shipments to an FDI-receiving sector is highly dependent because the bilateral sales connection critically influences the upstream sector’s business fortunes. When foreign firms in an FDI-receiving sector procure input goods from their previous sources rather than the domestic upstream sector, the highly dependent upstream sector will receive a negative demand shock, and thus may resort to lobbying for protection. Therefore, the changes in ownership structure in an FDI-receiving sector affect the upstream sector’s lobbying patterns. A downstream sector that is highly dependent upon an FDI-receiving sector will receive a positive supply shock if greenfield foreign investment changes the structure of goods production in the receiving sector. If increased production of inputs lowers the price of the goods, the downstream sector may become more competitive, and thus will have less incentive to lobby, all else being equal. Therefore, the changes in the structure of goods production after FDI reduce the downstream sector’s incentive to lobby. Showing that industry lobbying is also influenced by a given industry’s position in inter-industry structure of goods market connections, this research expands the area of sectoral approaches.

Another contribution of this research to the development of sectoral approaches lies in its findings about the different levels of labor mobility across sectors. Conventionally, sectoral approaches consider labor as a relatively mobile factor across sectors, while capital is assumed to be a sector-specific factor and hence immobile. This research assumes that, in the real world, there is enough variation in labor mobility. Some sectors may have a relatively high level of labor mobility, while other sectors may have a relatively low level of labor mobility because highly sector-specific labor skills will be a barrier for uniform labor mobility across sectors. The empirical findings of this research reveal that a sector that has a

high level of labor mobility lobbies more when other sectors receive greenfield FDI, expand production, and pull labor from other sectors, all else being equal. Thus, labor should not be considered as a uniformly mobile factor in sectoral approaches. In the studies of trade politics, the assumption of various levels of labor mobility will be more empirically accurate.

Third, this research confirms the conventional wisdom that economic globalization processes have distributive effects on societal actors' welfare: some groups win, but others lose (Keohane and Miller 1996). According to the Heckscher-Ohlin theorem, international trade makes the owners of an abundant factor of production win, while those of a scarce factor lose. After international trade, a country specializes in producing a good that uses the country's abundant factor. The domestic total demand for the country's abundant factor then increases, and this in turn raises the price of the abundant factor. Hence, capital owners in a capital abundant country will win after international trade. Meanwhile, the Ricardo-Viner theorem suggests that, in a fully open economy without cross-border capital flows, export-oriented sectors will win and import-competing sectors will lose. Thus, international competitiveness of those sectors generates winners and losers.

This research finds that, in the era of cross-border capital flows, the fault lines between winners and losers are more complicated. When more foreign direct investment flows into the US, some sectors win while others lose, depending on those sectors' sales or purchase dependencies upon their FDI-receiving "neighboring" sectors. This research assumes that inward FDI changes the structure of asset ownership and goods production between foreign and local firms in FDI-receiving sectors. The modification of industry structure in asset ownership and goods production then generates demand or supply shocks to upstream or downstream sectors. Here, inter-industry structure of goods sales connections

mediate those demand or supply shocks. Upstream sectors highly dependent upon FDI-receiving sectors for goods sales receive a massive negative demand shock if new foreign firms after investment switch their input sources away from the local upstream sectors. Receiving the negative demand shock, the upstream sectors lose. In contrast, downstream sectors highly dependent upon FDI-receiving sectors receive a positive supply shock if additional goods after greenfield FDI lower the price of those goods. Receiving the positive supply shock, the downstream sectors win. Thus, whether a sector could be a winner or a loser in the process of economic globalization hinges also on the sector's position in the structure of inter-industry goods sales connections. Broadly, this research affirms that economic globalization generates both benefits and costs to various domestic economic actors.

In the international relations (IR) literature, the interactions between domestic and international politics have been one of the main issues. One direction is domestic politics' influence on international politics. A given country's political culture or institutions affect the country's foreign policy decision-making processes. The democratic peace argument is an example that posits how democratic norms or institutions of a society play a critical role in designing and projecting peaceful foreign policies toward other democratic countries. The other direction is international politics' impacts on domestic politics. Economic openness and globalization processes affect the lives of people in a society. Some economic actors gain, while other actors lose because economic openness generates benefits and costs to various domestic actors. This research revisits the issue of linkage between domestic and international politics, and affirms the argument that economic globalization processes influence the interest group politics of a domestic society. Even the US, which is still the

largest national economy in the world, is not an exception. This finding is important in the discussion of the global economy because, as the largest and the most significant actor in global economic issues, the US has played and will play a critical role in designing the global economic order in the near future. Since US foreign economic policy represents interactions between domestic economic actors and political institutions, investigating how globalization affects the fortunes and preferences of domestic actors has an important implication to the study of US foreign policy.

In sum, this research contributes to international relations (IR) literature by showing that domestic actors experience impacts from economic globalization through the filter of the economic power structure among those actors. Interestingly, and importantly, the domestic power structure itself is not a given, but is developed by the domestic actors' own economic transactions with each other, as seen in inter-industry goods market connections.

6.3 Data Contributions

I have compiled three new sets of data that may be usable for future research. First, inter-sectoral input-output transactions data compiled at the level of two-digit Standard Industrial Classification (SIC) codes can be used for future research that deals with the structure of inter-industry goods market connections. Since the Bureau of Economic Analysis at the Commerce Department publishes annual Input-Output data, the structure of inter-industry business connections data can be compiled beyond the 1980s.

