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THE UNITED STATES' TRADE CONFLICT WITH THE NORTHEAST ASIAN COUNTRIES: AN EXAMINATION OF HEGEMONIC STABILITY AND SURPLUS CAPACITY

BY

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ABSTRACT

THE UNITED STATES' TRADE CONFLICT WITH THE NORTHEAST ASIAN COUNTRIES: AN EXAMINATION OF HEGEMONIC STABILITY AND SURPLUS CAPACITY

By

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In order to understand the determinants of the bilateral trade conflict between the U.S. and the Northeast Asian Countries in the 1970s and 1980s, the present study analyzes hegemonic stability and surplus capacity theories of international trade relations. Empirical models of these theories and alternative perspectives are tested on U.S. trade disputes with the NEACs using Poisson and Negative Binomial methods of analyses. The proposed study seeks to explain U.S. trade disputes with the NEACs on the basis of petitions filed with the United States International Trade Commission (USITC) at the national and regional levels in the overall trade area. Based on the analysis in this study, the trade disputes between the U.S. and the NEACs can be mainly explained by the surplus capacity theory, partially depending upon the hegemonic stability and the decision-making idea. Theoretically, the study suggests that no single model has the explanatory power to account for all the U.S.-NEACs' trade disputes. In the future, greater attention needs to be focused on developing models which combine both

international/domestic and political/economic factors in examining bilateral trade relations between the U.S. and the NEACs.

Dedicated to my parents:

Chulsoo Lee and Younsook Kim

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I would like to express my sincere thanks to my parents, Chulsoo Lee and Younsook Kim. I dedicate this dissertation to them as a small token of my gratitude for their endless love and devotion. I would also like to thank all the members of my family.

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THE STUDY OF THE UNITED STATES' TRADE RELATIONS WITH THE NORTHEAST ASIAN COUNTRIES

INTRODUCTION

For many decades, international economic relations have been a central part of international relations. With the collapse of the communist system and the advance of a new world economic system, political scientists have paid more attention to international trade relations. Recently, international trade relations have become an important research agenda item in the study of international relations. The essential issue of the study of international trade relations is: What are the determinants of international trade conflict?

There are basically two main theoretical perspectives on international trade conflict——hegemonic stability and surplus capacity theories. The first perspective, argued by Gilpin (1975), Krasner (1976), Hirschman (1980), and Keohane (1984), emphasizes the distribution of power in the world economy. This political analysis of international trade seeks to examine international trade disputes in terms of a decreasing hegemonic power in the world economic system. The second

perspective, developed by Strange (1979, 1981, 1985), Krugman (1986), and many international economists, stresses the degree of excess capacity for production in light of changing patterns of demand. This economic view attempts to explain international trade conflict in terms of supply-demand functions and macroeconomic conditions in the world economy. These two contending perspectives are obviously divergent, but they are also mutually complementary in the discussion of international trade conflict.

Given these theories, the central theme of the present study is: What are the determinants of the trade conflict between the U.S. and the Northeast Asian Countries (NEACs) such as Japan, South Korea, and Taiwan? More specifically, what were the causes of the United States' trade conflict with the Northeast Asian Countries in the 1970s and 1980s? To answer this question, I analyze hegemonic stability and surplus capacity theories of international trade relations. More specifically, the study seeks to provide an understanding of the mutually complementary nature of both political and economic perspectives in the study of international trade conflict, taking note of the role of political determinants. Empirical models of these theories are deduced from competing theoretical backgrounds and are empirically tested on U.S. trade disputes with the NEACs, in order to evaluate their theoretical relevancies. Moreover, this study develops and tests alternative models of trade conflict that synthesize the

two models and take into account U.S. domestic political factors regarding U.S. trade relations with the NEACs. Finally, the proposed study attempts to yield a new perspective on international trade disputes based upon the findings of the empirical study.

Although there has been an increase in U.S. trade disputes with the NEACs since 1970, we have very little systematic knowledge about the causes of this increase in trade conflict. By focusing on the United States' trade relations with the NEACs, this study provides an empirical test of two contending theories put forth to explain U.S. trade conflict with the NEACs. International trade conflict results from the acts of one nation against others to protect an industry from foreign competition, thus enabling the industry to make higher profits. Specifically, as Odell (1980:208) notes, "an interstate dispute or conflict can be defined as a process in which a government resists or rejects a request from another government or takes harmful action against another state." Here, then, the emphasis is on overt behavior. Such protective devices include subsidies to domestic producers, taxes on imports, quantitative restrictions on imports, state trading, and other tariff and non-tariff barriers.

The present study seeks to analyze U.S. trade disputes with the NEACs on the basis of petitions filed with the United States International Trade Commission (USITC). Additionally,

the study attempts to investigate the U.S.-NEACs trade relations from several levels of analysis. Empirical tests are performed at the national level (Japan, South Korea, and Taiwan), the regional level (NEACs), and the total cluster of trade commodities level.[1]

This study examines the main trading partners of the U.S., Japan, South Korea, and Taiwan, from the 1970s to the 1980s. In particular, this study deals with bilateral trade relations between the U.S. and the NEACs. There are a number of reasons for choosing to focus on relations between the U.S. and the NEACs. First, Japan is one of the leading countries in the world economy and has experienced serious trade disputes with the U.S. in recent decades, as displayed by its rapidly rising trade surplus. Second, South Korea and Taiwan, two of the ten main trading partners with the U.S., have shown remarkable growth in shares of the international market for manufactured goods. Clearly, these three Northeast Asian nations have become the most active trading members in the world economy, especially with the U.S., and have experienced trade conflict with the U.S., the biggest trading partner, for the past two decades.

In addition, Northeast Asia is a politically and strategically important and salient region which depends on

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[1] U.S. imports, which account for over 10,000 items, are coded by the Standard International Trade Classification (SITC). For a more detailed description of commodity classifications, see U.S. General Imports published by the U.S. Department of Commerce.

the United States' military power for its security. The United States has played a key role in preventing antagonistic powers such as the Soviet Union, China, and North Korea from exercising control in Northeast Asia. Thus, studying U.S. trade conflict with the NEACs comprises a meaningful research agenda which deals with economically competitive, yet politically and militarily cooperative, relations between the U.S. and the NEACs. Overall, the cross-national study of trade relations between the U.S. and the NEACs explains not only the similarities of the region but also the dissimilarities within the region.

THEORETICAL REVIEW

There are two main complementary theoretical perspectives concerning international trade disputes. They are hegemonic stability and surplus capacity theories. The first perspective emphasizes the role of hegemonic power in international trade relations, and the second stresses the implications of radical adjustments in the overall level of productive capacity in light of changing patterns of demand. In other words, the former emphasizes the distribution of power in the world economy; the latter stresses the degree of excess capacity for production. At the risk of over-simplification, I briefly summarize the main arguments of

each theory.

Hegemonic Stability Theory

As a classical hegemonic theorist, Hirschman (1980:13-17) argues that foreign trade plays an important role in increasing national power. He mentions two main effects of foreign trade upon the power position of a country. The first effect is that foreign trade enhances the potential military force of a country by providing a more plentiful supply of goods or by replacing goods wanted less by goods wanted more. The second effect of foreign trade is that it may become a direct source of power by increasing the wealth of a nation. In short, foreign trade can be regarded as a means of expanding national power.

Based on the power standpoint, the hegemonic stability theory portrays the configuration of the international economic system in terms of power dominance. For example, both the United Kingdom and the United States in their respective dominant periods seem to fit the notion of a hegemonic state; both seem to have wanted an open system; both seem to have acted to create such a system. This theory maintains that trade conflict is least likely to occur under a hegemonic system because a hegemon sets the rules of the system and controls international trade relations for free trade. In other words, the system of free trade can be

achieved by a hegemonic nation which has the motivation and capabilities to preserve the system.

The basic ideas of hegemonic stability theory are based on three key assumptions of the realist vision of world politics: (1) states as coherent units are the dominant actors in world politics; (2) force is a useful and effective instrument of policy; and (3) there is a hierarchy of issues in world politics, headed by questions of military security (Keohane & Nye, 1989:23-24). Based on these assumptions, the hegemonic stability theorists argue that the main actors in the world trade system are nation-states in pursuit of what they define as their national interest.

Gilpin (1975) explains the rise and fall of the liberal international economic system by focusing on the relationship between political hegemony and foreign investment. He contends that liberal world economic orders self-destruct without the intervention of a hegemonic power to manage and stabilize the system. Therefore, liberal international economies require a politically dominant and economically dynamic country. Gilpin views a hegemonic nation as a protector of the liberal world economic system and posits that the dominant nation should focus on foreign trade to preserve its hegemonic position through technological innovation.

In a similar vein, Krasner (1976:317-323) analyzes the international economic system on the basis of the assumption that the structure of international trade is determined by the

interests and power of states acting to maximize national goals. Krasner articulates the relationship between state interests (e.g., aggregate national income, social stability, political power, and economic growth) and openness, indicating that this depends upon the potential economic power of a state. He defines economic power in terms of the relative size and level of economic development of the state. According to Krasner, openness promotes the economic growth of small states and also of large ones, as long as they maintain their technological edge. More importantly, Krasner relates particular distributions of potential economic power, defined by the size and level of development of individual states, to the structure of the international trading system, defined in terms of openness. He explains that a hegemon will have a preference for an open structure and economic growth when the relative size and technological lead of a hegemonic nation are dominant. The potentially dominant nation has political, economic, and military capabilities that can be used to compel others to accept an open trading structure. In short, Krasner argues that an open world economic system is most likely to occur when a hegemonic nation increases or maintains its dominant position in the system.

Keohane (1984) also mentions that the degree of hegemony in a sector may determine the stability of the sector. He explains that hegemony produces a stable regime for a sector because the dominant power can use a combination of reward and

coercion to maintain the regime. Keohane tested his theory by examining the history of three issue-areas: trade in manufactured goods, international monetary relations, and the world petroleum trade. According to Keohane, a rapid collapse of the somewhat liberal regime in the petroleum sector, where U.S. power declined most dramatically, occurred after a decrease in U.S. strength. Trade in manufactured goods constituted the most stable regime because American power declined there least. Therefore, Keohane says that the most important predictor of change in a sector is change in the national power of the hegemon in the sector. According to Keohane, nonhegemonic cooperation is difficult, even if it is sometimes possible, since it must take place among independent states that are motivated more by their own concepts of self-interest than by a devotion to the common good.

The theory of hegemonic stability mentioned previously mainly involves global or multilateral trade relations. However, the proposed study deals with regional or bilateral trade relations between the United States and the Northeast Asian countries. Therefore, we need to transform the main argument of the theory in order to apply a global theory of hegemonic stability to bilateral trade relations between the U.S. and the NEACs. In a situation of strong U.S. hegemony, such as existed from 1951 to 1970 in the region, the U.S. and the NEACs could maintain stable trade relations. However, for the past two decades, the United States has experienced

reduced power in influencing the NEACs. Japan has expanded its influence toward the Pacific Basin by rapidly increasing its economic power and threatening the dominant power position of the U.S. since the 1970s. In 1970 the ratio of the U.S. gross domestic product to that of Japan was 2.5:1. By 1990 this ratio had dropped below 1.3:1. In 1989 Japan's trade with Asia surpassed its trade with the United States. As Cumings (1984:1-40) points out, today there is increasing competition between American and Japanese hegemony over semiperipheral Taiwan and Korea. Korea and Taiwan have increased their autonomy in international relations through improving their economic capabilities and political position. Nevertheless, they have no choice but to depend upon U.S. military support for their security. Thus, the U.S. dominance over the NEACs has decreased relatively since the 1970s, even if it has maintained its regional hegemony mainly based on its political and military power. From the viewpoint of hegemonic stability, the weakening position of the U.S. in trade relations may be associated with more serious U.S. trade disputes with the NEACs. Simply put, the dominance of the U.S. over the NEACs determines the degree of U.S. trade conflict with the NEACs.

In summation, the hegemonic stability theory argues that the world economy requires a hegemon at its center to maintain a liberal international trade system. Here, the hegemon has both the motivation and the capability to preserve order in

the system. According to the hegemonic model developed by Robert Gilpin and, later, Stephen Krasner, the political and economic decline of the hegemon inevitably brings about the collapse of the liberal trade order. For instance, the liberal trade system cannot be maintained by the United States if its capabilities are lacking. This being the case, hegemonic stability theory explains that international trade relations are understood as a function of a certain distribution of powers among nations where an open trade system is most likely to be achieved under a hegemonic system. From this standpoint, trade conflict between the U.S. and the NEACs can be explained by U.S. dominance or control over trade relations. Therefore, the increasing U.S.-NEACs trade conflict may be understood as a function of the U.S.'s relative power position vis-à-vis the NEACs. According to the idea of hegemonic stability, the NEACs have two choices for their economic growth or stable trade relations: (1) establishing a new economic structure with a new hegemon or under a new hegemonic rule; or (2) enjoying a "free ride" under the weakening U.S. hegemonic system as long as it accepts the burden of openness. Stein (1984:355-386) says that the decline of hegemony does not suddenly insure closure. That is, closure comes when the hegemon, who will no longer bear the burden, defects because others refuse to redistribute the costs. In conclusion, this study examines the U.S.-NEAC(s) trade conflict in terms of the decreasing U.S.

hegemony in Northeast Asia. The weakening position of the U.S. in trade relations may be associated with more serious U.S. trade disputes with the NEACs. The U.S. dominance in the U.S.-NEACs' relations may determine the degree of U.S. trade disputes with the NEACs.

Surplus Capacity Theory

In contrast to the hegemonic stability theory, surplus capacity theorists have expressed that surplus capacity has accelerated protectionist trends in world trade. A situation of surplus capacity is a problem that stems from large amounts of excess production capacity. Strange (1981:13) defines surplus capacity as "a situation in which demand is insufficient to absorb production at prices high enough both to maintain employment and to maintain profitability for all the enterprises engaged." According to the surplus capacity theory, surplus capacity weakens liberal international trade.

Strange (1979, 1985) argues that the likelihood of experiencing serious problems of surplus capacity has increased greatly, for three reasons. First, the amount of capital investment per unit of output has risen markedly in many sectors. Second, a substantial number of newly industrialized countries have rapidly expanded their share of the world market at the expense of advanced countries. Finally, for a number of reasons, such as the oil crisis,

patterns of demand for manufactured goods have changed rapidly. However, Strange does not measure surplus capacity with any precision, emphasizing that surplus capacity or over-production is always a key determinant affecting international trade relations, although other intervening variables cannot be neglected.

McKeown (1983) evaluates whether the hegemonic stability theory offers an adequate explanation for most European nations adopting an open trade system by the latter 1860s. He mentions the evidence presented in some standard historical works on British commercial diplomacy in the 19th century. According to McKeown, the British government did not try to gain lower tariffs and a greater market for exports but, rather, tried to head off a serious deterioration in Anglo-French relations. His findings are generally inconsistent with those suggested by a hegemonic stability theory; that is, that liberal trade relations occurred in the absence of British pressure. McKeown proposes a modified explanation of the international trade system, stating that if firms demand protection in times of adversity, governments will respond and become protectionist. On the other hand, governments will become more liberal during periods of prosperity. For McKeown, trade conflict is a function of macroeconomic conditions depending upon surplus capacity. Macroeconomic conditions—inflation, unemployment, and so forth—shape the political environment, especially the extent

of pressures for protection, and may also affect anti-protection groups directly.

Conybeare (1984) contends that we are more likely to observe characteristics of prisoners' dilemmas (or asymmetric trade game of hegemonic predation) than public good conceptions in international trade. Because free trade is not essentially a public good, we have theoretical problems in rationalizing the proposition that hegemonic powers will seek to enforce free trade as their first best policy. There is no reason or need for the hegemon to provide a free-trade system as if it were a public good. The best policy for an income-maximizing hegemon is to apply optimal trade restrictions to smaller powers. Conybeare maintains that a hegemonic system may be stable, but it does not guarantee mutually beneficial or open trade relations in the way suggested by the theory of hegemonic stability. Clearly speaking, hegemonic powers determine open or protective trade policy to smaller powers in terms of national interests based on their economic conditions. Strange (1979:308) also points to cyclical downturns as an explanation for protectionism. According to Strange, the international political economy is like a zebra with black stripes of trade restriction in the interest of economic nationalism alternating with white stripes of trade liberalization in the interest of international integration. Specifically, hard times and economic weakness for the individual state bring out the tendency to protect trade; good

times and economic strength tend to lead to trade liberalization. This is a simple economic explanation of trade policy decision. Strange points to national or international economic conditions as a key determinant of protectionism.

Based on this assessment of surplus capacity theory, the U.S. trade conflict with the NEACs may interact with its domestic economic condition. That is, the U.S. will become more liberal during periods of prosperity because it has the capability and motivation to manage/endure the NEAC's economic penetration. In conclusion, surplus capacity theorists emphasize the problem of over-production as a main determinant of trade conflict. The problem is closely related to worsening macroeconomic conditions. That is, liberalist or protectionist trends in world trade depend on global economic conditions. This economic theory posits that U.S. trade disputes with the NEACs can be explained primarily by economic determinants. The macroeconomic conditions of the U.S., such as unemployment and GNP growth rates, have an immediate impact on the U.S.-NEACs trade conflict. Thus, the U.S. will become more protective in the face of economic adversity, which gives rise to more serious trade conflict with the NEACs. Here, the export policy of the NEACs will become more cooperative with the U.S. for weakening its protective trend. Accordingly, this study explains the U.S.-NEACs trade conflict in terms of the worsening U.S. macroeconomic conditions.

Alternative Perspectives

1. Interaction Perspective

As mentioned above, the hegemonic stability theory has some practical problems in its application. Although the surplus capacity theory seems to explain U.S.-NEAC(s) trade relations, it doesn't provide a sufficient explanation for the system. Cowhey and Long (1983:186-188) say an "either-or" choice between the two theories of international trade relations would lead to a preference for surplus capacity. However, it is the combination of falling hegemony and surplus capacity that produces U.S. trade conflict with the NEACs. Thus, the two theories of international trade relations are complementary to each other in explaining U.S. trade disputes with the NEACs. The impact of surplus capacity on U.S. trade conflict with the NEACs is dependent on the degree of U.S. dominance over the NEACs. When the U.S. has a dominant position in U.S.-NEAC(s) trade relations, surplus capacity problems may not have a great effect on U.S. trade protection, and vice versa. On the other hand, when the U.S. economy does not have a surplus capacity problem, the degree of U.S. dominance over the NEACs is not highly related to its trade conflict. Clearly stated, we need to consider the combination of falling hegemony and surplus capacity when we deal with U.S. trade disputes with the NEACs. That is, we need to take

into account the interaction effects between hegemonic stability and surplus capacity, along with their combined effects. This mutually complementary idea produces my alternative model.

		U.S. Surplus Capacity: Hard Times	U.S. Surplus Capacity: Good Times
U.S. Hegemonic Stability	Strong U.S. Dominance	(1) Protect ? ? Liberalize	(2) Liberalize Trade Openness No Trade Conflict Liberalize
	Weak U.S. Dominance	(3) Protect Trade Protection Trade Conflict Protect	(4) Liberalize ? ? Protect

Figure 1: U.S. trade policy & conflict based on hegemonic stability & surplus capacity

In Figure 1, Box 2 shows the conditions of the liberal U.S. trade policy which result in non-conflicting U.S.-NEACs' trade relations, while Box 3 indicates those conditions of the protective trade policy of the U.S. which produce the U.S. trade disputes with the NEACs. That is, low U.S. trade disputes with the NEACs are based on increasing U.S. hegemony in U.S.-NEAC trade relations and improving U.S. surplus capacity problems, while high U.S. trade disputes with them result from decreasing U.S. hegemony in U.S.-NEAC trade relations and worsening U.S. surplus capacity problems. How can we explain how quadrants 1 and 4 (hegemon/surplus capacity

problem and no hegemon/no surplus capacity problem) can predict U.S. trade relations with the NEACs? Answering this question is a key endeavor of the present study. In this study, I consider two intervening U.S. domestic political factors which influence U.S.-NEACs' trade relations, along with hegemonic stability and surplus capacity.

2. The U.S. Trade Protection Decision Making Process Perspective

Since U.S. trade policy is largely carried out by Congress, the USITC, and the president, this study deals with import policy decision-making by each of these three units of the federal government. The USITC only considers whether increased imports of an article will cause serious injury or the threat thereof to a domestic industry producing a similar article. If an affirmative decision is reached, this determination, along with the commission's finding on the amount of increased protection needed to remedy the potential injury, is sent to the president. The President must provide import relief, unless he determines that such relief is unnecessary.

According to members' voting behavior, Congress is responsive to the competitive problems of import-sensitive industries and labor unions. Throughout the period from 1949-1983, Republican members cast a significantly higher

proportion of affirmative votes than Democrats. However, the significance of party affiliation has weakened considerably since circa 1975. Both Republicans and Democrats cast a higher proportion of affirmative votes in the 1975-1983 period than in the previous periods. The president's willingness to accept affirmative USITC findings tends to increase when his decisions are made around the time of a congressional or presidential election or when Congress is about to take legislative action on another trade policy issue that is important to the president. Analysis of trade policy behavior, according to Baldwin (1985:180), leads to the following conclusions: (1) the President tends to be more liberal on trade policy matters than the Congress; (2) the Senate seems more receptive to protectionist petitions from particular industries than does the House; (3) chairpersons of key committees with jurisdiction over trade issues have a much greater ability to assist a particular industry than the typical member of Congress; and (4) the political interactions between the President and the Congress play a major role in shaping trade legislation. On the other hand, Hansen's findings (1990:21-46) on the industries side show that: (1) larger industries are more likely to get protection than smaller ones; (2) industries are more likely to get protection if they are located in districts that have members of Congress on the Ways and Means Committee or trade subcommittee; and (3) industries are more likely to get protection, the greater the

trade deficit is in the United States.

Given the above conclusions, the present study focuses on the interaction between the three units of U.S. federal government and U.S. industries. It is based on Hansen's argument (1990:21) that the industries and the government presumably have incentives to pursue utility-maximizing courses of action. In short, on the demand side, an industry seeks the benefits through a higher tariff, while, on the supply side, the government chooses to protect an industry in order to obtain the political benefits such as votes or contributions. Thus, the import policy depends on the interaction between the political benefits pursued by the government and the economic benefits sought by the industries.

To understand the U.S.-NEACs trade conflict we need to examine the U.S. trade protection decision-making process, considering which political factors have the greatest effect on the U.S. trade policy toward the NEACs. This study focuses on the determinants of the U.S. trade conflict with the NEACs by using the number of petitions against the NEACs as a dependent variable. Therefore, I will analyze the process of filing the petitions which denote the occurrence of trade conflict. Here the question is, what are the factors involved in making the industries file the petitions? I assume that the factors making them apply for protection are strongly related to the determinants of trade conflict. That is, although the imports are threatening the industries with

injury, if the injured industries do not apply for protection, there will not be a trade conflict. The existence of injured industries does not always produce international trade conflict. And, an industry's decision to apply (or not) is affected by its perception of the likelihood of a positive USITC ruling. This study deals with two mutually stimulating factors in the process of filing the petitions and making affirmative decisions.

Under what conditions are U.S. industries most likely to apply for protection? What are the conditions which increase the likelihood of a positive USITC ruling? First, loss of domestic market share may drive U.S. industries to file a petition for protection in terms of their economic difficulties. The U.S.-NEACs trade conflict may result from the U.S. trade deficit through the NEACs increased import penetration. Pressures from the industries may drive the USITC to make an affirmative decision and the president to accept that decision.

Second, there is a substantial body of literature on the relationship between political elections and business cycles. The main argument of political business cycle studies presented by Nordhaus (1975), Tufte (1978), and Golden and Poterba (1980) is that macroeconomic conditions tend to cycle around political elections, with falling unemployment and increasing production and income in response to the efforts of incumbents to create favorable economic conditions during the

voting season. Nordhaus (1975:181-189) states that within an incumbent's term in office there is a predictable pattern of policy, starting with relative austerity in early years and ending with the potlatch right before elections. The political business cycle studies maintain that elected officials attempt to produce favorable economic conditions during election years. As deduced from the political business cycle studies, the injured industries tend to apply for protection just prior to elections—especially prior to a presidential election. Then, the three units involved in a trade protection decision-making process—the USITC, Congress, and the president—tend to make an affirmative decision for the injured industries in order to obtain favorable support from them.

Taken together, the U.S.-NEAC(s) trade conflict is affected by the likelihood of a positive ruling, which is based on the U.S. trade deficit through the NEAC's increased import penetration and the presidential election cycle. These two factors, which will be included in my second alternative model, must be considered to explain (empirically and theoretically) U.S. trade conflict with the NEACs. However, these factors will not be strongly involved in cases 2 and 3 of Figure 1 which have obviously consistent conditions which determine U.S. trade disputes with the NEACs. In the consistent conditions, U.S.-NEAC trade conflict can be easily explained by two complementary theories of hegemonic stability

and surplus capacity without considering the two intervening U.S. domestic political factors.

