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The Determinants of the Level of Cooperation and Conflict in Cross-Strait Relations after 1990

Pao-wen Li

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THE DETERMINANTS OF THE LEVEL OF COOPERATION AND CONFLICT IN CROSS-
STRAIT RELATIONS AFTER 1990

by

PAO-WEN LI

Under the Direction of Andrew H. Wedeman, PhD

ABSTRACT

This dissertation investigates negative or-positive patterns and the behavioral stability of cross-strait relations with a time-series analysis. It aims to clarify the impacts of these four factors in cross-strait relations: the Cold War legacy, the Chinese Civil War legacy, economic interdependence, and Taiwanese domestic politics. The key findings are as follows.

First, most factors suggested by the existing literature only influence the stability, rather than negative-or-positive patterns, of cross-strait relation. For the Cold War legacy, although the United States played an important role in the formation of the U.S.-China-Taiwan triangle, the U.S. influence mainly works on the stability of cross-strait relations in an indirect way. Regarding the Chinese Civil War legacy, the legacy is the only factor that can influence both

negative-or-positive patterns and the stability of cross-strait relations. China's tit-for-tat response to Taiwan is the only significant pattern related to the negative-or-positive change of cross-strait relations, which suggests Taiwan's special status in China's policy-making process since 1949. For economic interdependence and Taiwan's domestic politics, the decline of economic interdependence and the approach of Taiwan's presidential election both create instability rather than conflict for cross-strait relations. In short, the validity of existing international relations theories, like the commercial peace theory and "election to fight" mechanisms, is not supported by the statistical analysis in this dissertation.

Second, the importance of Taiwan is evident, and the conventional wisdom about the conflictive and instable effects of the pro-independence leadership in Taiwan may be more like a myth in cross-strait relations. The results in this dissertation show no evidence to support the presence of a conflictive tendency when Taiwan's pro-independence leaders are in power. More importantly, with the evidence of China's tit-for-tat response to Taiwan since 1979, building an environment to induce Taiwan's persistent cooperation to China is the key to reduce the future tension in the Taiwan Strait.

Finally, although the impact of leadership change in Taiwan is limited, it still works as a good proxy to identify the priorities of Taiwan and China's behaviors in different periods and synthesize the factors coming from both international and domestic levels.

INDEX WORDS: Cross-Strait Relations, U.S.-China-Taiwan Relations, Strategic Triangle, Election, Economic Interdependence, Event Data

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PAO-WEN LI

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

in the College of Arts and Sciences

Georgia State University

2014

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2014

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December 2014

DEDICATION

To Taiwan

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CHAPTER 1. INTRODUCTION

The goal of this dissertation is to clarify what influences cross-strait relations. Based on the existing literature in international relations (IR) and the history after World War Two, there are four factors that can influence cross-strait relations, which are the Cold War legacy, the Chinese Civil War legacy, economic interdependence, and Taiwan's domestic politics. The two main interests of this dissertation are: First, what is the relationship between cross-strait relations and the triangular relations among the United States (U.S.), China, and Taiwan? Second, how do the four factors influence cross-strait relations? To answer the questions, I mainly apply the time series analysis to identify the causal mechanisms in a context of time.

Regarding the first research interest, the goal is to ensure the necessity to include the U.S. influence when analyzing cross-strait relations. From a perspective of history, the formation of the current cross-strait relations are a jointly product of the Chinese Civil War and the Cold War and the Taiwan issue is entangled with the "one China" sovereign dispute and the U.S.-Taiwan security cooperation. The U.S. influence is obvious but how great it is in the real world is seldom tested empirically and usually taken for granted with no clear clue about its influential patterns. This dissertation conducts a series of statistical analysis to test the presence of the U.S. influence in cross-strait relations, and aims to figure out: Is it necessary to consider the U.S. related behaviors in cross-strait relations? If the answer is yes, the results may help us to specify the U.S. influential patterns in cross-strait relations. If the answer is no, the result then becomes the evidence to support the claim that cross-strait relations are pure bilateral affairs between Taiwan and China, and more importantly, it also means that taking a two-player approach between Taiwan and China is sufficient to explain cross-strait relations.