Second, this research contributes to future research by compiling labor mobility data across US manufacturing sectors from the Current Population Survey (CPS). To my

knowledge, inter-industry labor mobility data at the bilateral industry level has not been compiled before, and the labor mobility data may be usable in other social science disciplines such as labor economics.

Third, I have compiled data on two-digit SIC-level industrial campaign contributions made only to protectionist candidates for the US House of Representatives from the comprehensive industrial contributions data compiled by McKeown and Fordham (2003). The sub-data of industrial campaign contributions for trade protection can be used as another direct measurement of industry lobbying activities in trade politics, along with industrial petitions filed with the International Trade Commissions (ITC), which have been widely used to investigate industry lobbying for trade protection in US trade politics.

6.4 Implications for Future Research

Related to the data availability issue, if campaign contributions data at the industry level are compiled for additional decades (i.e., the 1990s and beyond), my theory and hypotheses could be reexamined to test their explanatory power beyond the 1980s. Future research can be also expanded to include experiences in other countries in the Organization for Economic Cooperation and Development (OECD), which have received a substantial amount of FDI last several decades. With this approach, future research can examine whether my theories of inter-industry goods market relationships can be generalized in advanced societies where the plural model of interest group politics can be applied.

Another direction of future research will be to investigate how outward FDI would affect US trade politics. Industries will have an incentive to modify their trade policy

preferences and lobbying activities if their business fortunes are influenced by the outward FDI from their neighboring sectors. For example, when US multinationals in downstream sectors move their production facilities overseas, domestic upstream sectors highly dependent upon the downstream sectors for goods sales will experience impacts from the outward investment. On the one hand, if US multinationals maintain their reliance on US upstream suppliers for procurement even after they move overseas, domestic upstream sectors will not lose. On the other hand, if US multinationals switch to procure inputs from host country suppliers for any reason, US upstream suppliers will lose. In that case, outward FDI and inter-industry goods sales structure will induce US suppliers to lobby for compensation. Hence, the inter-industry structure of goods sales dependencies deserves attention when we investigate outward FDI and home country trade politics.

The comparison of impacts from greenfield investment and merger and acquisitions (M&A) upon trade politics will be another direction for future research. It is usually assumed that politicians and workers would welcome greenfield investment since it creates jobs and boosts economic growth. In contrast, foreign acquisition of local firms would tend to trigger anti-foreign firms sentiment among politicians and workers, who worry about foreign control of domestic firms and job loss caused by restructuring of acquired firms. Once the magnitude of greenfield investment and M&A in various FDI-receiving countries can be measured, researchers can investigate how the two types of FDI would have different impacts upon the formation of liberal or protectionist sentiment in trade politics among politicians, mass media, and workers.

APPENDIX

Regression Model

Industrial campaign contributions to protectionist candidates or petitions filed with the International Trade Commission

- = Constant
- + Own sector capital mobility
- + IFDI-effective sales dependency interacted with net imports-exposure
- + IFDI-effective sales dependency
- + IFDI-effective purchase dependency
- + IFDI-effective labor mobility
- + Total employment
- + Industry concentration ratio
- + Shipments
- + Net imports-exposure
- + Government sales
- + Period dummies
- + Residual

Industrial campaign contributions to protectionist candidates: The dollar amount of campaign contributions by a given sector in a given election period to candidates for the House of Representatives who vote for protectionist bills

Petition filed with the International Trade Commission (ITC): Number of petitions filed with the ITC for anti-dumping or countervailing duties by a given sector in a given period

Own sector capital mobility: Inward and outward foreign direct investment of a given sector in a given period

IFDI-effective sales dependency interacted with net imports-exposure: An interaction term between a given sector's measurement of imports-exposure [(imports/shipments) – (exports/shipments)] and the sector's aggregated IFDI-effective sales dependency¹⁴⁸ upon its 17 downstream sectors (the sum of a given sector's sales dependency weighted by incoming foreign direct investment in each of the 17 downstream sectors) in a given period

IFDI-effective sales dependency: A given sector's aggregated IFDI-effective sales dependency upon its 17 downstream sectors (the sum of a given sector's sales dependency weighted by incoming foreign direct investment in each of the 17 downstream sectors) in a given period

IFDI-effective purchase dependency: A given sector's aggregated IFDI-effective purchase dependency¹⁴⁹ upon its 17 upstream sectors (the sum of a given sector's purchase

¹⁴⁸ Sales dependency is represented by sales from a given upstream sector to a downstream sector divided by the total shipments of the upstream sector

¹⁴⁹ Purchase dependency is represented by purchase by a given downstream sector from an upstream sector divided by the total shipments of the downstream sector

dependency weighted by incoming foreign direct investment in each of the 17 upstream sectors) in a given period

IFDI-effective labor mobility: A given sector's aggregated IFDI-effective labor mobility between the sector and 17 other sectors (the sum of a given sector's labor mobility weighted by incoming foreign direct investment in each of the 17 other sectors) in a given period

Total employment: Number of total employees of a given sector in a given period

Industry concentration ratio: A given sector's four-firm concentration ratio in a given period

Shipments: Total sales of a given sector in a given period

Net imports-exposure: A given sector's level of imports-exposure in international trade [(imports/shipments) – (exports/shipments)] in a given period

Government sales: A given sector's sales to the federal government in a given period

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