The theoretical perspectives mentioned above can be expressed as:

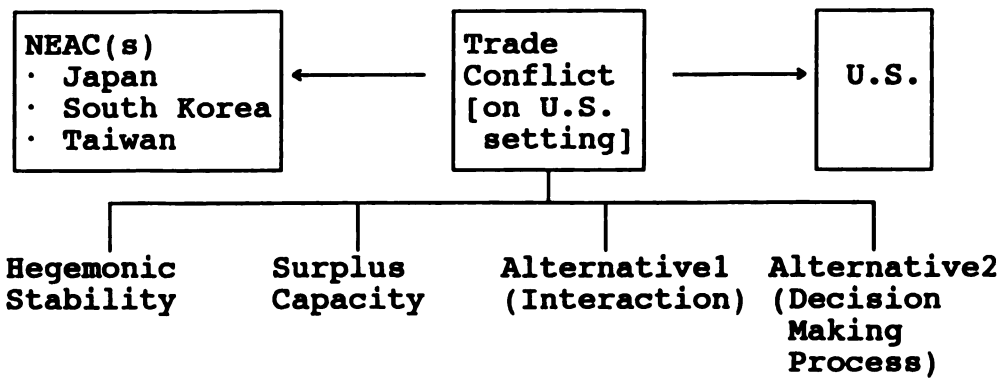


Figure 2: U.S.-NEAC(s) trade conflict

The above review of the literatures that attempt to explain international trade relations has shown the various determinants of international trade conflict. Hegemonic stability theory maintains that relations between nations (U.S.-NEACs trade relations) are determined by a particular distribution of powers among nations (U.S. dominance over the NEACs). Surplus capacity theory views trade conflict as a function of bad economic conditions driven by excess capacity for production (worsening U.S. macroeconomic conditions concerning the NEACs increased imports). Interaction perspective implies that the combination of the U.S. falling hegemony and surplus capacity produces U.S. trade conflict with the NEACs. U.S. trade protection decision-making process

perspective considers U.S. trade protection decision-making as a result of interactions by the main political actors such as the USITC, Congress, and the president (the likelihood of positive decisions by the actors).

OVERVIEW OF WHAT IS TO BE DONE

The present study consists of five chapters designed to seek and explain the determinants of U.S.-NEACs trade conflict. The following chapter, Chapter II, shows a descriptive analysis of U.S.-NEACs' trade conflict, considering various causal factors. In the chapter, the hypotheses deduced from the theoretical perspectives will be constructed, and the variables will be defined and operationalized. In Chapter III, I present the methodological concerns regarding event-count research of international trade relations. This chapter deals with the functional forms of the individual and composite models of U.S.-NEACs trade conflict. Chapter IV presents and interprets the results of the analyses in terms of the methodological concerns discussed in Poisson and Negative Binomial methods of analyses. The final chapter provides concluding remarks concerning the major findings and features of the study. At the end, I mention the directions of future research to advance our understanding regarding international trade conflict.

CHAPTER 2

THE DETERMINANTS OF U.S.-NEACs' TRADE CONFLICT

INTRODUCTION

The first chapter showed that trade conflict is interlinked with various causal factors. There are two kinds of causal factors in the U.S. trade conflict with the Northeast Asian Countries: (1) hegemonic stability, as a political determinant, emphasizing the role of hegemonic power in international trade relations; and (2) surplus capacity, as an economic determinant, stressing the degree of excess capacity for production.

A descriptive analysis of U.S.-NEACs' trade conflict indicates that United States trade disputes with the NEACs have increased substantially in the 1980s. The trade conflict is associated with both political and economic determinants of the U.S.-NEACs trade relations. In this chapter I formulate testable hypotheses within each theoretical perspective and trade conflict variables. The variables to be defined and operationalized include: (1) U.S. trade conflict, (2) hegemonic stability, (3) surplus capacity, and (4) likelihood of a positive USITC decision.

THE HYPOTHESES OF U.S.-NEACs' TRADE CONFLICT

Hegemonic Stability Hypotheses

Hegemonic stability theory maintains that relations between nations are determined by a particular distribution of powers among nations. Simply put, international trade relations can be explained by power, rather than by rational exchange. Based on this idea, the theory emphasizes a hegemonic state which has both the motivation and the capability to preserve order in the system. It argues that trade conflict is least likely to occur under a hegemonic system.

How can we apply this theoretical perspective to explain bilateral trade disputes between the U.S. and the NEACs? From the standpoint of hegemonic stability theory, I hypothesize that the relative dominance of the U.S. over the NEACs is a key factor for determining the degree of U.S. trade conflict with the NEACs. The present study regards the U.S. as a hegemonic nation in terms of national power. U.S. economic and military power is considered in evaluating the degree of relative U.S. dominance over the NEACs. By considering those factors together, we can analyze the bilateral trade relations between the U.S. and the NEACs in terms of hegemonic stability theory.

Moreover, this study considers an additional factor,

U.S.-NEAC(s) military ties. U.S.-NEAC(s) trade relations are restrained by their security concerns. The East-West tension in Northeast Asia has an effect on U.S. trade policy toward the NEACs. I assume that since World War II, the relations between the U.S. and the NEACs have been affected by the degree of East-West tension. The U.S.-NEACs economic relations are more united during times of East-West tension because the United States does not want to threaten the economy of its allies by implementing protective trade policies against them. As Pollins (1989) concludes, bilateral political cooperation and conflict are positively associated with levels of bilateral trade. From this standpoint, strong U.S.-NEAC(s) military ties, based on the existence of East-West tension in Northeast Asia, improve their economic relations by reducing U.S. trade conflict with the NEACs.

In this view, the hegemonic stability hypotheses can be stated as:

Hypothesis 1: The relative dominance of the U.S. over the NEACs is associated with U.S. trade conflict with the NEACs.

Hypothesis 1a: A relative increase in the economic power position of the U.S. with respect to the NEACs is associated with a decrease in its degree of trade conflict with the

NEACs, while a relative decrease in the U.S. position is associated with an increase in trade conflict.

Hypothesis 1b: A relative increase in military power of the U.S. with respect to the NEACs is associated with a decrease in its degree of trade conflict with the NEACs, while a relative decrease in its military power is associated with an increase in the conflict.

Hypothesis 1c: An increase in the East-West tension in Northeast Asia is associated with a decrease in the U.S.-NEACs trade conflict, while a decrease in the tension is associated with an increase in the conflict.

To summarize, the hegemonic stability hypotheses are based on the assumption that the international power system regulates international trade relations. Based on this assumption, U.S. trade disputes with the NEACs will be determined by relative U.S. dominance over the NEACs in terms of economic and military power. Additionally, East-West tension levels in Northeast Asia will be related to the U.S.-NEACs trade conflict by strengthening or weakening the U.S. military position in the region.

Surplus Capacity Hypotheses

Surplus capacity theorists emphasize problems of worsening macroeconomic conditions based on over-production as key determinants of trade conflict. Specifically, the world trade system will be more open when the world economy is prosperous rather than when it is not. In times of prosperity each nation will be more liberal in world trade relations, while in times of adversity it will become protectionist. This theory explains trade protectionism in terms of an economic perspective. In a similar vein, U.S. trade disputes with the NEACs are dependent on the domestic economic condition, which is explained by macroeconomic factors such as unemployment and GNP growth rates.

From the viewpoint of surplus capacity theory, this study also considers an action-reaction linkage in U.S.-NEAC(s) trade relations. U.S. trade disputes with the NEACs interact with imports into the U.S. from the NEACs. According to traditional trade theory, trade disputes are caused by domestic demands for protection by increased import penetration, which produces an increased balance of trade deficit. The greater the penetration of imports into a market, the greater the chance of an interstate dispute over access to that home market. Imports into the U.S. from the NEACs, which may result in the U.S. surplus capacity problem, can be a determinant in influencing U.S.-NEAC(s) trade

conflict.

With this view, we can hypothesize:

Hypothesis 2: The degree of U.S. surplus capacity determines the degree of U.S. trade conflict with the NEACs.

Hypothesis 2a: Increased U.S. unemployment produces an increase in U.S. trade conflict with the NEACs, while decreased U.S. unemployment results in decreased conflict.

Hypothesis 2b: An improved condition for the overall U.S. economy (GNP growth) results in a decrease in U.S. trade conflict with the NEACs, while its worsening condition brings about an increase in the conflict.

Hypothesis 2c: Increased imports into the U.S. from the NEACs produces an increase in the U.S.-NEACs trade conflict, while decreased imports into the U.S. from the NEACs results in a decrease in the conflict.

To summarize, the surplus capacity hypotheses maintain that U.S. trade disputes with the NEACs are explained by its economic condition. If there are worsening U.S. domestic economic conditions, there will be an increase in U.S.-NEAC(s) trade conflict, and vice versa. Also, imports into the U.S.

from the NEACs will determine protective or open U.S. trade policy toward the NEACs, producing its trade or non-trade conflict with them.

Alternative Hypotheses

Based on the above two main hypotheses, I maintain that U.S. trade conflict with the NEACs results from the combination of U.S. falling hegemony and surplus capacity problem. That is, decreasing U.S. trade disputes with the NEACs are based on increasing U.S. hegemony in U.S.-NEAC trade relations and improving U.S. surplus capacity problems, while increasing U.S. trade disputes with them result from decreasing U.S. hegemony in U.S.-NEAC trade relations and worsening U.S. surplus capacity problems. When both factors are present, U.S.-NEACs' trade disputes are most likely to be explained and predicted.

From this view, I deduce a conditional hypothesis that synthesizes theories of hegemonic stability and surplus capacity:

Hypothesis 3: The impact of the U.S. dominance over the NEACs on the U.S.-NEACs trade conflict is conditional upon the relative absence of the U.S. surplus capacity problem, while the impact of the U.S. surplus capacity problem on

the U.S.-NEACs trade conflict is conditional upon the relative absence of U.S. dominance over the NEACs (strong dominance - good times / bad times - weak dominance).

On the other hand, how can we explain U.S. trade relations with the NEACs in the inconsistent conditions such as U.S. decreasing hegemony/improving surplus capacity problem and U.S. increasing hegemony/worsening surplus capacity problem? To understand the U.S.-NEACs' trade relations we need to examine the U.S. trade protection decision-making process, considering the intervening U.S. domestic political factors—the factors involved in making the U.S. industries file the petitions and the USITC make an affirmative decision. An industry's decision to apply (or not) is affected by its perception of the likelihood of a positive USITC ruling. This study deals with two factors which increase the likelihood of a positive USITC ruling: (1) U.S. trade deficit through the NEACs increased import penetration; and (2) U.S. presidential election cycle. The U.S.-NEACs trade conflict may be affected by the worsening U.S. trade deficit through the increased NEACs imports and the interaction between the political benefits pursued by U.S. government and the economic benefits sought by U.S. industries.

U.S. trade protection decision-making process hypotheses,

which consider two domestic political factors in the decision-making process of U.S. trade policy to the NEACs, can be deduced as:

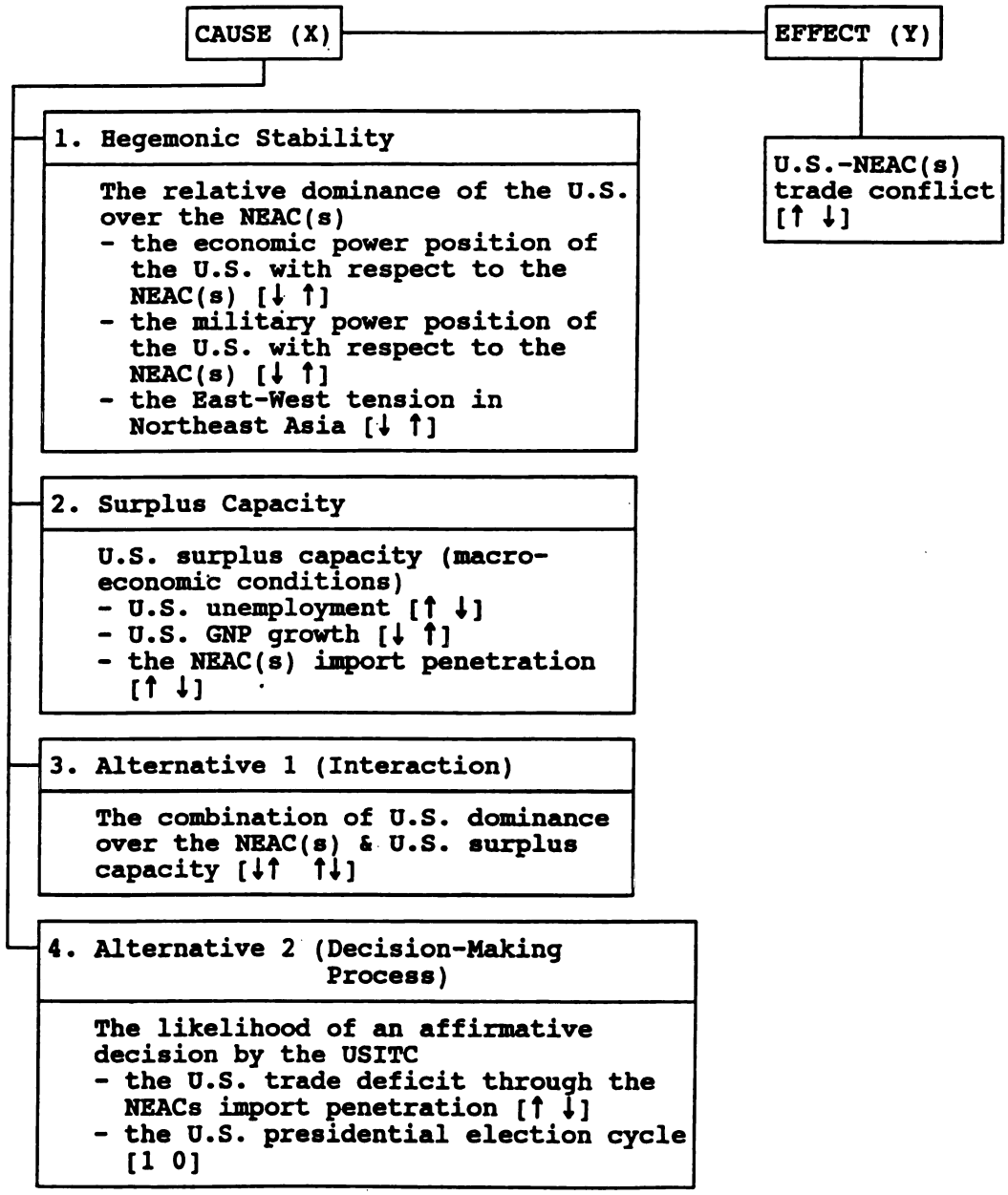
Hypothesis 4: U.S.-NEACs trade conflict is related to U.S. industries' perception of the likelihood of a positive USITC ruling.

Hypothesis 4a: U.S.-NEAC(s) trade conflict is positively associated with the U.S. trade deficit through NEAC(s) import penetration.

Hypothesis 4b: U.S.-NEAC(s) trade conflict is positively associated with the U.S. presidential election cycle.

Taken together, when two main conditions (hegemon/no surplus capacity problem and no hegemon/surplus capacity problem) are simultaneously present, we may easily explain the U.S.-NEAC(s) trade conflict. [interaction hypothesis] However, in inconsistent cases (hegemon/surplus capacity problem and no hegemon/no surplus capacity problem) the U.S. trade conflict with the NEACs will be relatively dependent on U.S. domestic political factors—U.S. industries' pressures on Congress, the USITC, and the president, on the basis of their perceptions of the likelihood of a positive USITC ruling. [U.S. trade protection decision-making process hypothesis]

Figure 3: Hypothesis Formulation



FORMULATION AND OPERATIONALIZATION OF THE VARIABLES

In order to empirically test the formalized hypotheses, the following concepts must be defined and operationalized: (1) U.S. trade conflict, (2) hegemonic stability, (3) surplus capacity, and (4) likelihood of an affirmative USITC decision.

U.S. Trade Conflict

World trade conflict has recently stemmed from accelerating mutual protectionism, which denotes a decrease in the degree of openness in international trade. To measure the degree of trade conflict between the U.S. and the NEACs, the proposed study will use the petitions filed against the NEACs. Although the petitions against the NEACs will not have a direct impact on the NEACs exports to the U.S., they serve as a good indicator of U.S. trade conflict with the NEACs. That is, the presence of U.S. trade disputes with the NEACs will be associated with an increasing number of petitions against the NEACs, while the absence of trade disputes will be associated with a decreasing number of petitions.

Data about the petitions filed against the NEACs is available from the U.S. International Trade Commission (USITC) which publishes an annual report of petitions filed against foreign countries. Created by an Act of Congress as the United States Tariff Commission, in 1916, the name was changed

to the United States International Trade Commission by the Congress under the Trade Act of 1974. The Commission's major mission is to provide technical advice to the President, Congress, other government agencies, and the public on international trade issues. The Commission determines whether U.S. industries are injured by imports that benefit from various unfair and illegal activities from abroad.

The data from the USITC Annual Report includes petitions against an adjustment assistance/escape clause, anti-dumping, countervailing duties, and unfair trade. First, domestic U.S. industries may request import relief assistance under the adjustment assistance and escape clause petitions. The industries or firms that are seriously injured or threatened because of increased imports can seek relief. Second, the Commission investigates questions of imported articles sold at less than their fair value. If affirmative, the imports become subject to special dumping duties. Third, the Commission deals with countervailing duties directed towards U.S. imports. If any country or government provides any bounty or grant to its manufacture or production, the imports into the United States will be given a duty equal to the net amount of such bounty or grant. Fourth, the Commission determines whether unfair import practice exists in the importation of articles into the United States. The Commission determines whether there is a tendency to substantially injure a U.S. domestic industry.

In addition to the four types of situations mentioned above, the data are categorized in terms of dates of filing, final outcome, and article concerned. The commission's investigation process takes as little as sixty days or as long as three to four years. Often, the length of investigation is affected by court litigation (for license agreement and trademark) and changes in commissioners. After the investigation, the Commission determines whether there is an affirmative finding for each petition, which denotes a justifiable indication of injury. As such, each petition is coded with respect to its dates of filing and final outcome. Also, each petition is classified into the article concerned.

In short, petitions filed with the U.S. International Trade Commission are categorized in terms of type of petition, dates filed, a final outcome, and article concerned. From the data, I extract the petitions filed against the NEACs in the whole trade area. To measure the intensity of U.S. trade conflict with the NEACs I will use the frequency of petition.

Hegemonic Stability

McKeown (1983:75-80) points out some of the conceptual difficulties with hegemony. The first question is, when is a state hegemonic? As he says, even if it may not be necessary to posit possession of some precise share of world capabilities, at least we need to distinguish the

distributions of capability associated with hegemony, near-hegemony, and nonhegemony. In this study, I do not establish an exact scale to determine a hegemonic nation. I simply regard the U.S. as a hegemonic nation (which denotes a nation having the power of leading) in the U.S.-NEACs trade relations in terms of national power. Secondly, in what sense is the hegemonic stability theory about "power"? Gilpin focuses on the importance of military power. Krasner also points out some concrete examples of the role of military power in changing the tariff policies of Latin American states and in securing regions of Africa for the British. Nevertheless, Krasner stresses potential economic power as the basis of a hegemonic nation's success in maintaining an open trading system. This study considers economic and military indicators to measure the degree of hegemony of the U.S. over the NEACs with an emphasis on economic power.

The first indicator of U.S. hegemony is the degree of economic dominance of the U.S. over the NEACs. There is a set of indicators designed to measure potential economic power in the international economic system. It consists of such factors as gross national product, per capita income, share of world trade, etc. In the present study, I use the relative proportion of U.S. GNP to NEACs total and individual GNP(s) in order to measure the degree of economic dominance of the U.S. over the NEAC(s) in U.S.-NEACs' relations. The second indicator is the relative proportion of U.S. military spending

to the NEACs total (in U.S.-NEACs' trade conflict) and individual (in U.S.-individual NEAC trade conflict) military expenditure(s) as an indicator of U.S. military hegemony. In brief, two kinds of indicators of U.S. hegemony are selected to measure the degree of dominance of U.S. over the NEACs in U.S.-NEACs' trade relations.

Furthermore, this study considers a factor which increases the role of the U.S. hegemony in Northeast Asia. Since World War II, the relations between the U.S. and the NEACs have been affected by the degree of East-West tension in the Pacific Basin. That is, the U.S.-NEACs relations are politically and militarily more united during the times of East-West tension. Accordingly, the United States does not threaten the economy of its allies by implementing protective trade policy against them during hard times. The proposed study argues that a shift in the East-West tension of Northeast Asia will be associated with a change in U.S. trade conflict with the NEACs. That is, expanding regional tension will strengthen political and military ties between the U.S. and the NEACs. Therefore, the United States will not threaten the economy of its allies by enacting protective trade policy toward them. During the period of East-West tension in Northeast Asia, the U.S. supposedly placed more emphasis on political interests rather than economic interests. To measure the East-West tension level in the Pacific Basin, I use a scale based on the World Events Interaction Survey

(WEIS)—the WEIS scale[2] contains characterizations of each event in the data file according to the conceptual framework. This scale is not designed as a single dimension of conflict or cooperation involved in a given event. Accordingly, the present study uses the data that translate WEIS data into a cooperation-conflict continuum (Goldstein, 1990:159-167).

Surplus Capacity

My second independent variable, surplus capacity, measures U.S. domestic macroeconomic conditions. This is a variable which is easy to operationalize. A problem of surplus capacity is represented by worsening U.S. macroeconomic conditions. To measure the U.S. domestic macroeconomic conditions, we need to consider unemployment rates and GNP growth rates. When U.S. domestic industries are suffering from outside competition, as shown by increased NEACs import penetration, they are more likely to request certain compensation for domestic relief and assistance. When the U.S. economy is performing well—as shown by favorable GNP growth and unemployment rates—the domestic industries are less likely to file petitions against the NEACs, whereas

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[2] Scale category codes (source: Three-Way Street by Goldstein & Freeman) are as follows:
(6) - Reward - Yield - Grant - Promise - Approve - Propose - Request - [Comment] (0) - Deny - Protest - Reject - Accuse - Demonstrate - Warn - Demand - Reduce Relations - Expel - Threaten - Seize - Force - (-6).

during the sluggish period they are more likely to file complaints against the NEACs.

Moreover, the study considers an action-reaction linkage in U.S.-NEAC(s) trade relations. U.S. trade disputes with the NEACs interact with imports into the U.S. from the NEACs. The trade disputes are caused by domestic demands for protection by increased import penetration, which produces increased balance of trade deficit. NEACs import penetration means imports into the U.S. from Japan, South Korea, and Taiwan. To measure the import penetration I use the proportion of goods imported from an individual NEAC (or NEACs) out of the total imports to the United States.

For this study, the U.S. import statistics are based on U.S. General Imports published by the U.S. Department of Commerce. Briefly, my indicators of surplus capacity are unemployment rates and GNP growth rates. The data for the indicators are readily available from a variety of sources. For measuring domestic macroeconomic conditions, the present study employs the rate of production of goods and services (Gross National Product growth rates). As another indicator of macroeconomic condition, unemployment rates represent the domestic reactions to import penetrations as an additional factor. For example, a high unemployment rate indicates that the domestic labor forces are being overwhelmed by foreign competition, whereas a low unemployment rate signifies that the domestic economy is maximizing its available labor force

for overall expansion.

The Likelihood of An Affirmative Decision

To understand the U.S.-NEACs trade conflict I focus on the determinants of the U.S. trade conflict with the NEACs by examining the number of petitions against the NEACs. Therefore, I analyze the process of filing the petitions which denote the occurrence of trade conflict. Here the question is, what are the factors involved in causing the industries to apply for protection? I assume that the factors making the firms file the petitions are strongly related to the determinants of trade conflict. That is, an industry's decision to apply (or not) is affected by its perception of the likelihood of a positive USITC ruling.

The first indicator of the likelihood of an affirmative decision is U.S. trade balance with the NEACs. This affects the regulatory agency's incentives to supply the protection. If the U.S. trade deficit expands because of increased imports, the U.S. industries are more likely to apply for protection from foreign competition with the high expectation of obtaining an affirmative decision. Data about the U.S. trade deficit by the NEACs is available from U.S. General Imports by the U.S. Department of Commerce and Statistical Abstract of the United States by the U.S. Bureau of Census. The second indicator is the presidential election cycle. As

Tufte (1978) points out, politicians shape national economic policy for electoral purposes by increasing transfer payments immediately prior to the elections, causing economic indicators to fluctuate with the occurrence of national elections. Electoral cycle determinants are constructed from the presidential election cycles. The presidential election cycles are constructed as a dummy variable where an election year is assigned the value of one while a non-election year is assigned the value of zero. During election years, there may be increased expectation of obtaining an affirmative decision.

Figure 4: Concept Definition & Measurement

Concept	Definition	Variable	Indicator	Source
Trade Conflict	Interstate dispute stemming from accelerating protectionism in international trade.	Petitions filed against the NEAC(s)	Number of petitions against the NEAC(s)	USITC annual report
Hegemonic Stability	World economic system which has a hegemon at its center to maintain a liberal international trade order	Economic dominance of the U.S. over the NEAC(s).	Relative proportion of U.S. GNP to NEAC(s) GNP(s).	World Tables '92, etc.
		Military dominance of the U.S. over the NEAC(s).	Relative proportion of U.S. military spending to NEAC(s) military spending.	SIPRI yearbook
	* A factor increasing the role of the U.S. hegemony in Northeast Asia	East-West tension level in Northeast Asia	WEIS int'l conflict scale(transformed into COPDAB)	Three-Way Street (1990) by Goldstein & Freeman
Surplus Capacity	Large amounts of excess production capacity	U.S. macroeconomic conditions	U.S. unemployment rates U.S. GNP growth rates	Citi Bank Data Base
	* A factor increasing U.S. surplus capacity problems	NEAC(s) import penetration	Proportion of NEAC(s) imports out of the total imports to the U.S.	U.S. General Imports by the U.S. Department of Commerce, etc.

Figure 4 (cont'd)

Concept	Definition	Variable	Indicator	Source
Likeli-hood of an Affir-mative Decision	Possibility of obtaining a positive USITC decision (on the petition)	Expectation of obtaining a positive USITC decision	U.S. trade balance with the NEACs Presidential election cycles	U.S. General Imports by the U.S. Department of Commerce, etc.

INDICATORS OF THE CAUSES OF U.S.-NEACs' TRADE CONFLICT

The present study deals with two main determinants of the U.S.-NEACs trade disputes (hegemonic stability and surplus capacity), along with the intervening U.S. domestic political determinants. The review of the annual trends of these factors attempts to examine the relationship between the U.S.-NEACs trade conflict and its determinants.

The U.S. trade conflict with the NEACs has increased remarkably since 1970. As indicated in Figure 5, the total incidence of U.S.-NEACs' trade conflict has gone up from 3 times in 1971 to 34 times in 1986, more than a tenfold increase. The U.S. has annually experienced in the 1980s more than ten times the bilateral trade conflict with the NEACs as in the decade preceding. During the period of 1970-1989, on the average, Japan had the largest share in the bilateral trade conflict with the U.S., followed by Korea and Taiwan. Japan experienced relatively evenly trade disputes with the U.S. in both the 1970s and the 1980s. South Korea and Taiwan did not experience much trouble in trade relations with the U.S. in the 1970s, not as in the 1980s, because the U.S. economy was strong enough to manage and endure their economic penetration. The annual trends of U.S.-NEACs' trade disputes show that there were conflictual trade relations between the U.S. and the NEACs in the recent decade.

During the period of strong U.S. hegemony, such as

existed from 1951 to 1970 in Northeast Asia, the U.S. could manage and control the U.S.-NEACs trade relations. However, since the 1970s, the United States has experienced reduced

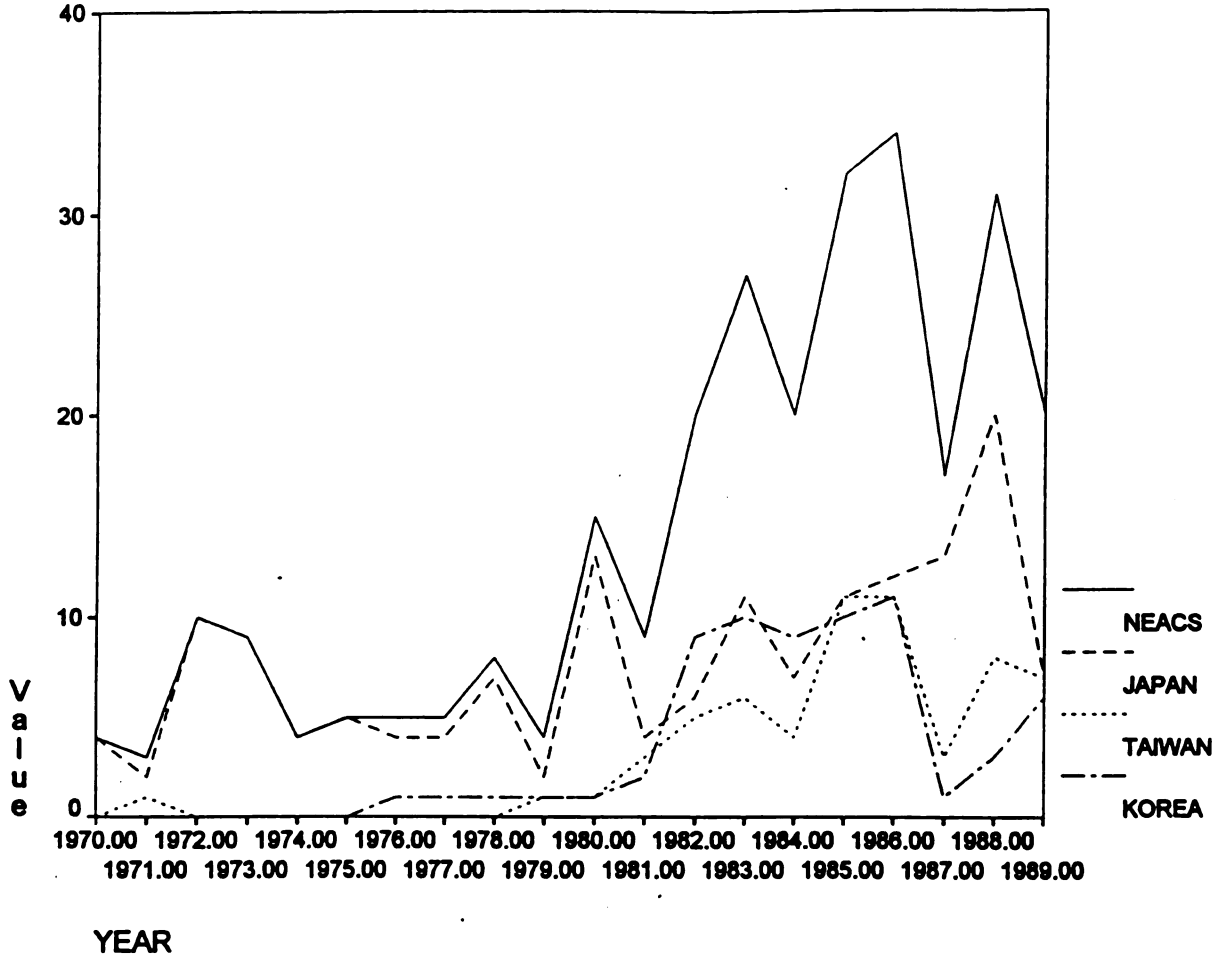

Figure 5: U.S.-NEAC(s) Bilateral Trade Conflict (number of cases), 1970-1989

[Source: U.S. International Trade Commission (USITC) Annual Report, Washington D.C.: International Trade Commission, 1970-1989.]

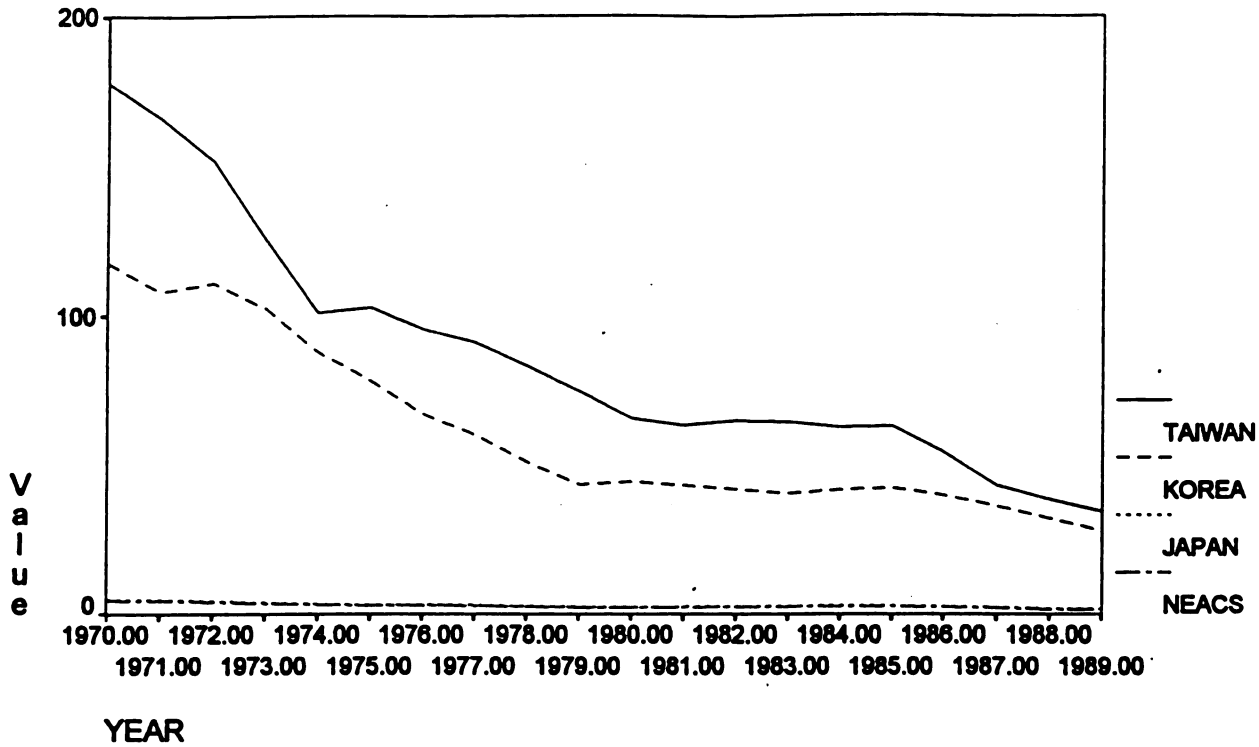

Figure 6: The Ratio of U.S. GNP to NEAC(s) GNP, 1970-1989

[Source: World Bank Book, World Tables 1992, The Johns Hopkins University Press, 1992. Council for Economic Planning and Development (Republic of China), Taiwan Statistical DataBook, 1991.]

power in influencing the NEACs. Japan has expanded its influence toward the world economy by rapidly increasing its economic power since the 1970s. In 1970 the ratio of the U.S. gross national product (GNP) to that of Japan was 5.01:1. In 1989 this ratio dropped to 1.74:1. The relative proportions of U.S. GNP to NEAC(s) GNP show that Japan has the strongest

economic power relative to the U.S. economic power, Korea the second, with Taiwan the weakest economic power. Specially, South Korea and Taiwan have rapidly decreased the economic gap with respect to the United States since 1970.

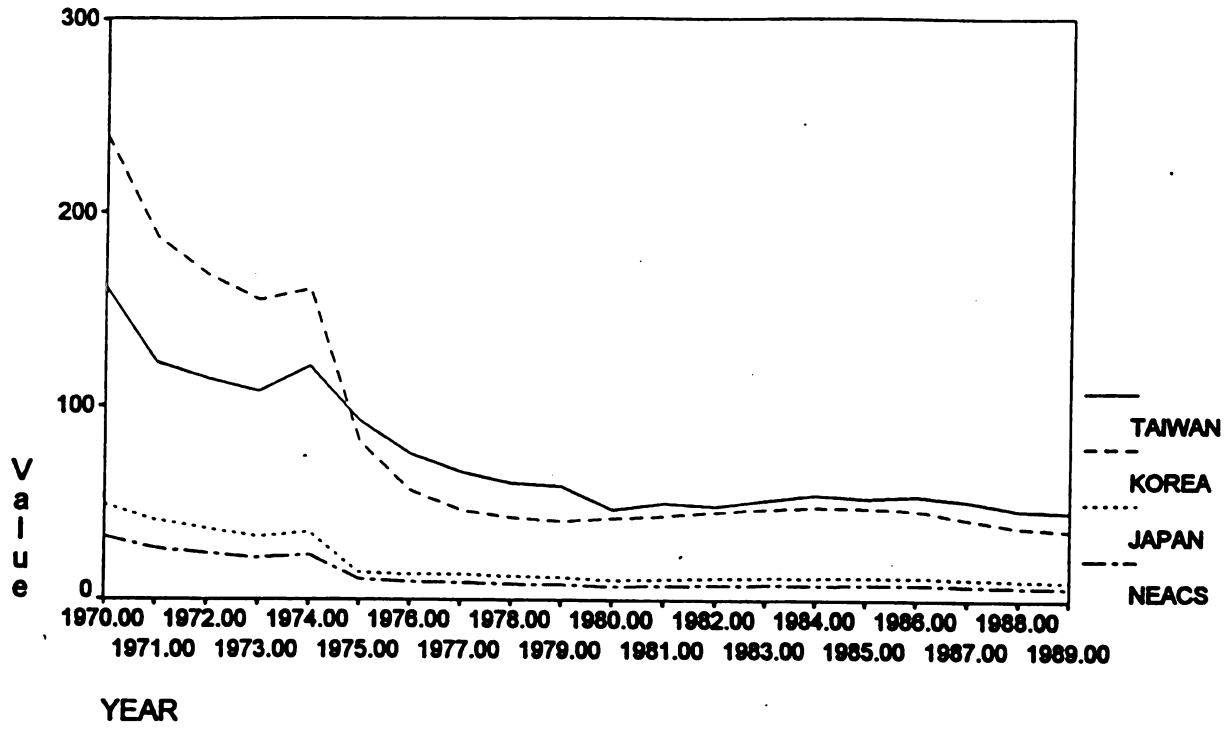

Figure 7: The Ratio of U.S. Military Spending to NEAC(s) Military Spending, 1970-1989

[Source: SIPRI Year Book, 1975-1990.]

The Northeast Asian nations have improved their economic capabilities in the U.S.-NEACs' relations. Nevertheless, they

still depend upon U.S. military protection—there are U.S. military bases in Japan and Korea—for their security, even if their military dependence on the U.S. has significantly decreased since the 1970s. For military spending, Japan has the largest military expenditures relative to the U.S., while Taiwan and Korea spend relatively small amounts of money in arms buildups and maintenance. It is noteworthy that South Korean military spending surpassed Taiwanese military spending in 1975. The annual trends of military expenditures indicate that there have been stable differences in the military expenditures between the U.S. and the NEACs since 1980.

According to Figures 5-7, as the U.S.-NEACs trade conflict increases, the ratios of the U.S. GNP and military spending to those of the NEACs tend to decrease. U.S.-Japan trade conflict is relatively insensitive to Japanese economic/military power relative to the U.S., while U.S.-South Korea and U.S.-Taiwan trade disputes are more likely to be related to South Korean and Taiwanese economic/military powers relative to the U.S.

Additionally, East-West tension in the Pacific Basin is a factor which increases the role of U.S. hegemony in the region. Figure 8 shows that the East-West tension (cooperation-conflict scale) of Northeast Asia has gone up and down since 1970. The highest tension among superpower nations was in 1983 (U.S.-Soviet¦ KAL 007; Grenada / U.S.-China¦ Tennis asylum; exchanges cancelled) and the lowest in 1973

(U.S.-Soviet¦ Summit-Brezhnev in U.S. / U.S.-China¦ Kissinger trip; trade). According to Figures 5 and 8, during the period of 1973-1983 indicating the increasing tension among the superpowers, the U.S.-NEACs trade conflict gradually increased. It denotes that the tension in the region tends to increase the trade conflict between the U.S. and the NEACs.

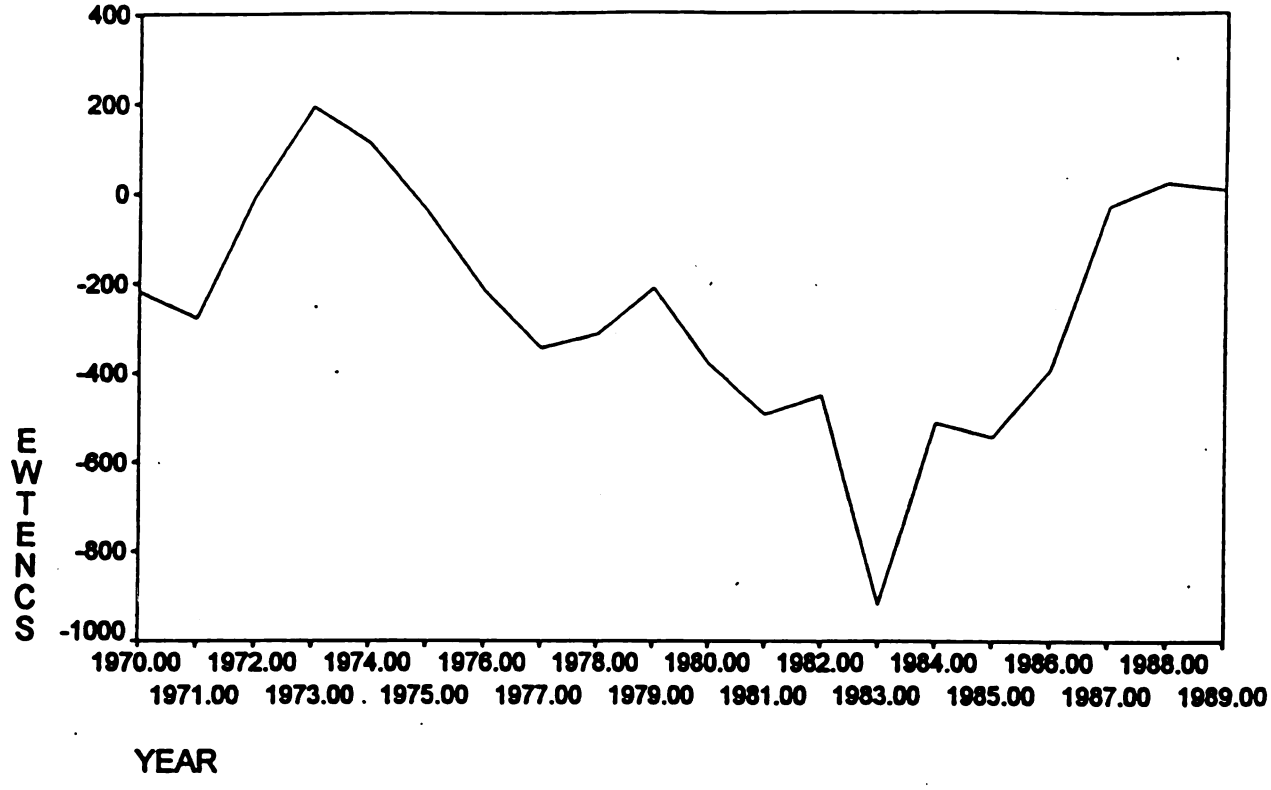

Figure 8: East-West Tension Level In Northeast Asia (cooperation-conflict scale), 1970-1989

[Source: Goldstein, Joshua S. and John R. Freeman, Three-Way Street: Strategic Reciprocity in World Politics, The University of Chicago Press, 1990.]

On the other hand, since 1983, as the tension decreases, the U.S.-NEACs trade conflict has gone up and down without any significant interaction with the tension.

Surplus capacity theory maintains that the U.S. trade conflict with the NEACs is affected by its domestic economic condition depending upon the U.S.-NEACs trade relations. That

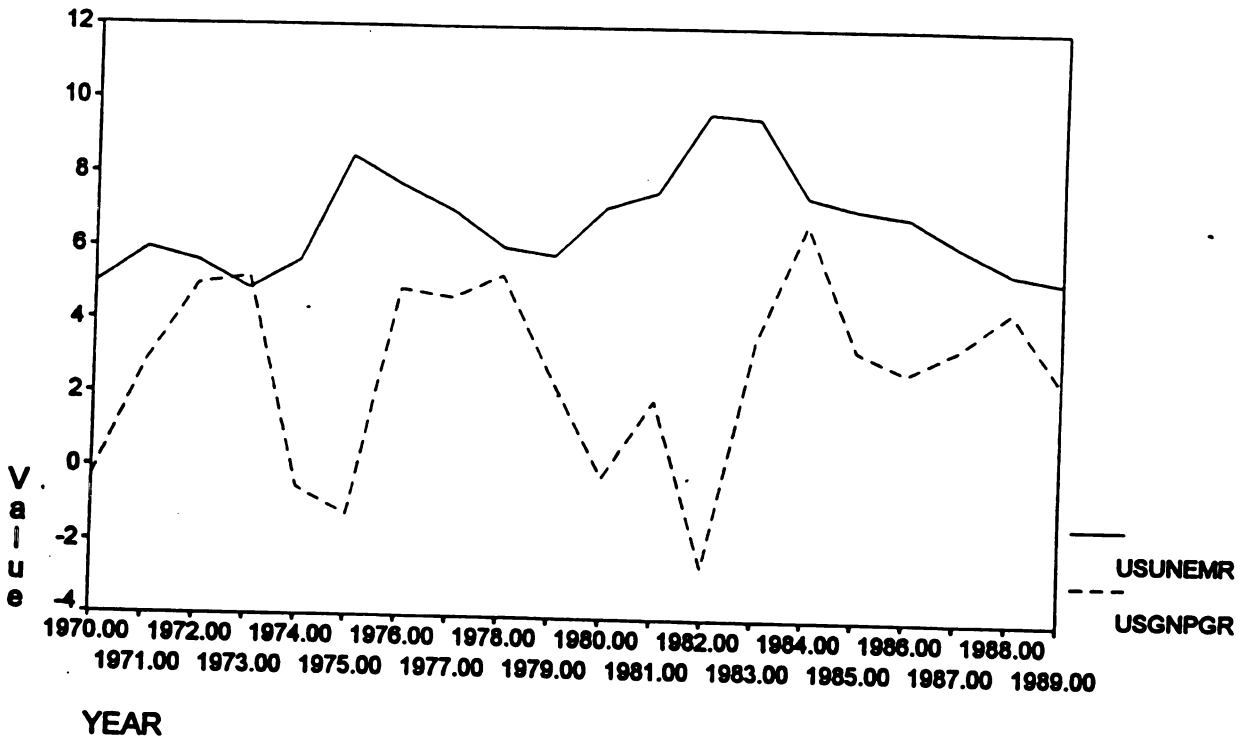

Figure 9: U.S. Unemployment and GNP Growth Rates, 1970-1989

[Source: CitiBank Data Base, CITIBASE, 1990]

is, the U.S. will become more liberal during periods of prosperity (decreasing unemployment rate and increasing GNP growth rate); conversely, the U.S. will become more protective

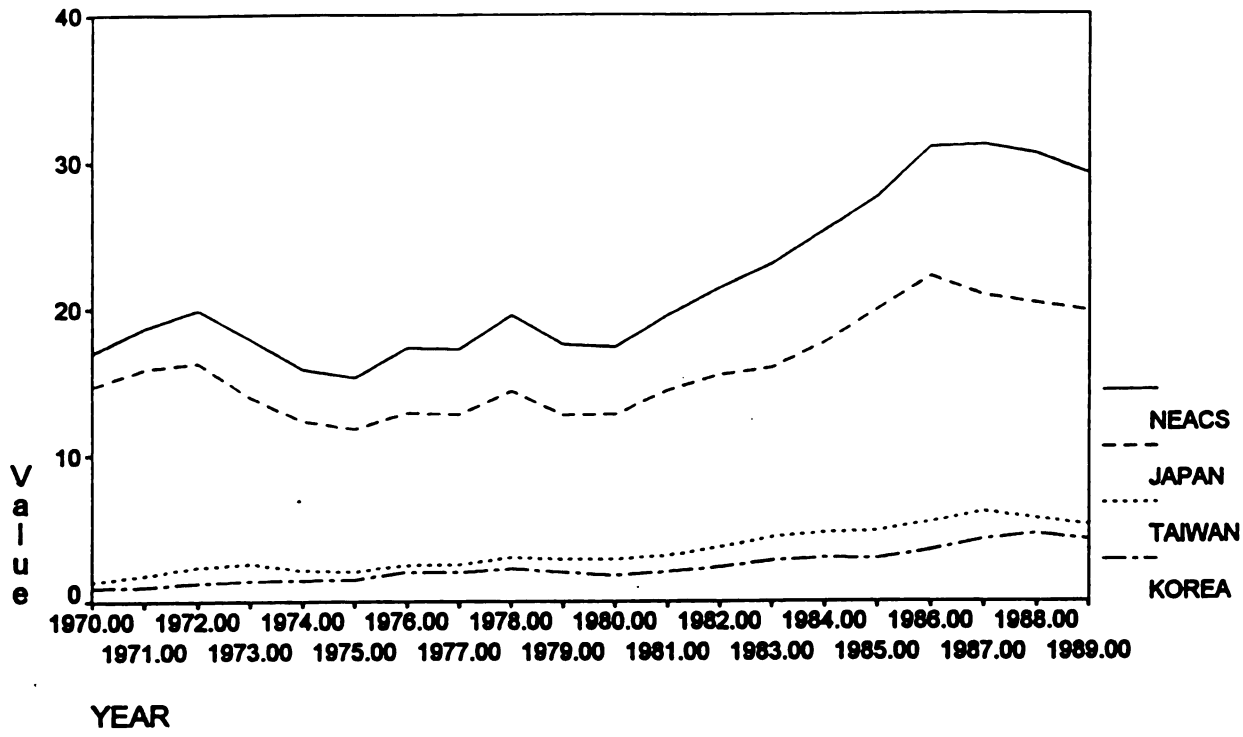

Figure 10: The Ratio of Imports from the NEAC(s) out of the Total U.S. Imports (percentage), 1970-1989

[Source: U.S. Department of Commerce, U.S. General Imports: World Area by Commodity Groupings (FT 155), Washington D.C.: U.S. Government Printing Office, 1970-1989. U.S. Bureau of Census, Statistical Abstract of the United States, Washington D.C.: U.S. Government Printing Office, 1970-1989.]

in the face of economic adversity (increasing unemployment rate and decreasing GNP growth rate). The macroeconomic conditions of the U.S., such as unemployment and GNP growth rates, have an immediate impact on the U.S.-NEACs' trade conflict. For the period between 1970 and 1989, the U.S. gross national product has fluctuated from 6.78 percent in 1984 to -2.55 percent in 1982. In addition, U.S. unemployment rates have drastically shifted, ranging from 4.86 percent in 1973 to 9.71 percent in 1982. Figure 9 shows that the U.S. unemployment and GNP growth rates tend to mutually interact. In 1982 with the highest unemployment rate and the lowest GNP growth rate, which denotes the worst U.S. economic situation, the U.S.-NEACs trade disputes remarkably increased, indicating the highest number during the period of 1970-1982.

Furthermore, U.S. trade disputes with the NEACs interact with imports into the U.S. from the NEACs. The trade disputes are caused by domestic demands for protection by increased import penetration, which produce increased trade deficit. NEACs import penetration means imports into the U.S. from Japan, South Korea, and Taiwan. The Northeast Asian economies account for 31.09 percent of the total U.S. imports in 1987 at the highest point and 15.29 percent of the total U.S. imports in 1975 at the lowest. The relative proportion of the NEACs' imports out of the total U.S. imports surpassed 20 percent in 1982 and recently hung around 30 percent. That is, one-third of the U.S. imports are coming from Japan, Korea, and Taiwan

today. Japan has the highest share with 22.14 percent in 1986 and the lowest with 11.79 percent in 1975. Korea accounts for .93 percent of the total U.S. imports in 1970 at its smallest

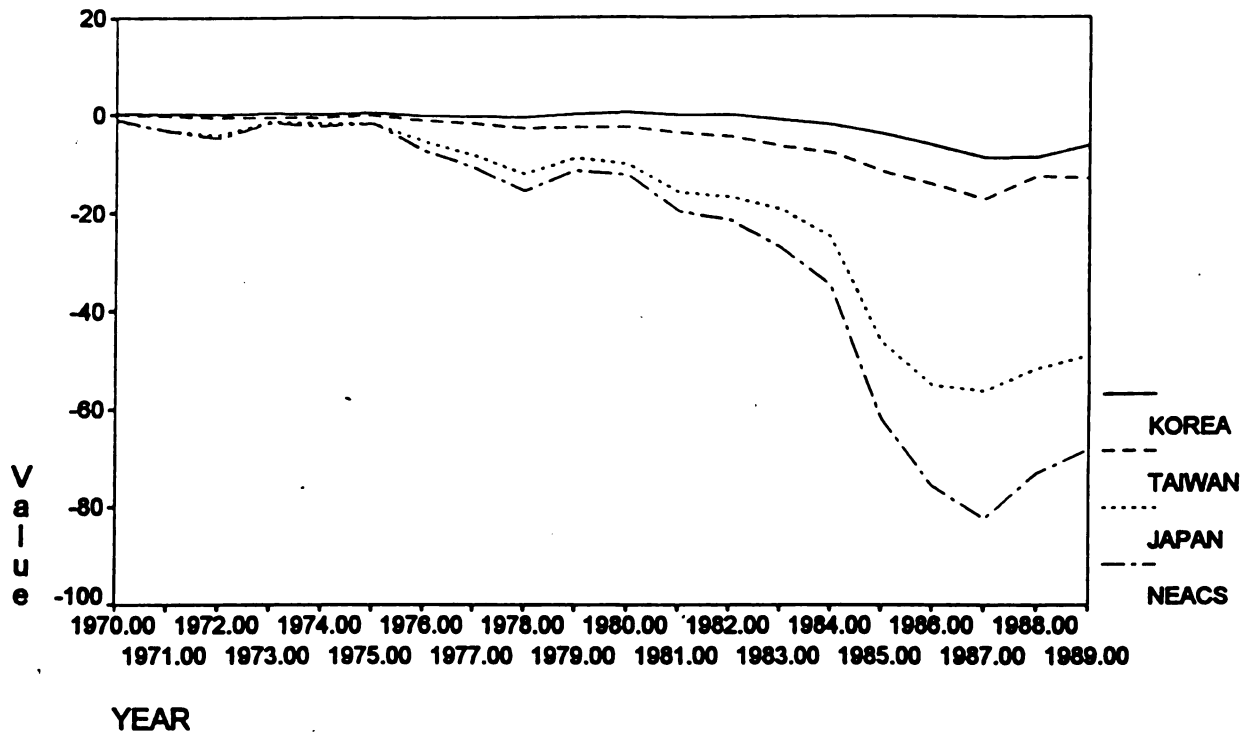

Figure 11: U.S. Trade Balance with the NEAC(s) ($billion), 1970-1989

[Source: U.S. Bureau of Census, Statistical Abstract of the United States, Washington D.C.: U.S. Government Printing Office, 1970-1989.
Council for Economic Planning and Development (Republic of China), Taiwan Statistical Data Book, 1991.]

and 4.56 percent in 1988 at its largest. Taiwan takes up 1.38 percent of the U.S. market in 1970 and 6.07 percent in 1987 at the highest. As indicated in Figures 5 and 10, the U.S.-NEACs trade conflict is positively associated with imports into the U.S. from NEACs such as Japan, Taiwan, and Korea.

On the other hand, the present study considers a factor with a high expectation of obtaining an affirmative USITC decision. As Figure 11 shows, the U.S. has consistently experienced balance of trade deficit in the U.S.-NEACs trade relations since 1970. The U.S. obtains 82.43 billion dollars of trade deficit in the U.S.-NEACs trade relations in 1987 at its highest and .97 billion dollars of trade deficit in 1970 at its lowest. Japan is the main actor of the U.S. trade deficit, followed by Taiwan and Korea. Figures 5 and 11 imply that the increased U.S. trade deficit in the U.S.-NEACs trade relations has accelerated the U.S.-NEACs trade conflict in the 1980s.

The other factor increasing the possibility of a positive USITC ruling is the presidential election cycle. As political business cycle theory points out, politicians tend to shape national economic policy for electoral purposes by increasing transfer payments immediately prior to the elections and thereby causing economic indicators to fluctuate with the occurrence of national elections. During the presidential election years (1972, 1976, 1980, 1984, and 1988), there may be U.S. industries' increased expectation of

obtaining an affirmative USITC decision and thereby increased U.S.-NEACs trade disputes. According to Figure 5, in 1972, 1980, and 1988, the U.S.-NEACs trade disputes rapidly increased, compared with those in the previous years (1971, 1979, and 1987).

From the review of the annual trends of the main determinants (hegemonic stability, surplus capacity, and U.S. trade protection decision-making process) of the U.S.-NEACs' trade disputes, the relationships between the U.S.-NEACs' trade disputes and the determinants are detected. Now, the present study moves from the simple description of the relationships to the empirical testing of the individual models and their determinants.

CHAPTER 3

METHOD OF ANALYSIS FOR TRADE CONFLICT RESEARCH

INTRODUCTION

This chapter deals with the methodological issues regarding trade conflict research. More specifically, the present chapter discusses the methodological concerns of event count analyses such as Poisson and Negative Binomial methods. After reviewing these methods, I will present the functional forms of the individual and composite models of trade conflict, that is, hegemonic stability, surplus capacity, interaction, and U.S. trade protection decision-making process models with internal-external models. Moreover, I posit the basic expected results of these models on the basis of their theoretical perspectives.

METHODOLOGICAL CONCERNS

Empirical Methods in Trade Conflict Research

The proposed study deals with dependent variables

measuring the number of times a particular event—U.S.-NEACs trade conflict (the number of petitions filed against the NEACs)—occurs. What can be the most appropriate research method for the study analyzing event-counting dependent variables? There are three basic directions of trade conflict research methods. One stream of research uses mainly descriptive statistics such as frequencies, percentages, cross-tabulations, and graphs. This kind of research develops its arguments, presenting and describing the data supporting them. Descriptive statistics are the basic tools of empirical research in the study of political science, but they are inappropriate for statistical inference—deriving a theory from existing data. Second, there are statistical techniques designed for continuous, interval level dependent variables (tariff rates, the amount of trade, and trade balance, etc.) and statistical inference. Linear regression analyses are the primary techniques, and most other techniques such as multi-equation simulation models and time-series models also belong in this category.

Regression analysis constructs an explanatory model of a dependent variable on the basis of one or more independent variables. Linear regression analysis, like OLS (ordinary least squares) analysis, assumes that the dependent variable has a linear relationship with the independent variables. If there is only one independent variable X, the predicted value of the dependent variable Y for case i is given by the

equation

$$Y_i = B_0 + B_1X_i$$

where Y_i is the predicted value of Y for case i, X_i is the value of X for case i, B_0 is the intercept—the value of Y when X is zero, and B_1 is the slope—the amount by which Y changes as X increases by one unit. In OLS regression, the Y_is are assumed to have a normal distribution and a constant variance. The linear regression analysis is based on five assumptions. (Kennedy, 1985:40-50) Most econometric problems can be characterized as situations in which one or more of these five assumptions are violated.

The first assumption is that the dependent variable can be calculated as a linear function of a specific set of independent variables, plus a disturbance term. The second assumption is that the expected value of the disturbance term is zero. That is, the error term has a zero population mean. The third assumption is that the disturbance terms all have the same variance and are not correlated with one another. Violations of this assumption bring about two major econometric problems—heteroskedasticity (when the disturbance terms do not all have the same variance) and autocorrelated errors (when the disturbance terms are correlated with one another). The fourth assumption is that the observations on the independent variable can be considered fixed in repeated samples. It is possible to repeat the sample with the same independent variables. The fifth assumption is that the

number of observations is greater than the number of independent variables and that there are no linear relationships between the independent variables. Each of the independent variables must exhibit some independent variation. This is a supplemental assumption. The multicollinearity problem (two or more independent variables highly correlated each other) is associated with this assumption. For ordinary least square (OLS) estimates to be unbiased the first and second assumptions must be true and for OLS to be the BLUE (Best Linear Unbiased Estimator) the third assumption must be satisfied.

Linear regression analysis has made a mistake in analyzing count dependent variables (the number of trade disputes, etc.) in trade conflict research, since its assumptions are not valid in the variables. The values of the Y_is are discrete events and so must be non-negative integers. Therefore, the random variables generating them cannot have a normal distribution which is continuous and can yield negative values—violations of the first and second assumptions. If the counts are large, the normal distribution may be approximately similar to the true discrete distribution. But, when the counts have small values, the use of linear regression is inappropriate and the results obtained are unreliable. (Lovett, 1989:191)

The third statistical method used in trade conflict research deals with dependent variables measuring the number

of a particular event are event-count analysis. Event-count methods such as Poisson, Generalized Event Count (GEC), and Negative Binomial (NB) analysis are more adequately applicable to the special nature of event count data. The following section discusses event-count analysis and its application to this study.

Event-Count Analysis

An important improvement in the methods used to study international trade conflict is to develop the event count techniques of analysis. To examine the general effects of the causal factors on the U.S.-NEACs trade conflict and to solve the limitations faced by the linear regression analysis, the present study uses Poisson regression analysis. A Poisson method of analysis is a useful analytical technique evaluating dependent variables which are recorded as event counts—the number of times a particular event occurs (e.g., the number of trade disputes).

What happens when event count data are analyzed by linear regression and related techniques? The techniques produce large inefficiencies, nonsensical results, and other problems. The assumption of normality of the disturbances cannot be made, since the variables take a small number of values with strictly positive probabilities. Therefore, the prediction formulae which are deduced from a linear model give impossible

values. OLS parameters are consistent, but variance for parameter estimates are inconsistently estimated and, thus, hypothesis tests will be invalid. (Gourieroux, 1984:701)

Poisson regression is appropriate when the dependent variable is a count, such as the number of times an event occurs. It may be particularly useful if some observations have very low values. The Poisson distribution describes the probability that an event occurs k times in a fixed period given that each occurrence is independent and has a constant probability. The shape of a Poisson distribution depends on the value of its mean (which is equal to its variance). If the mean is close to zero, then the distribution is strongly skewed; if the mean is larger, the peak occurs further from the vertical axis. If the mean is very large, the Poisson distribution can be approximated by the normal.

Two characteristics of the Poisson regression model are noteworthy. (Lovett, 1989:191) First, unlike linear regression, the Poisson model does not assume that the data are homoskedastic. Indeed, the variance of each case is equal to the corresponding predicted value. Consequently, the variances associated with the values of Y_i cannot be the same and cannot be normally distributed. Second, the observed value of Y_i is a count of independent events generated by a Poisson distribution with parameter $lambda_i$. Independence denotes that the probability of an event occurring at time t+1 (given what has occurred up to time t) is independent of all

previous history within a single observation period. Simply put, the occurrence of the events is independent. This means that the model is not appropriate where the occurrence of one event increases the probability of others. For example, modeling the incidence of a contagious disease would not be appropriate. The choice of Poisson models is justified if the dependent variable counts the occurrence of a given event during a fixed period and if the counts have small values (are not overdispersed). An interesting point of the Poisson distribution is the fact that the mean is equal to the variance. Failure of this restriction produces consequences similar to those for heteroskedasticity in the linear regression model. If the variance is larger than the mean, this evidence empirically implies "overdispersion" in the data.

Generally, the Poisson distribution for Y_i (Gourieroux, 1984:702-703 & Lee, 1986:690-691) is:

$$\Pr(Y_i = y_i) = f(y_i) = \exp(-\text{lambda}_i)\,\text{lambda}_i^{y} / y_i!$$

where $(y_i = 0,1,2,\ldots)$.

Its parameter is $\text{lambda}_i = \exp(x_i b) = \exp(\Sigma^{n}_{i=1}\, x_{ik} b_k)$ [3]

$[\text{lambda}_i = \exp(x_i b + e_i)$ where e_i is error terms.]

where y_i (the observations of a discrete variable)

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[3] The exponential function is justified because lambda_i (the rate of event occurrence) must always be positive. $\log \text{lambda}_i = x_i b$. $E(Y_i|x_i) = \text{lambda}_i$.

$x_{i1}, \ldots, x_{ik}$ (k exogenous variables associated with the ith observation/a vector of regressors)
$b_1, \ldots, b_k$ (k unknown parameters)

In a Poisson distribution, the mean and the variance are equal to lambda_i—$E(Y_i) = \text{Var}(Y_i) = \text{lambda}_i$—and the density function of y_i [Poisson probability specification: $\Pr(Y_i)$] is:

$$\exp(-\text{lambda}_i)\text{lambda}_i^{y} / y_i! \quad (y_i = 0,1,2,\ldots).$$

The log-likelihood function is

$$L(b) = -\Sigma^{n}_{i=1} \text{lambda}_i + \Sigma^{n}_{i=1} y_i \text{loglambda}_i - \Sigma^{n}_{i=1} \log(y_i!)$$
$$= \text{constant} - \Sigma^{n}_{i=1} \exp(x_i b) + \Sigma^{n}_{i=1} y_i x_i b.$$

In the maximization of L(b), the first order conditions are:

$$dL/db = -\Sigma^{n}_{i=1} x_i'[\exp(x_i b) - y_i] = 0$$
$$\text{or } \Sigma^{n}_{i=1} x_i'(\text{lambda}_i - y_i) = 0.$$

This equation implies that the sum of the residuals is equal to zero. If the likelihood of the basic Poisson model is used, the estimator obtained is consistent and asymptotically normal. The maximum likelihood estimate (MLE) $\hat{b}$ of b is the solution of the following moment equations:

$$\Sigma^{n}_{i=1} x_i' y_i = \Sigma^{n}_{i=1} x_i' \exp(x_i \hat{b})$$

The second-order derivative matrix is

$$d^2L / db \cdot db' = -\Sigma^{n}_{i=1} x_i' x_i \exp(x_i b)$$

which implies that the log likelihood function is concave.

$\hat{b}$, the effect of explanatory variables on the dependent variable, can be estimated by using the method of maximum likelihood.[4] The method of Poisson analysis is a useful statistical technique evaluating the empirical relevance of each perspective of international trade conflict recorded as annual event counts.

However, the basic Poisson model does not correct for selection bias present in the data set. This bias results from the fact that there are no cases of zero trade disputes in the data of U.S.-Japan and U.S.-NEACs trade disputes. This kind of selection on the dependent variable tends to bias the resulting estimates of the effects of explanatory variables. In fact, the estimates are biased in a particular direction—toward zero. The Poisson distribution can be modified to take into account the fact that the data have been truncated at zero; with this modification, the event counts are always positive integers. (Martin, 1992:75-76)

From the truncated Poisson distribution (King, 1989:132-133) for the positive integers, the density function of y_i is:

$$\text{lambda}_i^{y} / [\exp(\text{lambda}_i) - 1]y_i! \quad (y_i = 1,2,\ldots).$$[5]

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[4] The present study uses a computer program for statistical conduct—GAUSS.

[5] When y_i is equal to 0, the basic density function of y_i is $\exp(-\text{lambda}_{0i})\text{lambda}^{0}_{0i} / 0! = \exp(-\text{lambda}_i)$.
The method of deriving a truncated Poisson distribution is based directly on the basic conditional probability rule: $\Pr(A|B) = \Pr(A|B) / \Pr(B)$.
The corresponding truncated Poisson distribution for the positive integers only is:

In the basic Poisson model, we consider the distribution with $y_i = 0$ and $y_i > 0$. However, in the truncated Poisson model, we pay attention only to the cases with $y_i > 0$. We may obtain different parameters from the same data set depending upon the basic or the truncated Poisson model. In the present study, I use the basic Poisson model for U.S.-South Korea and U.S.-Taiwan trade disputes with zero cases in the data set, and the truncated Poisson model for U.S.-Japan and U.S.-NEACs trade disputes with positive cases only in the data set.

The applicability of Poisson regression analysis depends on the assumption that the event counts are the dependent variable with a Poisson distribution and are independent of one another. In the proposed study, we assume that trade conflicts are occurring independently of one another, and thereby the Poisson method of analysis is appropriate. Under this independence principle, trade disputes are not contagious—that is, the occurrence of some trade disputes do not increase the probability of future trade disputes. However, if the trade disputes between the U.S. and the NEACs may are mutually interdependent with one another, the U.S.-NEACs (the whole NEACs) trade disputes are contagious outcomes, since the NEACs are export-oriented countries engaging in the similar industries. Furthermore, U.S.-NEAC

$[\exp(-\text{lambda}_i)\text{lambda}_i^{y} / y_i!] / \Pr(y_i > 0)$ and
$[\exp(-\text{lambda}_i)\text{lambda}_i^{y} / y_i!] / [1 - \Pr(y_i = 0)]$.
The result is:
$[\exp(-\text{lambda}_i)\text{lambda}_i^{y} / y_i!] / [1 - \exp(-\text{lambda}_i)]$.

(each NEAC) trade disputes in semi-conductor industries may be associated with those in computer industries. In this case, the assumption of independence, which results in the specification of variance equal to $lambda_i$ for all observations, is clearly incorrect.

Poisson distribution possesses some restrictive properties, in particular, that the variance and mean functions are exactly equal. To test this restriction, we need to consider two forms of "contagion"—negative and positive. Negative contagion denotes a process on which the results tend to stay close to the mean for each observation and so are relatively predictable. In this situation, a U.S. industry's decision to file a petition against a NEAC will decrease the probability of its decision against other NEACs (the U.S.-NEACs trade disputes as a negative contagious process) or other U.S. industries' decisions against the NEAC (the U.S.-NEAC trade conflict as a negative contagious process). This effect would decrease the variance of Y_i in repeated trials, so that $Var(Y_i) < lambda_i$. Positive contagion, on the other hand, tends to lead to extreme results, so that the expected level of trade conflict is relatively hard to predict. In this case, a U.S. industry's decision to file a petition against an NEAC will increase the probability of its decision against other NEACs (the U.S.-NEACs trade disputes as a positive contagious process) or other U.S. industries' decisions against the NEAC (the U.S.-

NEAC trade conflict as a positive contagious process). In other words, the variance of Y_i will increase, so that $Var(Y_i) > lambda_i$. (Martin, 1992:78) In the present study, only one type of interaction—positive contagion—needs to be examined, since the U.S.-NEAC(s) trade disputes may positively interact with one another. The U.S.-NEAC trade conflict may increase the probability of the U.S.-other NEAC trade disputes. The U.S.-NEAC trade conflict in an industry may increase the probability of the trade conflict in other industries.

The Poisson distribution can be modified to allow for positive contagion. Whereas $E(Y_i) = lambda_i$ and $Var(Y_i) = lambda_i$ in the Poisson distribution, in the negative binomial (NB) distribution we set:

$E(Y_i) = lambda_i$ and $Var(Y_i) = lambda_i [1 + exp(gamma)]$.[6] This distribution varies from the Poisson only in the inclusion of gamma. A negative value of gamma would decrease the variance of Y_i, while a positive value of gamma would increase the variance. Larger values of gamma mean that more overdispersion (and therefore contagion) is present in the data. The NB model shows whether positive contagion

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[6] gamma = level of dispersion / the degree to which trade disputes are contagious.
exp(gamma) = θ
$\sigma^2 = 1 + \theta$: the variance mean ratio of the negative binomial model.
$\sigma^2 = 1$: the Poisson distribution with the assumption of independence.
$\sigma^2 > 1$: The data are overdispersed. (evidence of either contagion or heterogeneity)

exists—that the events of U.S.-NEACs trade disputes are not independent of one another. In the present study, allowing for positive contagion may improve the basic Poisson model's performance. A popular alternative model instead of the Poisson distribution is the negative binomial distribution model. (King, 1989:136-140)

Now, I move from the basic Poisson distribution to the negative binomial distribution. If over-dispersion (resulting from contagion) is present, σ^2 will be greater than 1. To simplify later analysis, I reparameterize this distribution so that $\sigma^2 = 1 + \theta$ and $\theta = \exp(\text{gamma})$. Therefore, the mean is still:

$$E(Y_i) = \text{lambda}_i = \exp(x_i b)$$

but the variance is:

$$\text{Var}(Y_i) = (1 + \theta)\text{lambda}_i = [1 + \exp(\text{gamma})]\text{lambda}_i.$$

Now, the negative binomial distribution is:

$$\Pr(Y_i = y_i) = f(y_i)$$

$$= [\Gamma(\text{lambda}_i/\theta + y_i) / y_i!\Gamma(\text{lambda}_i/\theta)]\ \theta^{y}(1 + \theta)^{-(\text{lambda}/\theta + y)}$$

where $(y_i = 0,1,2,\ldots)$.

Thus, the negative binomial specification allows for overdispersion with the original Poisson a limiting case as $\theta \to \infty$ (Hausman, 1984:921-928, Lee, 1986:696-700, & King, 1989:136-141). In turn, $\hat{b}$ (the effect of explanatory variables on the dependent variable) and gamma (level of dispersion) can be estimated by using the method of maximum likelihood.

As with the previous model, if no zero disputes exist in U.S.-NEACs trade conflict, the observation never appears in the data set. As a result, the observed data y_i are always greater than zero. So, I have constructed a model that takes into account the truncation-at-zero problem. A truncated-at-zero data distribution can be derived from the original negative binomial distribution just as it was for the Poisson. The probability of a zero under a negative binomial distribution is derived by substituting $y_i = 0$ into the above equation:

$$f(0) = (1 + \theta)^{-\text{lambda}/\theta}$$

Thus, the truncated-at-zero negative binomial distribution is as follows:

$$f(y_i) = [\Gamma(\text{lambda}_i/\theta + y_i)/y_i!\Gamma(\text{lambda}_i/\theta)(1 - (1 + \theta)^{-(\text{lambda}/\theta)})]$$
$$\theta^y(1 + \theta)^{-(\text{lambda}/\theta + y)}$$

where $(y_i = 1,2,...)$.

The truncated NB model only considers the cases with $y_i > 0$. As with the previous Poisson model, I use the NB model for U.S.-South Korea and U.S.-Taiwan trade disputes with zero cases and the truncated NB model for U.S.-Japan and U.S.-NEACs trade disputes with positive cases only.

The methodological perspectives mentioned above can be expressed as:

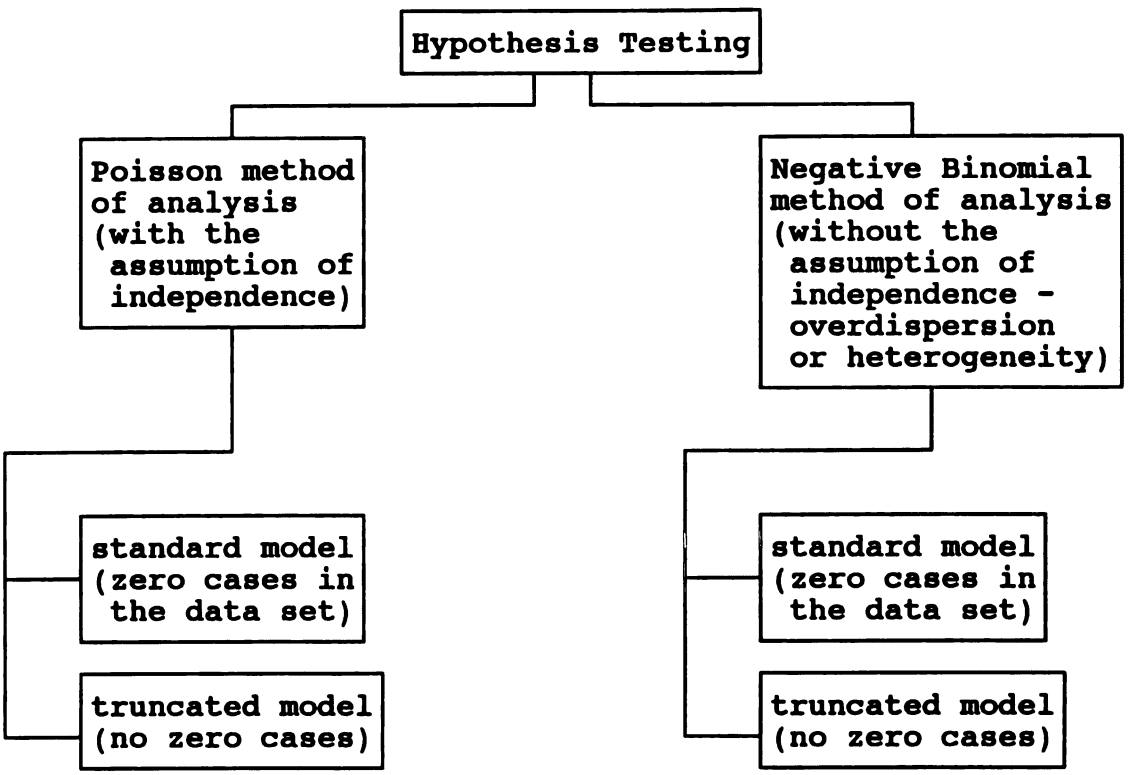

Figure 12: Hypothesis Testing Methods

In determining which of the models and factors is more important in explaining U.S.-NEACs trade conflict, I use criteria from several different perspectives. (Lovett, 1989:193) One of these is goodness-of-fit (log-likelihood ratio). Another one is the significance of the parameters, which can be assessed using t values, obtained by dividing each parameter estimate by its standard error. A third one is interpretability, which can best be evaluated by seeing if the sign and magnitude of parameter estimates accord with theoretical expectations. Ideally a regression model (Poisson or otherwise) should have a good fit, significant parameters,

and a clear interpretation. In practice, however, these are not always attainable simultaneously, and the best compromise must be chosen.

MODELS OF U.S.-NEACs' TRADE CONFLICT

The two main arguments of international trade conflict will be analyzed at the national/regional/whole trade area level. The present study will be a cross-national event count analysis. For this study dealing with event-counting dependent variables, I initially use a Poisson model analysis to evaluate the empirical relevance of each perspective. This study then draws a Negative Binomial (NB) model analysis to examine the existence of "contagion" in U.S.-NEACs trade disputes. The multivariate models which are tested in this study concern hegemonic stability, surplus capacity, interaction, and the U.S. trade protection decision-making process. First, the hegemonic stability model consists of the degree of dominance of the U.S. over the NEACs and the East-West tension levels in Northeast Asia. Second, the surplus capacity model consists of U.S. domestic macroeconomic conditions and the NEACs import penetration. Third, the alternative models consider interaction of hegemonic stability and surplus capacity and U.S. intervening political factors to explain U.S. trade disputes with the NEACs.

The proposed study uses a multiple regression model containing a multiplicative interaction term along with two basic multiple regression models. I employ the model to examine the importance of interactive effects between hegemonic stability and surplus capacity in explaining the U.S. trade conflict with the NEACs. That is, the model explains the extent to which the impact of either variable is conditional depending upon the extent to which the other is present. Based on the assumption that these independent variables are interdependent, the study uses the multiplicative interaction regression model to explain the interactive effects and conditional relationships.

To adjust for interaction effects in the regression model I include in the analysis a variable that is a composite of the two variables. That is, I adjust by computing a new variable (HS multiplied by SC) and including this interaction term in the regression as an independent variable along with its two components. If the coefficient for the interaction term is statistically significant, it indicates that its variables have a combined effect as well as their interaction effects. The interaction variables are deduced from the hegemonic stability and surplus capacity variables on the basis of the actual direction of the relationships. The directions of the varying indicators of each variable determine the number of interaction terms. (Pindyck, 1981:110)

The hegemonic stability-surplus capacity interaction

model can be separated into a pair of linear relationships between each independent variable and trade conflict, in which the other variable is treated as a variable constant. The model considering the interactive effect of both factors on the U.S.-NEACs trade conflict may be very persuasive. Additionally, I would like to present a model including U.S. domestic political factors. Generally speaking, trade conflict stems from a combination of falling U.S. hegemony and surplus capacity, depending upon some intervening political factors.

Moreover, the proposed study deals with the question, what are the motivations behind the U.S. protective trade decision against the NEACs? There are two important motivations behind the U.S. trade protection against the NEACs—external and internal factors. First, external factors, stimulated by U.S. trade relations with the NEACs, are the NEACs import penetration, the U.S. trade deficit with respect to the NEACs, the dominance of the U.S. over the NEACs in U.S.-NEACs relations, and the East-West tension in Northeast Asia. Second, internal factors, stimulated by the U.S. domestic conditions, are the U.S. macroeconomic conditions and presidential election cycle. These factors (internal or external), based on hegemonic stability, surplus capacity, and U.S. trade protection decision making process, can be categorized in terms of where the U.S.-NEACs trade disputes come from. The empirical results of two models will

show whether U.S. trade protection against the NEACs is based on the U.S. relations with the NEACs or the U.S. own conditions.

Poisson Models

To examine the general effects of hegemonic stability, surplus capacity, and domestic political factors on the U.S.-NEACs trade conflict, the present study utilizes Poisson regression analysis. There is an important assumption in the Poisson process—independence. Independence denotes that the probability of an event occurring at time t+1 (given what has occurred up to time t) is independent of all previous history within a single observation period. Simply put, the occurrence of the events is independent. The choice of the Poisson models is justified if the dependent variable counts the occurrence of a given event during a fixed period and if the counts have small values.

In the proposed study, the dependent variable, the incidence of trade conflicts between the U.S. and the NEACs, is recorded as annual event counts. Furthermore, the occurrence of the U.S.-NEACs trade conflicts is assumed to be independent in nature. Initially, I present four independent Poisson regression models, based on exponential linear functions of hegemonic stability, surplus capacity, hegemonic stability-surplus capacity interaction, and the U.S. trade

protection decision-making process. Generally, the basic Poisson model is:

$$Pr(Y_i = y_i) = f(y_i) = \exp(-\text{lambda}_i)\text{lambda}_i^{y} / y_i!$$

where $(y_i = 0,1,2,...)$.

$$\text{lambda}_i = \exp(x_i b) = \exp(\Sigma^{n}_{i=1}\ x_{ik}b_k)$$

where y_i (the observations of a discrete variable)
= U.S. trade conflict with the NEACs

$x_{i1},.... ,x_{ik}$ (k exogenous variables associated with the ith observation/a vector of regressors)

= (Hegemonic Stability Model)
X_1 = U.S. economic hegemony
X_2 = U.S. military hegemony
X_3 = East-West tension level in Northeast Asia

(Surplus Capacity Model)
X_4 = U.S. macroeconomic condition (Unemployment rates)
X_5 = U.S. macroeconomic condition (GNP growth rates)
X_6 = NEACs import penetration

(Interaction Model)
X_7 (HS) = U.S. hegemonic stability (aggregate)
X_8 (SC) = U.S. surplus capacity (aggregate)
X_9 (HS·SC) = Interaction of U.S. hegemonic stability and surplus capacity

(U.S. Trade Protection Decision Making Model)
X_{10} (DM_1) = Likelihood of an affirmative decision (U.S. trade balance with the NEACs)
X_{11} (DM_2) = Likelihood of an affirmative decision (Presidential election cycle)

$b_1,.... ,b_k$ (k unknown parameters)
= b_1 - b_3 (H.S.M. estimates),
b_4 - b_6 (S.C.M. estimates),
b_7 - b_9 (Interaction M. estimates),
b_{10} - b_{11} (D.M.M. estimates).

Finally, considering the fact that the U.S.-NEAC(s) trade conflict is derived from the U.S.-NEACs relations or U.S.

domestic conditions, we can examine whether or not there is an action-reaction linkage between the U.S. trade protection against the NEACs and the U.S.-NEACs trade relations. To test for a feedback effect between them, this study simply analyzes two independent Poisson models:

$$\Pr(Y_i = y_i) = f(y_i) = \exp(-\text{lambda}_i)\,\text{lambda}_i^{y} / y_i!$$

where $(y_i = 0,1,2,\ldots)$.

$$\text{lambda}_{1i} = \exp(x_i b') = \exp(\Sigma^{n}_{i=1} x_{ik} b'_k) \text{ - (1) external model}$$

$$\text{lambda}_{2i} = \exp(x_i b'') = \exp(\Sigma^{n}_{i=1} x_{ik} b''_k) \text{ - (2) internal model}$$

where y_i = U.S.-NEACs' trade conflict with a positive USITC ruling
[U.S. (protective) import policy to the NEACs]
X_1, X_2 (HS) = U.S. (economic/military) hegemony - (1)
X_3, X_4 (SC) = U.S. surplus capacity (macroeconomic conditions) - (2)
X_5 (DM_1) = U.S. trade balance with respect to the NEACs - (1)
X_6 (DM_2) = Presidential election cycle - (2)
X_7 (TL) = East-West tension level in Northeast Asia - (1)
X_8 (IP) = NEACs import penetration - (1)

$b_1', b_2', b_5', b_7', b_8'$ = equation (1) estimates
b_3'', b_4'', b_6'' = equation (2) estimates.

On the basis of the Poisson processes mentioned above, the models calculate estimates $\hat{b}$, $\hat{b}'$, and $\hat{b}''$, the effects of explanatory variables on the dependent variable using the method of maximum likelihood through statistical computer program—GAUSS.

However, the basic Poisson model does not correct for selection bias present in the data set. This bias results

from the fact that there are no cases of zero trade disputes in the data of U.S.-Japan and U,S,-NEACs trade disputes. Then, the truncated Poisson distribution for the positive integers can be derived and the density function of y_i is:

$$f(y_i) = \text{lambda}_i^{y} / [\exp(\text{lambda}_i) - 1]y_i! \quad (y_i = 1,2,...).$$

In the basic Poisson model, we consider the distribution with $y_i = 0$ and $y_i > 0$. However, in the truncated Poisson model, we pay attention only to the cases with $y_i > 0$. We may obtain different parameters from the truncated Poisson model. In the present study, I use the basic Poisson model for U.S.-South Korea and U.S.-Taiwan trade disputes with zero cases, and the truncated model for U.S.-Japan and U.S.-NEACs trade disputes with positive cases only in the data set.

Negative Binomial Models

Poisson distribution contains a particular restriction that the variance and mean functions are exactly equal. In the present study, we take into consideration one type of interaction—positive contagion—since the U.S.-NEAC(s) trade disputes may positively interact with one another. If over-dispersion (resulting from contagion) is present, σ^2 will be greater than 1. In the negative binomial distribution, the mean is:

$$E(Y_i) = \text{lambda}_i = \exp(x_i b)$$

and the variance is:

$$Var(Y_i) = (1 + \Theta)lambda_i = [1 + exp(gamma)]lambda_i.$$

The negative binomial model is:

$$Pr(Y_i = y_i) = f(y_i)$$

$$= [\Gamma(lambda_i/\Theta + y_i) / y_i!\Gamma(lambda_i/\Theta)]\ \Theta^y(1 + \Theta)^{-(lambda/\Theta + y)}$$

where $(y_i = 0,1,2,...)$.

$$lambda_i = exp(x_ib) = exp(\Sigma^n_{i=1}\ x_{ik}b_k)$$

where y_i (the observations of a discrete variable)
= U.S. trade conflict with the NEACs

$x_{i1},.... ,x_{ik}$ (k exogenous variables associated with the ith observation/a vector of regressors)

= (Hegemonic Stability Model)
X_1 = U.S. economic hegemony
X_2 = U.S. military hegemony
X_3 = East-West tension level in Northeast Asia

(Surplus Capacity Model)
X_4 = U.S. macroeconomic condition (Unemployment rates)
X_5 = U.S. macroeconomic condition (GNP growth rates)
X_6 = NEACs import penetration

(Interaction Model)
X_7 (HS) = U.S. hegemonic stability (aggregate)
X_8 (SC) = U.S. surplus capacity (aggregate)
X_9 (HS·SC) = Interaction of U.S. hegemonic stability and surplus capacity

(U.S. Trade Protection Decision Making Model)
X_{10} (DM_1) = Likelihood of an affirmative decision (U.S. trade balance with the NEACs)
X_{11} (DM_2) = Likelihood of an affirmative decision (Presidential election cycle)

$b_1,.... ,b_k$ (k unknown parameters)
= b_1 - b_3 (H.S.M. estimates),
b_4 - b_6 (S.C.M. estimates),
b_7 - b_9 (Interaction M. estimates),
b_{10} - b_{11} (D.M.M. estimates).

The negative binomial specification allows for overdispersion with the original Poisson a limiting case as $\Theta \to \infty$. $\hat{b}$ (the

effect of explanatory variables on the dependent variable) and gamma (level of dispersion) can be estimated by using the method of maximum likelihood.

Finally, again we take a look at whether the U.S.-NEAC(s) trade conflict is derived from the U.S.-NEACs relations or U.S. domestic conditions. To test for an action-reaction linkage between U.S. trade protection against the NEACs and U.S.-NEACs trade relations (e.g., the imports into the U.S. from the NEACs), this study simply analyzes two independent negative binomial models:

$$\Pr(Y_i = y_i) = f(y_i)$$

$$= [\Gamma(\text{lambda}_i/\theta + y_i) \,/\, y_i!\Gamma(\text{lambda}_i/\theta)]\ \theta^{y}(1+\theta)^{-(\text{lambda}/\theta + y)}$$

where $(y_i = 0,1,2,\ldots)$.

$\text{lambda}_{1i} = \exp(x_i b') = \exp(\Sigma^{n}_{i=1}\, x_{ik} b'_k)$ - (1) external model

$\text{lambda}_{2i} = \exp(x_i b'') = \exp(\Sigma^{n}_{i=1}\, x_{ik} b''_k)$ - (2) internal model

where y_i = U.S.-NEACs' trade conflict with a positive USITC ruling
[U.S. (protective) import policy to the NEACs]
X_1, X_2 (HS) = U.S. (economic/military) hegemony - (1)
X_3, X_4 (SC) = U.S. surplus capacity (macroeconomic conditions) - (2)
X_5 (DM_1) = U.S. trade balance with respect to the NEACs - (1)
X_6 (DM_2) = Presidential election cycle - (2)
X_7 (TL) = East-West tension level in Northeast Asia - (1)
X_8 (IP) = NEACs import penetration - (1)

$b_1', b_2', b_5', b_7', b_8'$ = equation (1) estimates
b_3'', b_4'', b_6'' = equation (2) estimates.

Again, the models calculate estimates $\hat{b}$, $\hat{b}'$ and $\hat{b}''$, the effects of explanatory variables on the dependent variable

using the method of maximum likelihood through the statistical computer program—GAUSS.

Like the previous model, if the observed data y_i are always greater than zero, I need to construct a model that takes into account the truncation-at-zero problem. A truncated-at-zero data distribution can be derived from the original negative binomial distribution just as it was for the Poisson as follows:

$$f(y_i) = [\Gamma(\text{lambda}_i/\theta + y_i)/y_i!\Gamma(\text{lambda}_i/\theta)(1 - (1 + \theta)^{-(\text{lambda}/\theta)})]$$
$$\theta^{y}(1 + \theta)^{-(\text{lambda}/\theta + y)}$$

where $(y_i = 1,2,\ldots)$.

The truncated NB model only considers the cases with $y_i > 0$. Like the previous Poisson model, I use the NB model for U.S.-South Korea and U.S.-Taiwan trade disputes with zero cases and the truncated NB model for U.S.-Japan and U.S.-NEACs trade disputes with positive cases only.

EXPECTED RESULTS

The proposed study seeks to evaluate theoretical relevancies of each perspective of U.S. trade conflict with the NEACs through empirical techniques (Poisson and Negative Binomial methods of analysis). In this study, U.S. trade disputes with the NEACs are explained by two complementary theories of trade relations—hegemonic stability and surplus

capacity. This study maintains that high trade conflict with the NEACs is correlated with non-hegemonic U.S. power with respect to the NEACs, as well as serious U.S. domestic surplus capacity problems. Moreover, U.S.-NEAC trade conflict is affected by U.S. industries' perception of the likelihood of a positive USITC ruling. In conclusion, when two main conditions are simultaneously present, we may easily explain the U.S.-NEAC(s) trade conflict. That is, high U.S. trade disputes with the NEACs are based on decreasing U.S. hegemony in U.S.-NEAC trade relations (U.S. economic/military dominance over the NEACs↓ and East-West tension in Northeast Asia↓) and worsening U.S. surplus capacity problems (U.S. unemployment↑/GNP growth↓ rates and NEACs' import penetration↑), while low U.S. trade disputes with them result from increasing U.S. hegemony in U.S.-NEAC trade (U.S. economic/military dominance over the NEACs↑ and East-West tension in Northeast Asia↑) relations and improving U.S. surplus capacity problems (U.S. unemployment↓/GNP growth↑ rates and NEACs' import penetration↓). On the other hand, in inconsistent cases (hegemon/surplus capacity problem and no hegemon/no surplus capacity problem) the U.S. trade conflict with the NEACs will be relatively dependent on U.S. domestic political factors (U.S. trade deficit with respect to the NEACs↑ and U.S. presidential election cycle↑)—U.S. industries' pressures on Congress, the USITC, and the president, on the basis of their perceptions of the likelihood

of a positive USITC ruling. At the national level of analysis, the U.S.-Japan trade disputes are more likely to be affected by surplus capacity and decision-making models. The U.S.-Korea/Taiwan trade disputes may be relatively based on surplus capacity and hegemonic stability models. At the regional level of analysis, the U.S.-NEACs trade conflict may depend upon the surplus capacity theory, partially interacting with the hegemonic stability and decision-making ideas. Moreover, the proposed study deals with the question, what are the motivations behind the U.S. protective trade decision against the NEACs? There are two important motivations behind the U.S. trade protection against the NEACs—external (stimulated by U.S. relations with the NEACs) and internal (stimulated by U.S. domestic conditions) factors. These factors (internal or external) can be categorized in terms of where the USITC protective decisions come from. The empirical results of two models will show whether U.S. trade protection against the NEACS is based on the U.S. relations with the NEACs or the U.S. domestic conditions.

CHAPTER 4

RESULTS OF THE ANALYSES

INTRODUCTION

This chapter will present and interpret the results of the analyses based on the models and methodological concerns discussed in Chapter III. First, the results of the descriptive statistics needed to understand the main variables' characteristics are presented and explained. Second, the results of the Poisson estimation to evaluate the explanatory and predictive power of the individual models and their determinants are analyzed. Third, the results of a Negative Binomial (NB) analysis is presented and examined in terms of the existence of contagious processes in U.S.-NEACs trade disputes. Finally, a cross-national comparative analysis explaining U.S.-NEACs' trade disputes is provided. In this chapter, U.S.-NEACs' trade conflict is empirically examined through the use of Poisson and Negative Binomial methods of analysis.

INTERPRETATION OF RESULTS

Descriptive Analysis Result

The proposed study deals with data on trade conflict between the U.S. and the Northeast Asian Countries (NEACs) for the period 1970 to 1989. The data set includes 8 trade conflict variables, 9 hegemonic stability variables, 6 surplus capacity variables, and 5 alternative variables.

Table 1 displays that, on the average, the Northeast Asian countries annually experienced 14.10 bilateral trade conflicts with the U.S. Japan had the largest share with 7.75, followed by Korea (3.30) and Taiwan (3.05). The ratio of U.S. GNP to NEAC(s) GNP shows that Taiwan had the weakest economic power relative to U.S. economic power, followed by Korea; Japan had the strongest economic power. In comparing military spending, Japan spent the largest amount relative to the U.S. military expenditures, while Taiwan and Korea spent relatively small amounts of money in arms buildup and maintenance. For the period 1970-1989, on the average, the Northeast Asian economies accounted for 21.62 percent of total U.S. imports. Japan had the highest share with 15.86 percent, followed by Taiwan (3.42 percent) and Korea (2.34 percent). The U.S., on the average, obtained 26.82 billion dollars of trade deficit in the U.S.-NEACs' trade relations. Japan (19.67 billion dollars) was the main actor in the U.S. trade deficit, followed by Taiwan (5.26 billion dollars) and Korea (1.90 billion dollars). For the years between 1970 and 1989,

Table 1: Descriptive Analysis Results for Select Variables

Variable	Mean	Std. Dev.	Minimum	Maximum	N
USTRCNE	14.10	10.43	3.00	34.00	20
USTRCJA	7.75	4.59	2.00	20.00	20
USTRCKO	3.30	4.11	.00	11.00	20
USTRCTA	3.05	3.75	.00	11.00	20
USGNPNE	2.81	.87	1.56	4.68	20
USGNPJA	3.06	.90	1.74	5.01	20
USGNPKO	60.83	29.21	27.75	117.65	20
USGNPTA	86.25	41.26	34.27	178.05	20
USMSPNE	12.30	8.04	6.61	32.41	20
USMSPJA	18.36	12.40	9.85	48.81	20
USMSPKO	80.50	62.85	36.01	239.55	20
USMSPTA	73.82	33.79	45.56	161.52	20
EWTENCS	-250.65	270.34	-919.90	194.90	20
USUNEMR	6.75	1.41	4.86	9.71	20
USGNPGR	2.72	2.51	-2.55	6.78	20
NEIMPEN	21.62	5.43	15.29	31.09	20
JAIMPEN	15.86	3.20	11.79	22.14	20
KOIMPEN	2.34	1.07	.93	4.56	20
TAIMPEN	3.42	1.41	1.38	6.07	20
USTBNE	-26.82	28.57	-82.43	-.97	20
USTBJA	-19.67	20.08	-56.33	-1.22	20
USTBKO	-1.90	3.16	-8.89	.43	20
USTBTA	-5.26	5.51	-17.21	-.02	20
USPRELC	.25	.44	.00	1.00	20
USTCPNE	9.75	8.81	1.00	28.00	20
USTCPJA	5.20	4.06	1.00	17.00	20
USTCPKO	2.40	3.14	.00	9.00	20
USTCPTA	2.10	3.04	.00	10.00	20

Note: USTRC* = U.S. trade conflict with the NEAC(s); USGNP* = U.S. GNP/NEAC(s) GNP(s); USMSP* = U.S. military spending/NEAC(s) military spending; EWTENCS = East-West tension level in Northeast Asia; USUNEMR = U.S. unemployment rate; USGNPGR = U.S. GNP growth rate; *IMPEN = NEAC(s) import penetration into the U.S.; USTB* = U.S. trade balance with the NEAC(s); USPRELC = U.S. presidential election cycle; and USTCP* = U.S.-NEAC(s) trade conflict with a positive USITC decision.

the U.S. gross national product grew by 2.72 percent annually while unemployment rates averaged 6.75 percent. On the other hand, Japan experienced, on the average, 5.20 trade conflicts with positive USITC decisions out of 7.75 annual U.S.-Japan trade conflicts. Korea had 2.40 trade conflicts with positive USITC rulings among 3.30 annual trade conflict cases, and Taiwan had 2.10 incidents of bilateral trade conflicts with the decisions out of 3.05 annual cases. Japan (67.10 percent), Korea (72.73 percent), and Taiwan (68.85 percent) all obtained high rates of affirmative USITC decisions which indicate more than 60 percent of all cases. On the average, the Northeast Asian economies annually experienced 9.75 incidents of trade conflicts with positive USITC decisions out of 14.10 conflict cases.

Poisson Analysis Result

To examine the predictive power of the individual models of trade conflict, I use Poisson regression analysis. The results of Poisson estimation are presented and discussed through statistical techniques such as the sign and magnitude of parameter estimates, the significance of the parameters, and log-likelihood ratio. In the Poisson method of analysis, it is assumed that the dependent variable events are independent of one another. The present study uses the standard Poisson model for U.S.-Korea and U.S.-Taiwan trade

disputes with zero cases in the data set and a truncated-at-zero Poisson model for U.S.-Japan and U.S.-NEACs trade disputes with positive cases only.

1. Hegemonic Stability (HS) and Surplus Capacity (SC) Poisson Results

Hegemonic Stability Model:

Table 2 shows that hegemonic stability variables, such as the economic dominance of the U.S. over the NEACs and East-West tension (cooperation-conflict scale) in Northeast Asia, are negatively associated with trade conflict with the U.S. for all Northeast Asian economies, while the military dominance of the U.S. over the NEACs is positively related to the trade conflict. As the U.S. economic dominance over the NEACs decreases, the U.S.-NEACs' trade conflict increases, as expected. However, unlike the prediction, superpower confrontation in Northeast Asia worsens the U.S.-NEACs' trade relations, and the relative increase of NEAC's military spending reduces the trade conflict between the U.S. and the NEACs. These empirical findings are inconsistent with the basic hypotheses of the hegemonic stability theory. The variables, the U.S. economic dominance over the NEACs and the East-West tension in Northeast Asia, have statistically significant effects on the trade disputes between the U.S. and the NEACs, with the exception of U.S.-Japan trade conflict.

The U.S. military dominance over the NEACs is not statistically significantly related to trade conflict with the

Table 2: Hegemonic Stability & Surplus Capacity Poisson Results

Model	Dep. Var.	Indep. Var.	Esti.	Std. Error	T	LLR
HSNE	USTRCNE	USGNPNE (-)	-.97	.23	-4.19*	24.95
		USMSPNE (+)	.05	.03	1.70	(N = 20)
		EWTENCS (-)	-.00	.00	-3.67*	
SCNE		USUNEMR (+)	.21	.05	4.45*	26.13
		USGNPGR (+)	.01	.03	.29	
		NEIMPEN (+)	.11	.01	9.77*	
HSJA	USTRCJA	USGNPJA (-)	-.55	.27	-2.05	8.41
		USMSPJA (+)	.02	.02	.89	
		EWTENCS (-)	-.00	.00	-.25	
SCJA		USUNEMR (+)	.03	.06	.44	8.62
		USGNPGR (+)	.02	.04	.63	
		JAIMPEN (+)	.11	.03	4.27*	
HSKO	USTRCKO	USGNPKO (-)	-.09	.03	-3.59*	2.52
		USMSPKO (+)	.02	.02	1.02	
		EWTENCS (-)	-.00	.00	-5.00*	
SCKO		USUNEMR (+)	.59	.10	6.08*	2.22
		USGNPGR (+)	.04	.05	.80	
		KOIMPEN (+)	.89	.17	5.33*	
HSTA	USTRCTA	USGNPTA (-)	-.06	.02	-3.66*	1.97
		USMSPTA (+)	.02	.03	.90	
		EWTENCS (-)	-.00	.00	-3.50*	
SCTA		USUNEMR (+)	.25	.10	2.47*	1.94
		USGNPGR (-)	-.06	.07	-.91	
		TAIMPEN (+)	.84	.13	6.46*	

Note: * = Statistical Significance: p≤.05.
(+/-) = sign of relationship.
HSKO, SCKO, HSTA, & SCTA (standard Poisson models)
HSNE, SCNE, HSJA, & SCJA (truncated-at-zero Poisson models).

U.S. for all Northeast Asian economies. In short, as the U.S. economic dominance over the NEACs decreases and superpower confrontation in Northeast Asia increases, the U.S.-NEACs' trade conflict increases. The U.S.-Japan trade conflict for the period between 1970 and 1989 is not adequately explained by the hegemonic stability variables. According to the statistical significance tests and log-likelihood ratios, the hegemonic stability model is best applied to the U.S.-NEACs (regional) trade disputes, followed by the U.S.-Korea and the U.S.-Taiwan trade conflicts.

The hegemonic stability results indicate that the U.S.-Korea and the U.S.-Taiwan trade disputes are different from the U.S.-Japan trade conflict. For the period between 1970 and 1989, the trade relations between the U.S. and Korea/Taiwan were more asymmetric (or bilaterally hegemonic) than the trade relations between the U.S. and Japan in terms of national (economic/political) power. Under the U.S. nuclear umbrella, the export-oriented newly industrializing countries (NICS)—Korea and Taiwan—have achieved a rapid economic growth, depending highly upon trade with the U.S. as the top importer. Thus, the U.S.-Korea/Taiwan trade disputes have been affected by the relative economic/military dependence of Korea and Taiwan on the U.S. On the other hand, during the period, Japan became one of the greatest economic powers in world trade, and its economy was competitive with the U.S. economy. There was no hegemonic rule in U.S.-Japan

trade relations in the economic perspective, although security concerns were steadily emerging. Therefore, the hegemonic stability theory is more likely to be applied to the trade disputes between the U.S. and Korea/Taiwan than to the trade conflict between the U.S. and Japan for the years between 1970 and 1989. On the whole, the U.S.-NEACs trade relations periodically interacted with both economic and security issues for the Cold War era.

Surplus Capacity Model:

The Poisson results indicate that surplus capacity variables, such as U.S. unemployment rate and NEACs' import penetration, are positively associated with trade disputes with the U.S. for all Northeast Asian economies. Clearly, as the U.S. unemployment rate and the NEACs' import penetration increased, the U.S.-NEACs' trade disputes increased, as expected. This result is consistent with the basic argument of surplus capacity theory. However, U.S. GNP growth rate was positively related to the trade disputes between the U.S. and the NEACs, with the exception of Taiwan. The increased U.S. GNP growth rate, which denoted improved U.S. macroeconomic conditions, brought about the increased trade disputes between the U.S. and the NEACs. The U.S. unemployment rate and the NEACs import penetration had statistically significant relationships with the U.S.-NEACs' trade conflict, while the U.S. GNP growth rate did not have any effect on the trade conflict with statistical significance. Statistical

significance tests for the variables show that the NEACs' import penetration was the most important determinant in explaining the U.S.-NEACs' trade conflict, followed by the U.S. unemployment rate (the most important factor in U.S.-Korea trade conflict). The U.S.-NEACs' trade disputes highly interacted with the amount of imports into the U.S. from the NEACs, depending upon the U.S. macroeconomic conditions. Like the hegemonic stability model, the surplus capacity model is best applied to the U.S.-NEACs' trade conflict (regional), followed by the U.S.-Korea, the U.S.-Taiwan, and the U.S.-Japan trade disputes.

According to the surplus capacity results, the trade disputes between the U.S. and the NEACs were similar in that they were mainly affected by the amount of their exports to the U.S. However, the U.S.-Japan trade disputes were still different from the U.S.-Korea/Taiwan trade disputes because the U.S. trade conflict with Japan did not have any statistically significant relationship with the U.S. domestic economic conditions—U.S. unemployment and GNP growth rates. The U.S. trade disputes with Korea and Taiwan were conditioned by the U.S. unemployment rate and Korean/Taiwanese import penetration. Specifically, as Korean/Taiwanese import penetration increased along with the worsening U.S. economic conditions, the U.S.-Korea/Taiwan trade conflict tended to increase. Thus, the Korean/Taiwanese economies were more likely to be affected by the U.S. macroeconomic conditions

than the Japanese economy in terms of competition power and diversity in world trade.

In summation, the trade disputes between the U.S. and the NEACs/Korea/Taiwan can be explained by hegemonic stability models including the variables such as U.S. economic dominance over the NEACs and East-West tension in Northeast Asia. However, only one variable, the U.S. economic dominance over the NEACs, is consistent with the basic argument of hegemonic stability theory. That is, the empirical testing of the U.S.-NEACs' trade disputes partially accepts the hegemonic stability hypotheses. Surplus capacity models, which include U.S. unemployment rate and NEACs' import penetration, can be well applied to trade conflict with the U.S. for all Northeast Asian economies, with the exception of Japan. The empirical results are basically consistent with the surplus capacity hypotheses. The U.S.-Japan trade conflict cannot be well explained by either hegemonic stability or surplus capacity models. The single most important variable in explaining the U.S.-NEACs' trade disputes is NEACs' import penetration. To make the interpretation more concrete, the regression coefficients for NEACs' import penetration (.11/.11/.89/.84) and the means of U.S. trade disputes with the NEACs (14.10/7.75/3.30/3.05) need to be noted. To consider the effect of each import penetration variable on the trade disputes variable, the equation, $lambda_i b_i$, is used. Thus, for a one percent increase in NEACs' (Japan/Korea/Taiwan) import

penetration, 1.55 (.85/2.94/2.56) more U.S. trade disputes with the NEACs (Japan/Korea/Taiwan) occur. The U.S.-Korea trade conflict was the most sensitive to its import penetration into the U.S., followed by the U.S.-Taiwan and the U.S.-Japan trade disputes. The NEACs' import penetration increased the trade disputes between the U.S. and the NEACs at different rates. In conclusion, surplus capacity theory is better than the hegemonic stability theory in understanding the trade disputes between the U.S. and the NEACs in that the empirical findings of the surplus capacity model are essentially consistent with the basic hypotheses of the surplus capacity theory, while those of the hegemonic stability model are partially compatible with the basic argument of the hegemonic stability theory. Nevertheless, the hegemonic stability theory can be adequately applied to the bilaterally asymmetric trade relations between the U.S. and Korea/Taiwan, along with the surplus capacity theory.

2. Interaction (IN) Poisson Results

Table 3 provides the results of the interaction Poisson regression analysis. In this analysis, an attempt to examine whether there are interaction effects between hegemonic stability and surplus capacity variables is made. The Poisson results show that there are only two interaction variables with statistical significance. One is HSC21 (USMSPNE by

USUNEMR+NEIMPEN) in the interaction model of U.S.-NEACs (regional) trade disputes. It means that as U.S. military dominance over the NEACs decreased, the U.S. unemployment rate and NEACs' import penetration together tended to increase, thereby yielding the trade disputes between the U.S. and the NEACs. The other is HSC1 (USGNPKO+EWTENCS by USUNEMR+USGNPGR+KOIMPEN) in the U.S.-Korea trade conflict. This implies that hegemonic stability variables such as the U.S. economic dominance over Korea and East-West tension in Northeast Asia statistically significantly interacted with surplus capacity variables such as the U.S. unemployment rate, U.S. GNP growth rate, and Korean import penetration. The relationship between them indicates that as U.S. economic dominance over Korea and superpower cooperation in Northeast Asia decreased, U.S. surplus capacity problems tended to worsen, thereby producing the U.S.-Korea trade conflict. The two determinants of U.S.-Korea trade disputes—hegemonic stability except the U.S. military dominance over Korea and surplus capacity—were mutually stimulating each other. However, on the whole, the Poisson results show that the interaction perspective is mostly inappropriate for explaining the U.S.-NEACs' trade disputes except the U.S.-Korea trade disputes. Specifically, hegemonic stability and surplus capacity models together are useful in explaining the U.S.-NEACs' trade disputes. When both conditions were present, the trade disputes were more likely to be explained and predicted.

Table 3: Interaction Poisson Results

Model	Dep. Var.	Indep. Var.	Esti.	Std. Error	T	LLR
INNE	USTRCNE	HSNE1 (-)	-.27	.29	-.96	26.16
		HSNE2 (-)	-.95	.34	-2.76*	(N = 20)
		SCNE1 (+)	.09	.22	.40	
		SCNE2 (+)	.32	.09	3.42*	
		HSC11 (+)	.39	.31	1.29	
		HSC12 (+)	.01	.12	.06	
		HSC21 (-)	-1.59	.45	-3.51*	
		HSC22 (+)	.34	.18	1.92	
INJA	USTRCJA	HSJA1 (+)	.15	.27	.54	8.49
		HSJA2 (-)	-.20	.23	-.86	
		SCJA (+)	.54	.20	2.71*	
		HSC1 (+)	.31	.44	.71	
		HSC2 (-)	-.26	.32	-.82	
INKO	USTRCKO	HSKO1 (-)	-2.81	.83	-3.39*	2.54
		HSKO2 (-)	-3.97	4.71	-.84	
		SCKO (+)	5.86	5.47	1.07	
		HSC1 (+)	2.88	1.14	2.53*	
		HSC2 (+)	5.72	8.76	.65	
INTA	USTRCTA	HSTA1 (-)	-1.81	.98	-1.85	2.02
		HSTA2 (-)	-1.94	.86	-2.25*	
		SCTA1 (+)	.00	.70	.01	
		SCTA2 (+)	.40	.77	.53	
		HSC11 (+)	1.52	.80	1.91	
		HSC12 (+)	1.10	.93	1.18	
		HSC21 (-)	-2.57	1.47	-1.76	
		HSC22 (-)	-.85	.86	-.99	

Note: * = Statistical Significance: p≤.05.
INKO & INTA (standard Poisson models)
INNE & INJA (truncated-at-zero Poisson models).
Each variable of this model uses the transformation into standard form and the adjustment into interaction term. [weighted value = (actual value - mean)/standard deviation]. HSNE1 = (USGNPNE+EWTENCS)/2; HSNE2 = USMSPNE; SCNE1 = (USUNEMR+NEIMPEN)/2; SCNE2 = USGNPGR; HSC11 = HSNE1 by SCNE1; HSC12 = HSNE1 by SCNE2; HSC21 = HSNE2 by SCNE1; HSC22 = HSNE2 by SCNE2; HSJA1 = (USGNPJA+EWTENCS)/2; HSJA2 = USMSPJA; SCJA = (USUNEMR+USGNPGR+JAIMPEN)/3; HSC1 = HSJA1 by SCJA; HSC2 = HSJA2 by SCJA; HSKO1 = (USGNPKO+EWTENCS)/2; HSKO2 = USMSPKO; SCKO = (USUNEMR+USGNPGR+KOIMPEN)/3; HSC1 = HSKO1 by SCKO; HSC2 = HSKO2 by SCKO; HSTA1 = (USGNPTA+EWTENCS)/2; HSTA2 = USMSPTA; SCTA1 = (USUNEMR+TAIMPEN)/2; SCTA2 = USGNPGR; HSC11 = HSTA1 by SCTA1; HSC12 = HSTA1 by SCTA2; HSC21 = HSTA2 by SCTA1; and HSC22 = HSTA2 by SCTA2.

However, their interaction effects (H.S. → T.C. & S.C. → T.C. => H.S. x S.C. -x→ T.C.), unlike their combined effects (H.S. → T.C. & S.C. → T.C. => H.S. + S.C. -o→ T.C.), are not as powerful in understanding the U.S.-NEACs' trade relations except the U.S.-Korea trade relations. They have separate effects on the U.S.-NEACs' trade disputes.

3. U.S. Trade Protection Decision-Making Process (DM) Poisson Results

Table 4: U.S. Trade Protection Decision-Making Process Poisson Results

Model	Dep. Var.	Indep. Var.	Esti.	Std. Error	T	LLR
DMNE	USTRCNE	USTBNE (-)	-.02	.00	-9.58*	25.43
		USPRELC (+)	.23	.13	1.72	(N = 20)
DMJA	USTRCJA	USTBJA (-)	-.02	.00	-4.68*	8.84
		USPRELC (+)	.50	.17	2.95*	
DMKO	USTRCKO	USTBKO (-)	-.12	.03	-3.65*	.96
		USPRELC (-)	-.29	.30	-.97	
DMTA	USTRCTA	USTBTA (-)	-.15	.02	-6.73*	1.59
		USPRELC (+)	.01	.32	.04	

Note: * = Statistical Significance: p≤.05.
DMKO & DMTA (standard Poisson models)
DMNE & DMJA (truncated-at-zero Poisson models).

Table 4 shows that the U.S. trade protection decision-making process variable, such as the U.S. trade balance with

respect to the NEACs, is negatively associated with trade conflict with the U.S. for all Northeast Asian economies, while the U.S. presidential election cycle is positively related to the trade conflict, with an exception of Korea. As the U.S. trade deficit, with respect to the NEACs, increased, the U.S.-NEACs trade conflict increased, and vice versa. Specifically, when the U.S. trade deficit in U.S.-NEACs' trade relations increased, the U.S. industries tended to file petitions against the NEACs with a high expectation of obtaining a positive USITC ruling. On the other hand, trade conflict between the U.S. and the NEACs/Japan/Taiwan tended to increase during the U.S. presidential election year, while the trade conflict between the U.S. and Korea tended to decrease during the year, which is different from the prediction.

The U.S. trade balance with respect to the NEACs had great effects on the U.S.-NEACs' trade relations, with statistical significance. It is noteworthy that only the U.S.-Japan trade conflict is statistically significantly related to the U.S. presidential election cycle. The U.S.-Japan trade disputes fluctuated with the U.S. presidential election years. This shows that the U.S.-Japan trade relations were more political than the U.S.-Korea and the U.S.-Taiwan trade relations. This result is also supported by the fact that the U.S.-Japan trade relations cannot be explained well by the hegemonic stability and surplus capacity variables. In short, the trade disputes between the U.S. and

Japan highly depended upon the U.S. trade deficit with respect to Japan and the U.S. presidential election cycle. The injured U.S. industries were most likely to apply for protection against Japan when the U.S. trade deficit with respect to Japan increased and the U.S. presidential election was upcoming.

The Decision-Making model can best be applied to the U.S.-Japan trade conflict, followed by the U.S.-NEACs (regional), the U.S.-Taiwan, and the U.S.-Korea trade relations, on the basis of the statistical significance tests and log-likelihood ratios. The trade relations between the U.S. and Japan were not hegemonic and asymmetric for the period of 1970-1989 in terms of economic power. Although security issues periodically emerged, nevertheless they tended to weaken the U.S.-Japan trade disputes since the U.S. and Japan, which were strategically interdependent for the Cold War period, needed to cooperate with each other. Furthermore, the trade disputes between the U.S. and Japan were not significantly affected by the U.S. domestic economic conditions. In short, the U.S.-Japan trade conflict for the years of 1970-1989 was not based on the hegemonic stability and surplus capacity ideas. The conflict was determined by the U.S. trade deficit depending upon Japanese import penetration and the U.S. presidential election cycle as the decision-making factors. More concretely, the regression coefficients for U.S. trade balance (-.02/-.02/-.12/-.15) and

the means of U.S. trade disputes with the NEACs (14.10/7.75/3.30/3.05) need to be noted. To consider the effect of each U.S. trade balance variable on the trade disputes variable, the equation, $lambda_i b_i$, is used. Thus, for a one billion dollar increase in U.S. trade deficit in the U.S.-NEACs (Japan/Korea/Taiwan) trade relations, .28 (.16/.40/.46) more U.S. trade disputes with the NEACs (Japan/Korea/Taiwan) occurred. The U.S.-Taiwan trade conflict highly interacted with the U.S. trade deficit (with respect to Taiwan), followed by the U.S.-Korea and the U.S.-Japan trade disputes.

4. A Comparative Evaluation of Models for Their Predictive Performance

Based on the results from the previous tables and from Table 5 in this chapter, the following conclusions concerning the U.S.-NEACs' trade relations are noted:

First, the comparison of the trade conflict models indicates that the surplus capacity model has the highest explanatory power in predicting the U.S.-NEACs' trade conflict. Surplus capacity variables (NEACs' import penetration and the U.S. unemployment rate) have great effects on U.S.-NEACs trade disputes. Specifically, the increased NEACs import penetration during the bad economic conditions of the U.S. (represented by a high U.S. unemployment rate) tended

to increase the trade conflict between the U.S. and the NEACs. This economic view provides an adequate explanation in understanding the U.S.-NEACs' trade relations for the period between 1970 and 1989. This model is the best in explaining the trade disputes between the U.S. and the NEACs/Korea/Taiwan.

Table 5: A Comparative Evaluation of Models for Their Predictive Performance

U.S. Trade Conflict	Ranking of Models	Key Variables
NEACs	SC > DM > HS	NEIMPEN* USTBNE* USUNEMR* USGNPNE* EWTENCS*
JAPAN	DM > SC > HS	USTBJA* JAIMPEN* USPRELC*
KOREA	SC > HS > DM	USUNEMR* KOIMPEN* EWTENCS* USTBKO* USGNPKO*
TAIWAN	SC > DM > HS	USTBTA* TAIMPEN* USGNPTA* EWTENCS* USUNEMR*

Note: * = Statistical Significance: $p \leq .05$.
The models (HS=Hegemonic Stability Model, SC=Surplus Capacity Model, and DM=U.S. Trade Protection Decision-Making Process Model) are rank ordered based on their overall statistical results (correct signs of relationship, t-test, & LLR); and the listed variables (rank ordered) are those with the highest predictive ratios for the given type of analysis.

Second, the decision-making model, including the U.S. trade balance and the presidential election cycle, has the second highest predictive power in explaining the U.S.-NEACs' trade conflict. The decision-making model can be well applied to the U.S.-NEACs and the U.S.-Japan trade disputes. Specially, the U.S.-Japan trade conflict is best explained by the model, including the U.S. trade deficit with respect to Japan and the U.S. presidential election cycle. More concretely, when the U.S. trade deficit problem in U.S.-Japan trade relations appeared as an important economic issue during the U.S. presidential election year, the U.S. industries tended to apply for protection with a high expectation of obtaining a positive USITC decision. The variable, U.S. trade balance in U.S.-NEACs' trade relations, is the most important determinant in understanding the trade relations between the U.S. and the NEACs, along with NEACs' import penetration.

Third, the hegemonic stability model seems to be well applied to the trade disputes between the U.S. and the NEACs/Korea/Taiwan. However, the expected signs of the relationships are not consistent with the basic argument of hegemonic stability that the trade conflict is least likely to occur under a hegemonic system (or trade relations). That is, the increased U.S. military dominance over the NEACs increased the trade disputes between the U.S. and the NEACs, which is different from the expectation. And, during the period of East-West tension in Northeast Asia, which required

political/economic cooperation between the U.S. and the NEACs, the U.S.-NEACs trade disputes tended to increase, which is not as expected. These two findings reject the basic idea of the hegemonic stability theory, and, therefore, the theory is least predictable in explaining the U.S.-NEACs trade disputes, even if a determinant like the economic dominance of the U.S. over the NEACs supports the theory.

Finally, the interaction model fails to adequately demonstrate that there are interaction effects between hegemonic stability and surplus capacity variables. The variables have combined effects on the U.S.-NEACs' trade relations. That is, when both variables are considered together, the U.S.-NEACs' trade disputes are most likely to be explained. However, they are not mutually stimulating.

In summation, for the aggregated regional level of analysis, on the whole, the surplus capacity model has the greatest explanatory power, followed by the decision-making model and the hegemonic stability model. NEACs' import penetration and U.S. trade balance in U.S.-NEACs' trade relations were the most important factors in understanding the trade disputes between the U.S. and the NEACs. At the national level of analysis, the trade relations between the U.S and the NEACs were slightly different from one another.

U.S.-Japan trade relations, which are not adequately explained by the hegemonic stability and surplus capacity ideas, were more political than the U.S.-Korea and U.S.-Taiwan

trade disputes. The U.S.-Japan trade disputes were dependent on the combination of three factors—U.S. trade deficit with respect to Japan, Japanese penetration into U.S. markets, and the U.S. presidential election cycle.

U.S.-Korea trade relations were highly affected by the U.S. domestic economic factor (U.S. unemployment rate) and the U.S. hegemonic stability factors (U.S. economic dominance over Korea & East-West tension in Northeast Asia), along with Korean import penetration and U.S. trade deficit with respect to Korea. U.S.-Taiwan trade relations were conditioned by the U.S. domestic economic factor (U.S. unemployment rate) and the U.S. hegemonic stability factors (U.S. economic dominance over Taiwan & East-West tension in Northeast Asia), along with the Taiwanese import penetration and the U.S. trade deficit with respect to Taiwan as key components. The U.S.-Korea trade relations were similar to the U.S.-Taiwan trade relations. However, the U.S.-Taiwan trade disputes were relatively dependent on two important economic factors—the U.S. trade deficit in U.S.-Taiwan trade relations and the Taiwanese import penetration, while U.S.-Korea trade disputes were relatively affected by hegemonic stability factors (U.S. economic dominance over Korea & East-West tension in Northeast Asia).

5. Internal (IT)-External (ET) Poisson Results

Table 6 shows the determinants behind the U.S. protective trade decision (a positive USITC ruling) against the NEACs. There are two important determinants which can be categorized in terms of where the U.S. trade protection decision came from, behind the U.S. trade protection against the NEACs—external and internal factors. First, external factors, stimulated by U.S. trade relations with the NEACs, are NEACs' import penetration, U.S. trade deficit with respect to the NEACs, the dominance of the U.S. over the NEACs in U.S.-NEACs relations, and East-West tension in Northeast Asia. Second, internal factors, stimulated by the U.S. own conditions, are U.S. macroeconomic conditions and the presidential election cycle. The results of the two models show whether U.S. trade protection decisions against the NEACS were based on the U.S. trade relations with the NEACs or the U.S. own conditions.

First, the Poisson results show that the U.S. trade protection decisions against the NEACs are based on the determinants—U.S. unemployment rate, NEACs' import penetration, East-West tension in Northeast Asia, and the U.S. GNP growth rate. The internal model is more adequate than the external model in explaining the USITC decisions against the NEACs. Second, the USITC decisions against Japanese imports are not explained by the factors used in explaining the U.S.-Japan trade disputes. The decisions cannot be described by the determinants from the three basic theories. Third, the

Table 6: Internal-External Poisson Results

Model	Dep. Var.	Indep. Var.	Esti.	Std. Error	T	LLR
ETNE	USTCPNE	USGNPNE (-)	-.31	.35	-.91	15.75
		USMSPNE (+)	.01	.05	.14	(N = 20)
		EWTENCS (-)	-.00	.00	-3.00*	
		NEIMPEN (+)	.27	.08	3.31*	
		USTBNE (+)	.03	.02	1.75	
ITNE	USTCPNE	USUNEMR (+)	.21	.05	4.01*	12.95
		USGNPGR (+)	.10	.03	2.84*	
		USPRELC (-)	-.03	.17	-.16	
ETJA	USTCPJA	USGNPJA (-)	-.39	.44	-.88	4.39
		USMSPJA (+)	.01	.04	.21	
		EWTENCS (-)	-.00	.00	-.33	
		JAIMPEN (+)	.18	.19	.99	
		USTBJA (+)	.01	.03	.14	
ITJA	USTCPJA	USUNEMR (+)	.01	.08	.06	3.51
		USGNPGR (+)	.07	.05	1.43	
		USPRELC (+)	.25	.23	1.09	
ETKO	USTCPKO	USGNPKO (-)	-.06	.05	-1.21	1.15
		USMSPKO (+)	.01	.02	.34	
		EWTENCS (-)	-.00	.00	-4.33*	
		KOIMPEN (+)	.05	.75	.07	
		USTBKO (-)	-.10	.17	-.58	
ITKO	USTCPKO	USUNEMR (+)	.52	.10	5.03*	.35
		USGNPGR (+)	.15	.07	2.29*	
		USPRELC (-)	-.27	.38	-.70	
ETTA	USTCPTA	USGNPTA (+)	.02	.06	.30	.95
		USMSPTA (-)	-.11	.10	-1.11	
		EWTENCS (-)	-.00	.00	-2.10*	
		TAIMPEN (+)	.27	.75	.36	
		USTBTA (-)	-.13	.13	-1.03	
ITTA	USTCPTA	USUNEMR (+)	.32	.11	2.92*	-.31
		USGNPGR (+)	.11	.07	1.59	
		USPRELC (-)	-.38	.41	-.92	

Note: * = Statistical Significance: p≤.05.
ETKO, ITKO, ETTA, & ITTA (standard Poisson models)
ETNE, ITNE, ETJA, & ITJA (truncated-at-zero Poisson models).

USITC positive rulings against Korea were associated with U.S.

domestic economic factors, such as U.S. unemployment/GNP growth rates and East-West tension in Northeast Asia. The positive decisions are highly dependent on the economic conditions in the U.S. The internal model well explains the U.S. protective decisions against Korean imports. Fourth, the USITC affirmative decisions against Taiwanese imports were affected by the U.S. unemployment rate and East-West tension in Northeast Asia. Like Korea, the economic situation in the U.S. controlled its protection against Taiwan.

Overall, most of the variables in internal and external models are not statistically significantly related to the USITC decisions, even if the U.S. unemployment rate had the greatest effect on the positive USITC decisions. The variables are not the determinants affecting the USITC decisions, even if they are the factors affecting the U.S.-NEACs' trade disputes. The positive or negative USITC decisions were more political and not easily determined by macroscopic perspectives. The decisions were mainly based on how much the U.S. industries concerned were damaged by the NEACs' unfair trade. To understand the USITC decisions, an examination of the USITC decision-making process in terms of microscopic perspectives must be undertaken, taking into account the influence of the injured U.S. industries, the voting behavior of USITC members, and the interactions among the U.S. Congress, the USITC, and the president.

Negative Binomial Analysis Result

Poisson regression analysis depends on the assumption that the event counts, which are independent of one another, are the dependent variable with a Poisson distribution. In the present study, an assumption is made that trade disputes were occurring independently of one another, and thereby the Poisson method of analysis is appropriate. However, the trade disputes between the U.S. and the NEACs may have been mutually interdependent of one another, generating U.S.-NEACs (the whole NEACs) trade disputes as contagious outcomes, since the NEACs were export-oriented countries engaging in similar industries. And, U.S.-NEAC (each NEAC) trade disputes in an industry may have been associated with those in other industries. In these cases, the assumption of independence, which results in the specification of variance equal to mean ($lambda_i$), may be incorrect. The Poisson distribution can be modified to allow for positive contagion through the negative binomial distribution. Allowing for positive contagion may improve the basic Poisson model's performance. Moving from the Poisson regression results to the negative binomial regression results of three basic trade conflict models, if no zero disputes exist in the data set, truncated-at-zero negative binomial models are used. On the other hand, if zero disputes exist in the data, standard negative binomial models are used.

1. Hegemonic Stability (HS) and Surplus Capacity (SC) Negative Binomial Results

Table 7 shows that, as with the Poisson results, hegemonic stability variables, such as the economic dominance of the U.S. over the NEACs and East-West tension in Northeast Asia, are negatively and statistically significantly associated with trade conflict with the U.S. for all Northeast Asian economies, while the military dominance of the U.S. over the NEACs is positively related to the trade conflict without statistical significance. Importantly, unlike the Poisson results, the U.S.-Japan trade conflict for the period between 1970 and 1989 is adequately explained by a hegemonic stability variable such as the U.S. economic dominance over Japan. The t-values for hegemonic stability variables go down in the negative binomial results, compared with those in the Poisson results. On the other hand, the log-likelihood ratios (25.68/8.54/2.55/2.00) in the NB results are slightly greater than those (24.95/8.41/2.52/1.97) in the Poisson results, indicating that the NB models are more likely to have generated those particular data sets than the Poisson models. Thus, the results indicate that allowing for contagion slightly improves the models' performance. On the other hand, the variance is [1 + exp(gamma)] = 4.03 (2.00/1.53/1.50) times greater than its mean, indicating a large (slight) amount of positive contagion in the U.S.-NEACs (Japan/Korea/Taiwan) trade disputes. The trade disputes between the U.S. and each

Table 7: Hegemonic Stability & Surplus Capacity Negative Binomial Results

Model	Dep. Var.	Indep. Var.	Esti.	Std. Error	T	LLR
HSNE	USTRCNE	USGNPNE (-)	-1.03	.45	-2.30*	25.68
		USMSPNE (+)	.05	.05	1.02	(N = 20)
		EWTENCS (-)	-.00	.00	-2.40*	
		gamma	1.11	1 + exp(gamma)		4.03
SCNE		USUNEMR (+)	.21	.06	3.70*	26.16
		USGNPGR (+)	.01	.04	.23	
		NEIMPEN (+)	.11	.01	8.29*	
		gamma	-.93	1 + exp(gamma)		1.40
HSJA	USTRCJA	USGNPJA (-)	-.52	.11	-4.79*	8.54
		USMSPJA (+)	.02	.02	1.16	
		EWTENCS (-)	-.00	.00	-.20	
		gamma	.00	1 + exp(gamma)		2.00
SCJA		USUNEMR (+)	.04	.09	.41	8.68
		USGNPGR (+)	.03	.05	.59	
		JAIMPEN (+)	.11	.04	3.15*	
		gamma	-.56	1 + exp(gamma)		1.57
HSKO	USTRCKO	USGNPKO (-)	-.08	.03	-2.80*	2.55
		USMSPKO (+)	.01	.02	.59	
		EWTENCS (-)	-.00	.00	-4.00*	
		gamma	-.64	1 + exp(gamma)		1.53
SCKO		USUNEMR (+)	.58	.13	4.53*	2.35
		USGNPGR (+)	.05	.08	.62	
		KOIMPEN (+)	.83	.21	3.91*	
		gamma	.16	1 + exp(gamma)		2.17
HSTA	USTRCTA	USGNPTA (-)	-.06	.02	-3.05*	2.00
		USMSPTA (+)	.02	.03	.78	
		EWTENCS (-)	-.00	.00	-2.86*	
		gamma	-.70	1 + exp(gamma)		1.50
SCTA		USUNEMR (+)	.26	.13	2.00	1.98
		USGNPGR (-)	-.06	.08	-.76	
		TAIMPEN (+)	.81	.15	5.32*	
		gamma	-.35	1 + exp(gamma)		1.71

Note: * = Statistical Significance: p≤.05.
HSKO, SCKO, HSTA, & SCTA (standard NB models)
HSNE, SCNE, HSJA, & SCJA (truncated-at-zero NB models).

NEAC (Japan/Korea/Taiwan) are slightly contagious (or moderately independent) of one another, while the U.S.-NEACs (regional) trade disputes are highly positively contagious. The U.S.-NEACs (regional) trade disputes consisted of the trade disputes between the U.S. and Japan/Korea/Taiwan, which engaged in similar industries and were exported-oriented toward the U.S. Thus, the events of the regional trade disputes were not independent of one another, rejecting the basic assumption of Poisson model and supporting the application of Negative Binomial model.

On the other hand, like the Poisson results, surplus capacity models show that as the U.S. unemployment rate and NEACs' import penetration increased, the U.S.-NEACs trade disputes increased. The U.S. unemployment rate and NEACs' import penetration have statistically significant relationships with the U.S.-NEACs trade conflict, while the U.S. GNP growth rate did not have any effect on the trade conflict with statistical significance. It is noteworthy that the U.S. unemployment rate loses its statistical significance in explaining U.S.-Taiwan trade disputes in the NB results. Statistical significance tests for the variables indicate that the NEACs import penetration is the most important in explaining the U.S.-NEACs' trade conflict, followed by the U.S. unemployment rate. Like the hegemonic stability models, surplus capacity models show that the t-values in the NB results slightly decrease and the log-likelihood ratios in the

results slightly increase, compared with those in the Poisson results. The NB models are more likely to represent the data sets than the Poisson models. Thus, the results imply that allowing for contagion slightly improves the models' performance. The variance is [1 + exp(gamma)] = 1.40 (1.57/2.17/1.71) times greater than its mean, indicating a slight amount of contagion in trade disputes with the U.S. for all Northeast Asian economies. The U.S.-NEACs' trade disputes in surplus capacity model are not significantly contagious of one another. That is the reason why the Poisson results are very similar to the NB results.

In summation, there are not big differences between the Poisson and the negative binomial results. The log-likelihood ratios of both hegemonic stability and surplus capacity models in the NB results are slightly greater than those in the Poisson results indicating that allowing for contagion slightly improves the models' performance. The levels of dispersion indicate that there is only a slight amount of positive contagion in U.S.-NEACs' trade disputes, with the exception of the hegemonic stability model of U.S.-NEACs' (the whole) trade conflict. They moderately support the basic assumption of Poisson models—independence.

2. U.S. Trade Protection Decision-Making Process (DM) Negative Binomial Results

Table 8 shows that the U.S. trade protection decision-making process variable, such as the U.S. trade balance with respect to the NEACs, is negatively and statistically significantly associated with trade conflict with the U.S. for all Northeast Asian economies, while the U.S. presidential election cycle is positively related to the trade conflict, with the exception of Korea. As the U.S. trade deficit with respect to the NEACs increased, the U.S.-NEACs trade conflict increased, and vice versa. Specifically, when the U.S. trade deficit in U.S.-NEACs' trade relations increased, the U.S. industries tended to file the petitions against the NEACs with

Table 8: U.S. Trade Protection Decision-Making Process

Negative Binomial Results

Model	Dep. Var.	Indep. Var.	Esti.	Std. Error	T	LLR
DMNE	USTRCNE	USTBNE (-)	-.02	.00	-5.84*	25.83
		USPRELC (+)	.28	.22	1.28	(N = 20)
		gamma	.61	1 + exp(gamma)		2.85
DMJA	USTRCJA	USTBJA (-)	-.02	.00	-4.59*	8.84
		USPRELC (+)	.50	.18	2.85*	
		gamma	-2.68	1 + exp(gamma)		1.07
DMKO	USTRCKO	USTBKO (-)	-.13	.06	-2.15*	1.92
		USPRELC (-)	-.05	.55	.09	
		gamma	1.51	1 + exp(gamma)		5.54
DMTA	USTRCTA	USTBTA (-)	-.15	.03	-4.64*	1.79
		USPRELC (+)	.15	.49	.30	
		gamma	.61	1 + exp(gamma)		2.85

Note: * = Statistical Significance: p≤.05.
DMKO & DMTA (standard NB models)
DMNE & DMJA (truncated-at-zero NB models).

a high expectation of obtaining a positive USITC ruling. On the other hand, the trade conflict between the U.S. and the NEACs/Japan/Taiwan tended to increase during the U.S. presidential election year. Like the Poisson results, only U.S.-Japan trade conflict is statistically significantly related to the U.S. presidential election cycle. The t-values for decision-making variables decrease in the NB results, compared with those in the Poisson results. On the contrary, the log-likelihood ratios (25.83/8.84/1.92/1.79) in the NB results are slightly greater than those (25.43/8.84/.96/1.59) in the Poisson results, indicating that the NB models are more likely to explain the U.S.-NEACs' trade disputes than the Poisson models. Thus, they imply that allowing for contagion slightly improves the models' performance. On the other hand, the variance is [1 + exp(gamma)] = 2.85 (1.07/5.54/2.85) times greater than its mean, indicating a moderate (no/large/moderate) amount of positive contagion in U.S.-NEACs (Japan/Korea/Taiwan) trade disputes. The U.S.-Korea trade disputes in the decision-making model are highly contagious, showing that the log-likelihood ratio in the NB results significantly increases (.96 → 1.92), while the U.S.-Japan trade disputes in the model are independent of one another, presenting that the log-likelihood ratio (8.84) in the NB results are the same as that (8.84) in the Poisson results. In the U.S.-NEACs (regional) and the U.S.-Taiwan trade disputes, there is a moderate degree of contagion, indicating

that the NB models are better than the Poisson models.

3. A Comparative Evaluation of Models for Their Predictive Performance

Table 9: A Comparative Evaluation of Models for Their Predictive Performance

U.S. Trade Conflict	Ranking of Models	Key Variables
NEACs	SC > DM > HS	NEIMPEN* USTBNE* USUNEMR* EWTENCS* USGNPNE*
JAPAN	DM > SC > HS	USTBJA* USGNPJA* JAIMPEN* USPRELC*
KOREA	SC > HS > DM	USUNEMR* EWTENCS* KOIMPEN* USGNPKO* USTBKO*
TAIWAN	SC > DM > HS	USTBTA* TAIMPEN* USGNPTA* EWTENCS* USUNEMR*

Note: * = Statistical Significance: p≤.05.
The models (HS=Hegemonic Stability Model, SC=Surplus Capacity Model, and DM=U.S. Trade Protection Decision-Making Process Model) are rank ordered based on their overall statistical results (correct signs of relationship, t-test, & LLR); and the listed variables are those with the highest predictive ratios for the given type of analysis.

Based on the results from the negative binomial models,

the following points can be concluded concerning the U.S.-NEACs trade relations:

There are no big differences between the Poisson and the NB model results. Still, the surplus capacity model has the highest explanatory power in predicting the U.S.-NEACs' trade conflict. Surplus capacity variables (NEACs' import penetration and the U.S. unemployment rate) have great effects on U.S.-NEACs trade disputes. The decision-making model has the second highest predictive power in explaining the U.S.-NEACs' trade conflict. The decision-making model can be well applied to the U.S.-NEACs and the U.S.-Japan trade disputes. The variable, the U.S. trade balance in U.S.-NEACs' trade relations, is the most important determinant in understanding the trade relations between the U.S. and the NEACs, along with NEACs' import penetration. The hegemonic stability model seems to be well applied to the trade disputes between the U.S. and the NEACs/Korea/Taiwan. However, the expected signs of the relationships are not consistent with the basic argument of hegemonic stability. Nevertheless, the log-likelihood ratios indicate that the negative binomial models are slightly better than the Poisson models in explaining the U.S.-NEACs' trade disputes. Thus, allowing for contagion slightly improves the models' performance.

A COMPARATIVE ANALYSIS OF U.S.-NEACs TRADE CONFLICT

The empirical findings indicate that the surplus capacity model is the best in predicting the U.S.-NEACs' trade conflict. Surplus capacity variables (NEACs' import penetration and the U.S. unemployment rate) have greater effects on U.S.-NEACs' trade disputes. The model is the most adequate in explaining the trade disputes between the U.S. and the NEACs/Korea/Taiwan. The decision-making model has the second highest predictive power in explaining the U.S.-NEACs' trade conflict. The model can be well applied to the U.S.-Japan trade disputes. Specifically, the U.S.-Japan trade conflict is best explained by the model, including the U.S. trade deficit, with respect to Japan and the U.S. presidential election cycle. The variable, U.S. trade balance in U.S.-NEACs' trade relations, is the most important in understanding the trade relations between the U.S. and the NEACs, along with NEACs' import penetration. The hegemonic stability model seems to be well applied to the trade disputes between the U.S. and the NEACs/Korea/Taiwan. However, the expected signs of the relationships are not consistent with the basic argument of hegemonic stability. The model is least predictable in explaining the U.S.-NEACs' trade disputes.

In summation, for the regional level of analysis, the surplus capacity model has the greatest explanatory power, followed by the decision-making model and the hegemonic

stability model. The NEACs' import penetration and the U.S. trade balance in U.S.-NEACs' trade relations are the most important factors in understanding the trade disputes between the U.S. and the NEACs.

At the national level of analysis, the U.S-NEACs' relationships are slightly different from one another. The U.S.-Japan trade relations, which are not adequately explained by the hegemonic stability and surplus capacity ideas, are dependent on the combination of three factors—the U.S. trade deficit with respect to Japan, Japanese penetration into U.S. market, and the U.S. presidential election cycle. Specifically, the trade disputes between the U.S. and Japan are not significantly affected by hegemonic stability determinants since there were not hegemonic nor bilaterally asymmetric trade relations between them for the period of 1970-1989. And, the U.S.-Japan trade conflict was not greatly based on the U.S. domestic economic conditions—U.S. unemployment and GNP growth rates. It is noteworthy that the U.S.-Japan trade conflict fluctuated with the U.S. presidential election years. The U.S.-Korea and the U.S.-Taiwan trade relations were highly affected by the U.S. domestic economic factor (U.S. unemployment rate) and the U.S. hegemonic stability factors (U.S. economic dominance over Korea/Taiwan & East-West tension in Northeast Asia), along with Korean/Taiwanese import penetration and U.S. trade deficit with respect to Korea/Taiwan as key components.

Unlike the U.S.-Japan trade conflict, the trade disputes between the U.S. and Korea/Taiwan for the Cold War period were affected by their relative economic/military dependence on the U.S. Korean and Taiwanese economies were conditioned by the U.S. economic actions, depending upon the U.S. domestic economic conditions. The U.S.-Korea trade relations were similar to the U.S.-Taiwan trade relations at the same newly industrializing stage, even if the U.S.-Korea trade disputes were relatively affected by hegemonic stability factors (U.S. economic dominance over Korea & East-West tension in Northeast Asia) because the trade disputes were more likely to be interlinked with tension on the Korean peninsula.

The Japanese economy was competitive with the U.S. economy, and thereby it was not well controlled by U.S. economic actions. The two superpower economies were mutually interdependent, cooperative, and in complex trade relations. The U.S.-Japan trade disputes were connected with the political issues between the U.S. and Japan. For example, the U.S. needed Japanese cooperation to prevent the North Korean nuclear bomb development and to reopen the North Korean nuclear inspection. In exchange for obtaining its cooperation, the U.S. extended the term that Japan decided to take some liberal trade measures to open its markets. That is the reason why the U.S. attempted to politically solve the U.S. trade conflict with Japan. On the other hand, the Korean and Taiwanese economies were relatively weak and adequately

managed by the U.S. economic actions, and thereby fluctuated with the U.S. economic conditions. For a nation at a developing—newly industrializing—stage (e.g., Korea and Taiwan), the hegemonic stability theory seems to be possible for explaining its trade disputes with the U.S. for the Cold War period, even if the surplus capacity theory is more adequate. On the other hand, for a nation at a developed stage (e.g., Japan), the hegemonic stability theory is inappropriate in understanding its trade disputes with the U.S. That is, there is not a hegemonic relationship any more in the U.S.-Japan trade relations. Thus, from the study of bilateral trade disputes between the U.S. and the NEACs, generally it can be deduced that the trade disputes between the U.S. and a nation during the Cold War period depend upon that nation's economic development stage:

hegemonic stability theory [for a nation—Japan (1950s-1960s) & Korea/Taiwan (1950s-1970s)—at a developing (newly industrializing) stage] → surplus capacity theory [for a nation—Japan (1970s) & Korea/Taiwan (1980s)—at a developed (advanced developing) stage] → ? [Japan (1980s-) & Korea/Taiwan (1990s)].

CHAPTER 5

CONCLUDING REMARKS

INTRODUCTION

The present chapter provides concluding remarks regarding the trade conflict between the U.S. and the Northeast Asian countries. First, the U.S.-NEACs' trade disputes are reviewed in terms of the theoretical (hegemonic stability, surplus capacity, interaction, and trade protection decision-making process) and methodological (Poisson and Negative Binomial methods of analysis) concerns discussed in the previous chapters. Then, solutions for reducing the U.S.-NEACs' trade disputes and possible directions for future research to advance our understanding of international trade conflict are considered, along with the contributions of this study.

THEORETICAL IMPLICATIONS OF THE STUDY

The present study empirically analyzes the models of trade conflict based on causal factors suggested by the two main theoretical perspectives. The hegemonic stability model, which emphasizes the role of hegemonic power in international

trade relations, is a political explanation of international trade. The surplus capacity model, which stresses the degree of excess capacity for production, focuses on the economic determinants of international trade. The alternative models are concerned with the interaction of the two main determinants and domestic political factors.

These models are tested on two levels of analysis in the overall trade area—a regional level using an aggregate sum for all the NEACs and a national level using a national total for each NEAC. For the regional level of analysis, the surplus capacity model has the greatest explanatory power, followed by the decision-making model and the hegemonic stability model. NEACs' import penetration and U.S. trade balance in U.S.-NEACs' trade relations are the most important factors in understanding the trade disputes between the U.S. and the NEACs.

At the national level of analysis, U.S-NEACs relationships were somewhat different from one another. The U.S.-Japan trade relations, which are not adequately explained by either hegemonic stability or surplus capacity idea, were dependent on the combination of three factors—the U.S. trade deficit with respect to Japan, Japanese penetration into U.S. markets, and the U.S. presidential election cycle. Specifically, the trade disputes between the U.S. and Japan were not significantly affected by hegemonic stability determinants since there were not hegemonic or bilaterally

asymmetric trade relations between them for the period of 1970-1989. And, the U.S.-Japan trade conflict was not greatly based on the U.S. domestic economic conditions—U.S. unemployment and GNP growth rates. The U.S.-Japan trade disputes were well conditioned by decision-making factors including the U.S. trade deficit in U.S.-Japan trade relations and the U.S. presidential election cycle.

The U.S.-Korea and the U.S.-Taiwan trade relations were similar in that they were based on U.S. domestic economic conditions and hegemonic stability factors in U.S.-Korea/Taiwan trade relations, along with Korean/Taiwanese import penetration and U.S. trade deficit with respect to Korea/Taiwan as key components. Unlike the U.S.-Japan trade conflict, the trade disputes between the U.S. and Korea/Taiwan for the Cold War period were affected by their relative economic/military dependence on the U.S. Korean and Taiwanese economies were conditioned by the U.S. economic actions, depending upon the U.S. domestic economic conditions. On the other hand, the U.S.-Korea trade relations were slightly different from the U.S.-Taiwan trade relations in that the U.S.-Korea trade disputes were relatively affected by East-West tension in Northeast Asia because the trade disputes were more likely to be interlinked with tension on Korean peninsula.

In the present study, the essential issue is: What are the determinants of international trade conflict? There are

two main theoretical perspectives on international trade conflict——hegemonic stability and surplus capacity theories. The first perspective seeks to examine international trade disputes in terms of a decreasing hegemonic power in the world economic system. The second perspective attempts to explain international trade conflict in terms of supply-demand functions and macroeconomic conditions in the world economy.

Given these theories, the central theme of the proposed study is: What were the causes of the United States' trade conflict with the Northeast Asian Countries such as Japan, South Korea, and Taiwan in the 1970s and 1980s? By focusing on the United States' trade relations with the NEACs, this study seeks to provide an empirical test of two contending theories put forth to explain U.S. trade conflict with the NEACs. The empirical findings indicate that surplus capacity theory is the best in predicting the U.S.-NEACs' trade conflict. As the NEACs' import penetration and the U.S. unemployment rate increased, the U.S.-NEACs trade disputes increased. This theory is the most adequate in explaining the trade disputes between the U.S. and the NEACs/Korea/Taiwan. The hegemonic stability theory seems to be well applied to the trade disputes between the U.S. and the NEACs/Korea/Taiwan. However, the expected signs of the relationships are mostly inconsistent with the basic argument of hegemonic stability. The theory, which is partially consistent with the hegemonic stability hypotheses, is least predictable in explaining the

U.S.-NEACs' trade disputes. The decision-making perspective has the second highest predictive power in explaining the U.S.-NEACs' trade conflict. This perspective can well be applied to the U.S.-Japan trade disputes. Specifically, the U.S.-Japan trade conflict increased, when the U.S. trade deficit problem with respect to Japan worsened and the U.S. presidential election was approaching. The decision-making determinant, U.S. trade balance in U.S.-NEACs' trade relations, is the most important in understanding the trade relations between the U.S. and the NEACs, along with the NEACs' import penetration. The interaction perspective is not highly supported by the empirical results. There are not significant interaction effects between hegemonic stability and surplus capacity determinants, with the exception of U.S.-Korea trade disputes. The two main determinants are not mutually stimulating, and have only combined effects on the U.S.-NEACs trade conflict. Moreover, the USITC protective or liberal decisions against the NEACs are not statistically significantly related to the internal/external determinants included in the models of trade conflict. The determinants affecting the USITC decisions were essentially different from the factors affecting the occurrence of U.S.-NEACs' trade disputes which is measured as the number of petitions against the NEACs. The positive or negative USITC decisions were more political and not easily determined by macroscopic perspectives. The decisions were based mainly on how much the

concerned U.S. industries were damaged by the NEACs' unfair trade. To understand the USITC decisions, an examination of the USITC decision-making process in terms of microscopic perspectives is needed, taking into account the influence of the injured U.S. industries, the voting behavior of USITC members, and the interactions among the U.S. Congress, the USITC, and the president.

The Japanese economy was competitive with the U.S. economy, and thereby the U.S. trade deficit in U.S.-Japan trade relations was not well controlled and solved by U.S. economic actions. The two superpower economies were mutually interdependent and needed to be cooperative in a variety of global issues. The U.S.-Japan trade disputes need to be viewed and treated in terms of the political/strategic interdependence between the U.S. and Japan. On the other hand, the Korean and Taiwanese economies were relatively weak and adequately managed by the U.S. economic measures and thereby fluctuated with the U.S. economic conditions. For a nation at a developing—newly industrializing—stage (e.g., Korea and Taiwan), the hegemonic stability theory seems to be also probable in explaining that nation's trade disputes with the U.S. for the Cold War period, even if the surplus capacity theory is more adequate. On the other hand, for a nation at a developed stage (e.g., Japan), the hegemonic stability theory is inappropriate in understanding that nation's trade disputes with the U.S. For example, there is no longer a

hegemonic trade relation between the U.S. and Japan. The U.S.-Japan trade disputes are now more likely to be based on the surplus capacity theory or the decision-making theory.

Theoretically, the present study suggests that no single model has the explanatory power to account for all the U.S.-NEACs' trade disputes. The trade disputes between the U.S. and Korea/Taiwan can be mainly explained by the surplus capacity theory, partially depending upon the hegemonic stability and the decision-making idea. The trade conflict between the U.S. and Japan was relatively based on the decision-making perspective partially interacting with the surplus capacity determinants. Accordingly, the following recommendations need to be considered as a basis for the development of a new theoretical perspective on bilateral trade relations between the U.S. and the NEACs.

First, it is necessary to combine the individual explanations—the surplus capacity-hegemonic stability-decision-making model—so that they can be generally applied to the U.S.-NEACs' trade disputes. That is, some alternative models of international trade conflict need to be developed with a new set of—economic and political—causal factors. More attention needs to be paid to the political side of U.S.-NEACs' trade relations taking into consideration governments and other domestic interest groups. To understand the bilateral trade disputes, an examination of the USITC decision-making process in terms of microscopic perspectives

is needed, taking note of the influence of the injured U.S. industries, the voting behavior of USITC members, and the interactions among the U.S. Congress, the USITC, and the president. Second, there is a need to discuss specific domestic/international rules which govern the international/bilateral trade relations. The bilateral trade conflict needs to be examined by the trade rules as well as the trade quantities. In conclusion, international trade relations should be discussed in terms of economic/political and domestic/international perspectives.

METHODOLOGICAL IMPLICATIONS OF THE STUDY

This study, a cross-national study, analyzes two main arguments of the international trade conflict through empirical techniques. Two methods of analysis are used to evaluate the empirical relevance of each perspective. The Poisson analysis was used first and then a Negative Binomial analysis was used to test the effect of causal factors on the U.S.-NEACs' trade conflict. The multivariate models which are tested in this study are concerned with hegemonic stability, surplus capacity, interaction, and the trade protection decision-making process.

The present study deals with dependent variables measuring the number of times a particular event—U.S.-NEACs'

trade conflict (the number of petitions filed against the NEACs)—occurs. What is the most appropriate research method for analyzing event-counting dependent variables? Linear regression analysis has been used to analyze count dependent variables, but its assumptions are not valid in the variables. The assumption of normality of the disturbances cannot be made, and, therefore, the prediction formulae which are deduced from the linear model give impossible values. Thus, hypothesis tests will be invalid (See Appendix A). When the values of the dependent variable are counts and non-negative integers, the variables cannot have a normal distribution which is continuous and can yield negative values. The statistical method used in trade conflict research dealing with dependent variables measuring the number of occurrences of a particular event are event-count analysis. The methods such as Poisson, Generalized Event Count (GEC), and Negative Binomial (NB) analysis are more applicable to the special nature of event count data.

To examine the general effects of the causal factors on the U.S.-NEACs trade conflict and to solve the limitations faced by the linear regression analysis, the present study uses Poisson regression model analysis. Poisson regression is appropriate when the dependent variable is a count, such as the number of times an event occurs. It may be particularly useful if some observations have very low values. In short, the choice of the Poisson models is justified if the dependent

variable counts the occurrence of a given event during a fixed period and if the counts have small values (are not overdispersed). In this study, an assumption is made that the incidents of trade conflict are occurring independently of one another and are not overdispersed, and thereby the Poisson method of analysis is the most suitable for the study. Under this independence principle, trade disputes are not contagious—that is, the occurrence of some trade disputes do not increase the probability of future trade disputes.

However, if the trade disputes between the U.S. and the NEACs are mutually interdependent with one another, the U.S.-NEACs' trade disputes are contagious outcomes. In this case, the assumption of Poisson model is not true any more. To test whether there are "contagion" in the U.S.-NEACs' trade relations, two forms of "contagion"—negative and positive—need to be considered. Negative contagion denotes a situation, a U.S. industry's decision to file a petition against a NEAC will decrease the probability of its decision against other NEACs (the U.S.-NEACs trade disputes as a negative contagious process) or other U.S. industries' decisions against the NEAC (the U.S.-NEAC trade conflict as a negative contagious process). Positive contagion, on the other hand, indicates that a U.S. industry's decision to file a petition against an NEAC will increase the probability of its decision against other NEACs (the U.S.-NEACs' trade disputes as a positive contagious process) or other U.S.

industries' decisions against the NEAC (the U.S.-NEAC trade conflict as a positive contagious process). In the present study, only one type of interaction—positive contagion—is noted, since the U.S.-NEAC(s) trade disputes may positively interact with one another. In this case, the assumption of independence used in Poisson analysis is clearly incorrect.

The Poisson distribution can be modified to allow for positive contagion. The negative binomial model shows whether positive contagion exists—the events of U.S.-NEACs' trade disputes are not independent of one another. The empirical findings of the proposed study show that, on the whole, there are no big differences between the Poisson and the NB model results, indicating that the assumption of independence is valid in the study of the U.S.-NEACs' trade disputes. In the case of the U.S.-NEACs' (regional) trade disputes, the log-likelihood ratios indicate that the negative binomial models are slightly better than the Poisson models in explaining the U.S.-NEACs' trade disputes, showing that allowing for positive contagion slightly improves the basic Poisson model's performance. The event-count analysis, such as Poisson and Negative Binomial methods, is the most appropriate research method for the study analyzing the trade conflict data, recorded as event-counts. The present study can be a good example of applying the Poisson and Negative Binomial methods of analysis to the trade conflict research.

CONTRIBUTIONS OF THE STUDY

There are three important contributions of the study.

Theoretically, there has been very little work comparing the two main theories of international trade relations. My study deals with two main perspectives of international trade relations—the hegemonic stability theory and the surplus capacity theory. This study examines the U.S.-NEAC(s) trade conflict in terms of the decreasing U.S. hegemony in U.S.-NEACs trade relations and the worsening U.S. macroeconomic conditions. Based on these two theories, I developed the alternative ideas. The first alternative idea is an interaction perspective, which maintains that the two theories of international trade relations are complementary to each other or mutually stimulating each other. The second alternative idea is the U.S. trade protection decision making process perspective. This idea deals with two factors making U.S. industries file the petitions with the high expectation of obtaining positive USITC decisions. This study provides an understanding of the nature of U.S.-NEACs trade disputes by comparing the two main theories and the alternative perspectives.

Methodologically, there has been very little empirical work of the two main theories of international trade relations. This study seeks to evaluate their theoretical relevancies using new empirical methods, that is, event-count

analyses such as Poisson and Negative Binomial Methods. There are three basic directions of trade conflict research methods. One stream of research uses mainly descriptive statistics to develop its arguments. Another stream of research uses statistical techniques designed for continuous, interval level dependent variables. Linear regression analyses are the primary techniques. Finally, the statistical method dealing with dependent variables recorded as event-counts is event-count analysis. Poisson, Generalized Event Count (GEC), and Negative Binomial (NB) analyses belong to this method.

The choice of the Poisson models is justified if my dependent variable is a count, such as the number of times a trade conflict occurs and if some observations have very low values. The Poisson model is based on one important assumption—the occurrence of the events is independent. Under this independence assumption, trade disputes are not contagious—that is, the occurrence of some trade disputes do not increase the probability of future trade disputes. To test the assumption of independence, I considered positive contagion, since the U.S.-NEAC(s) trade disputes may positively interact with one another. The Poisson analysis can be modified to allow for positive contagion using the Negative Binomial (NB) method. The NB analysis shows whether or not allowing for positive contagion improves the Poisson model's performance. Additionally, to correct for selection bias present in the data set, I used the standard models for

U.S.-South Korea and U.S.-Taiwan trade disputes with zero cases, and the truncated-at-zero models for U.S.-Japan and U.S.-NEACs trade disputes with positive cases only in the data set. Accordingly, this study deals with four different models--standard/truncated Poisson models and standard/truncated Negative Binomial models. This is a new attempt to apply event-count techniques to trade conflict research.

Practically, there has been very little systematic knowledge about the trade conflict between the U.S. and the NEACs. This study tries to explain the bilateral trade disputes between the U.S. and the NEACs on the basis of petitions filed with the USITC in the overall trade area for the period of 1970 to 1989. I extracted the cases of U.S.-NEACs' trade disputes from the USITC annual report. It is important that the U.S.-NEACs' trade disputes are examined. The three Northeast Asian nations have become the most active trading members in the world economy and have experienced trade conflict with the U.S. for the period of 1970 to 1989. In addition, Northeast Asia was a politically and strategically important and salient region for the Cold War period. Thus, this study deals with economically competitive, yet politically and militarily cooperative, relations between the U.S. and the NEACs. The cross-national study of U.S.-NEACs' trade relations explains not only the similarities of the region but also the dissimilarities within the region.

This study gives an understanding of the nature of the U.S.-NEACs' trade disputes, and draws solutions to reduce the trade disputes, thereby developing mutually benefiting bilateral trade relations.

SUGGESTIONS FOR MUTUALLY BENEFITING U.S.-NEACs' TRADE RELATIONS AND FOR FUTURE RESEARCH

There are four periods of U.S.-NEACs' trade relations since World War II, in terms of Altman's analysis (1994:2-3) about the four phases of U.S.-Japan trade relations. The first period was the reconstruction period, extending over the 1950s, in which the United States consciously helped rebuild the NEACs' industrial capacities in order to make democracy permanent. During that period, the U.S., as a patron of NEACs' industrial development, tolerated NEACs' protection of home markets. The second period ran through the 1960s, when the NEACs, as the outpost line of the U.S. Cold War containment policy, made an accelerating economic progression under the U.S. nuclear umbrella. The NEACs, as the host to the U.S. military base, became vital to the defense of Pacific sea-lanes. Although economic issues were steadily emerging, they remained secondary to security interests. The third was the period of NEACs' growing economic development which lasted from the early 1970s until the end of the Cold War. During

that period, Japan became one of the greatest economic powers in world trade, and Korea and Taiwan belonged to the top ten trading partners of the U.S. For the years between 1970 and 1989, the trade disputes between the U.S. and the NEACs continually rose even while the security issue remained paramount. Finally, the U.S.-NEACs' trade relations entered into its fourth period, with the advance of the post-Cold War era stressing economic matters first.

The present study attempted to analyze the U.S.-NEACs' trade disputes for the third period between 1970 and 1989. During the first two periods of U.S.-NEACs' trade relations, the U.S. acted as a supporter to help the NEACs' economic development, no matter what the NEACs did in the U.S.-NEACs' trade relations. At that time, the NEACs' economies were non-competitive with the U.S. economy and were well managed by the U.S. economic/political measures in bilaterally hegemonic and asymmetric trade relations between the U.S. and the NEACs. However, for the period of 1970-1989, the Japanese economy threatened the U.S. economy as the world's largest, and the U.S. could not control the rapid Japanese penetration into the U.S. markets, producing the serious U.S. trade deficit and leaving Japanese protection against the U.S. goods. The relations between the U.S. and Japan were competitive in trade matters but cooperative in political issues. During the third period, Korea and Taiwan also increased their autonomy in international relations through improving their economic

capabilities and political positions. Nevertheless, the NEACs had no choice but to depend upon U.S. military support for their security. Thus, the U.S. has steadily experienced the trade disputes with the NEACs since the 1970s, even if it has maintained its regional hegemony based mainly on its political and military power.

What is the best way to reduce the trade frictions between the U.S. and the NEACs? The proposed study provides a few relevant implications to settle the U.S.-NEACs' trade disputes. First, the United States does not dominate the U.S.-NEACs' trade relations any longer. That is, the U.S. is not in a hegemonic position in the bilateral and regional trade relations between the U.S. and the NEACs. In order to regain stable regional trade relations, the U.S. must implement its role as an advanced industrialized nation through mutually beneficial and cooperative trade relations. Second, as the empirical findings of the study indicate, the U.S.-NEACs' trade disputes are essentially based on the worsening U.S. trade deficit caused by the increased NEACs' import penetration. The NEACs cannot be "free-riders" pursuing unilateral benefits in trade with the U.S. under U.S. military protection any longer. The NEACs must open their markets to the U.S. when their domestic industries are competitive in the international market. The NEACs would benefit by taking more cooperative trade measures toward the United States. Finally, in order to reduce the U.S.-NEACs'

trade disputes, both the U.S. and the NEACs need to develop a mutually planned industrial cooperative scheme and form a regional economic bloc originating from Asia-Pacific Economic Cooperation (APEC). As Bergsten (1994:20-26) mentions, APEC would become neither a customs union like the European Union nor a free trade area like that covered by the North American Free Trade Agreement (NAFTA). Nevertheless, APEC would try to achieve regional agreement on issues that could not yet be resolved at the global level. Thus, the two sides of the Pacific ocean, including the world's largest economies (the U.S. & Japan) and the newly industrializing economies (Korea & Taiwan), need to create a regional bloc in an effort to sustain global peace and prosperity. A regional economic bloc derived from APEC can play a major role in the solution of U.S.-NEACs' trade disputes.

The proposed study has attempted to explain bilateral trade conflict between the U.S. and the NEAC(s) through transformed global theories of international trade relations. In the future, greater attention needs to be focused on developing models which combine both international/domestic and political/economic factors in examining bilateral trade relations between the U.S. and the NEACs. Such models require the formulation of new concepts and new methodologies in the study of international trade relations. The present research takes the first step toward such a study of international trade conflict.

APPENDIX

APPENDIX A

- Ordinary Least Squares (OLS) Results -

Table A1: Hegemonic Stability & Surplus Capacity OLS Regression Results

Model	Dep. Var.	Indep. Var.	B	Std. Error	T	R^2
HSNE	USTRCNE	**USGNPNE (-)**	**-2.86**	**10.93**	**-.26**	**12.29**
		USMSPNE (+)	**.10**	**.66**	**.15**	
		EWTENCS (-)	**-.02**	**.01**	**-1.42**	
SCNE		USUNEMR (+)	2.13	.85	2.52*	80.61*
		USGNPGR (-)	-.15	.50	-.30	
		NEIMPEN (+)	1.67	.22	7.52*	
HSJA	USTRCJA	**USGNPJA (-)**	**-4.51**	**3.24**	**-1.39**	**22.36**
		USMSPJA (+)	**.18**	**.25**	**.73**	
		EWTENCS (-)	**-5.26E-04**	**.01**	**-.11**	
SCJA		USUNEMR (+)	.17	.66	.25	39.81*
		USGNPGR (+)	.12	.38	.30	
		JAIMPEN (+)	.88	.29	3.03*	
HSKO	USTRCKO	**USGNPKO (-)**	**.08**	**.16**	**.52**	**17.87**
		USMSPKO (+)	**.01**	**.04**	**.34**	
		EWTENCS (-)	**-.01**	**.00**	**-1.77**	
SCKO		**USUNEMR (+)**	**.80**	**.67**	**1.19**	**18.68**
		USGNPGR (+)	**.07**	**.27**	**.26**	
		KOIMPEN (+)	**-3.16**	**2.87**	**-1.10**	
HSTA	USTRCTA	**USGNPTA (-)**	**.07**	**.09**	**.81**	**21.49**
		USMSPTA (+)	**.02**	**.06**	**.33**	
		EWTENCS (-)	**-.01**	**.00**	**-1.56**	
SCTA		USUNEMR (+)	.21	.40	.53	68.32*
		USGNPGR (-)	-.23	.23	-.98	
		TAIMPEN (+)	2.23	.40	5.59*	

Note: * = Statistical Significance: p≤.05.
HS = Hegemonic Stability Model; SC = Surplus Capacity Model; and (+/-) = the directions (either positive or negative) of the relationships (from the unadjusted OLS estimation). The results of the adjusted OLS estimation are bold-typed.

Table A2: Interaction OLS Regression Results

Model	Dep. Var.	Indep. Var.	B	Std. Error	T	R^2
INNE	USTRCNE	HSNE1 (-)	-3.27	6.33	-.52	73.12*
		HSNE2 (-)	-8.91	6.73	-1.32	(N = 20)
		SCNE1 (+)	2.43	5.05	.48	
		SCNE2 (+)	3.11	2.17	1.44	
		HSC11 (+)	1.45	7.64	.19	
		HSC12 (-)	-.23	6.61	-.04	
		HSC21 (-)	-14.23	11.03	-1.29	
		HSC22 (+)	2.32	6.74	.34	
INJA	USTRCJA	HSJA1 (+)	1.35	3.10	.44	28.37
		HSJA2 (-)	-1.80	2.67	-.67	
		SCJA (+)	4.04	2.31	1.75	
		HSC1 (+)	2.43	4.97	.49	
		HSC2 (-)	-2.68	3.57	-.75	
INKO	USTRCKO	HSKO1 (-)	-3.61	1.63	-2.22*	65.51*
		HSKO2 (+)	1.35	2.27	.60	
		SCKO (+)	2.44	1.92	1.27	
		HSC1 (-)	-1.85	2.34	-.79	
		HSC2 (+)	.61	1.71	.36	
INTA	USTRCTA	HSTA1 (+)	-7.03	2.70	-2.60*	62.01
		HSTA2 (-)	10.83	5.40	2.00	
		SCTA1 (+)	-.24	1.96	-.12	
		SCTA2 (+)	-.88	.63	-1.37	
		HSC11 (-)	-.41	1.85	-.22	
		HSC12 (+)	6.68	2.62	2.55*	
		HSC21 (-)	5.86	2.39	2.45*	
		HSC22 (-)	-3.19	2.18	-1.46	

Note: * = Statistical Significance: p≤.05.
Each variable of this model uses the transformation into standard form and the adjustment into interaction term. [weighted value = (actual value - mean)/standard deviation].
IN = Interaction Model.
HSNE1 = (USGNPNE+EWTENCS)/2; HSNE2 = USMSPNE; SCNE1 = (USUNEMR+NEIMPEN)/2; SCNE2 = USGNPGR; HSC11 = HSNE1 by SCNE1; HSC12 = HSNE1 by SCNE2; HSC21 = HSNE2 by SCNE1; HSC22 = HSNE2 by SCNE2; HSJA1 = (USGNPJA+EWTENCS)/2; HSJA2 = USMSPJA; SCJA = (USUNEMR+USGNPGR+JAIMPEN)/3; HSC1 = HSJA1 by SCJA; HSC2 = HSJA2 by SCJA; HSKO1 = (USGNPKO+EWTENCS)/2; HSKO2 = USMSPKO; SCKO = (USUNEMR+USGNPGR+KOIMPEN)/3; HSC1 = HSKO1 by SCKO; HSC2 = HSKO2 by SCKO; HSTA1 = (USGNPTA+EWTENCS)/2; HSTA2 = USMSPTA; SCTA1 = (USUNEMR+TAIMPEN)/2; SCTA2 = USGNPGR; HSC11 = HSTA1 by SCTA1; HSC12 = HSTA1 by SCTA2; HSC21 = HSTA2 by SCTA1; and HSC22 = HSTA2 by SCTA2.

Table A3: Decision-Making OLS Results

Model	Dep. Var.	Indep. Var.	B	Std. Error	T	R^2
DMNE	USTRCNE	USTBNE (-)	-.30	.05	-5.88*	67.48*
		USPRELC (+)	2.95	3.25	.91	(N = 20)
DMJA	USTRCJA	USTBJA (-)	-.15	.04	-4.28*	59.30*
		USPRELC (+)	4.15	1.60	2.60*	
DMKO	USTRCKO	USTBKO (-)	1.25	.58	2.15*	22.89
		USPRELC (-)	-.79	.90	-.22	
DMTA	USTRCTA	USTBTA (-)	-.55	.10	-5.70*	65.84*
		USPRELC (-)	-.40	1.20	-.33	

Note: * = Statistical Significance: p≤.05.
USTB*=U.S. trade balance with the NEAC(s); and USPRELC=U.S. presidential election cycle.
DM = Decision-Making Model.

Table A4: A Comparative Evaluation of Models for Their Predictive Performance

U.S. Trade Conflict	Ranking of Models	Key Variables
NEACs	SC* > DM* > HS	NEIMPEN* USTBNE* USUNEMR*
JAPAN	DM* > SC* > HS	USTBJA* JAIMPEN* USPRELC*
KOREA	DM > SC > HS	USTBKO* EWTENCS USUNEMR
TAIWAN	SC* > DM* > HS	USTBTA* TAIMPEN* EWTENCS

Note: * = Statistical Significance: p≤.05.
The models (HS=Hegemonic Stability Model, SC=Surplus Capacity Model, IN=Interaction Model, and DM=Decision-Making Model) are rank ordered based on their overall statistical results (R^2,t-test, & F-test); and listed variables are those with the highest predictive ratios for the given type of analysis.

APPENDIX B

- Bilateral Trade Conflict Data -

* The Petitions Filed With The United States International Trade Commission (USITC)
(Source: The USITC Annual Report, 1970-1989)

YEAR	JAPAN		KOREA		TAIWAN		TOTAL	
	T	A	T	A	T	A	T	A
1970	4	3	0	0	0	0	4	3
1971	2	1	0	0	1	1	3	2
1972	10	4	0	0	0	0	10	4
1973	9	5	0	0	0	0	9	5
1974	4	1	0	0	0	0	4	1
1975	5	2	0	0	0	0	5	2
1976	4	2	1	1	0	0	5	3
1977	4	3	1	0	0	0	5	3
1978	7	3	1	1	0	0	8	4
1979	2	1	1	1	1	1	4	3
1980	13	5	1	0	1	0	15	5
1981	4	3	2	1	3	2	9	6
1982	6	5	9	7	5	4	20	16
1983	11	7	10	8	6	5	27	20
1984	7	6	9	7	4	3	20	16
1985	11	9	10	6	11	8	32	23
1986	12	9	11	9	11	10	34	28
1987	13	12	1	1	3	0	17	13
1988	20	17	3	3	8	6	31	26
1989	7	6	6	3	7	3	20	12
TOTAL	155	104	66	48	61	43	282	195

Note: T = the number of petitions
A = the number of petitions with positive USITC decisions

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