As to the second research interest, the war-and-peace aspect is not the only dimension in cross-strait relations, and behavioral stability is a new dimension that this dissertation attempts to model. The interest to model instability is to reflect the reality that states' behavioral patterns are not always constant. More importantly, the existing literature may provide theories and hypotheses to explain what leads to conflict and what triggers cooperation, for example the liberal peace theory and the connection between electoral cycle and war (Doyle 1983; Gaubatz 1991). However, the existing literature does not provide sufficient theories about what leads to instability. This dissertation hypothesizes that uncertainty leads to instability, and any behavior disrupting the status quo creates uncertainty for decision-makers and then leads to behavioral instability for a state. In other words, this dissertation may not only contribute to how the Cold War legacy, the Chinese Civil War legacy, economic interdependence, and Taiwan's domestic politics influences the level of cooperation and conflict of cross-strait relations, but also how and in what way these factors create uncertainty for decision-makers in Taiwan and China, and then leads to instability for Taiwan and China's behaviors toward each other.

1.1 What Influences Cross-Strait Relations?

Cross-strait relations between China and Taiwan have been the topic of a wide and extensive literature that has focused on several recurring factors. In this dissertation, I investigate the influence of the Cold War legacy, the Chinese Civil War legacy, economic interdependence, and Taiwan's domestic politics on cross-strait relations.

At the international level, the power politics among the United States, China, and Taiwan and the economic interdependence between Taiwan and China are the most salient international factors in many works about cross-strait relations. First, the formation of the U.S.-China-Taiwan triangle is based on two historical legacies, which are the Cold War legacy, the Chinese Civil

War legacy. The most important legacy of the Chinese Civil War is the “one China” principle in the U.S.-China-Taiwan triangle. Although Taiwan (the Republic of China, ROC) and China (the People Republic of China, PRC) have been a pair of political rival for decades, their preferences to hold the “one China” position were identical for a long time.¹ In other words, although the civil war stopped in 1949, the legacy of one China principle remains and enables both Taiwan and China to directly or indirectly influence each other’s behavior. In the beginning of the 1980s, the hostility and rivalry started to ease with China’s proposal of peaceful unification and “One Country, Two Systems.” Taiwan responded in the late 1980s with the liberalization of citizens’ visits to China and more importantly, the official end of the mobilization for suppressing the communist rebellion in 1991, which had lasted for 44 years. However, the “one China” legacy continues to this day and shows no signs of vanishing although the political rivalry and hostility have been mitigated in the 1980s. Thus, in this dissertation, the Chinese Civil War legacy is operationalized by China’s influence on Taiwan’s behavior toward China and Taiwan’s influence on China’s behavior to Taiwan. If the Chinese Civil War legacy works, we may expect to see Taiwan’s behavior toward China is function of China’s behavior to Taiwan, and China’s behavior to Taiwan is a function of Taiwan’s behavior toward China.

The legacy of the Cold War is, in essence, the import role of the United States in setting the status quo of the Taiwan Strait. From China’s perspective, the Chinese Civil War stopped because of U.S. efforts to neutralize the Taiwan Strait with the 7th Fleet after the outbreak of the Korean War. On the other hand, for U.S. foreign policy and strategy in the first half of the Cold

¹ Although Taiwan stopped to emphasize the rigid “one China” principle in the 1990s, the framework of “one China” still constrains the behavior of Taiwan domestically and internationally. At the international level, “one China” policy has been an important part in both the U.S. and China’s foreign policies. At the domestic level, the political cleavage in Taiwan is based on the unification-or-independence line, which makes to stay on the “one China” position or not become a sensitive issue in Taiwan’s domestic politics.

War, having different regimes on the two sides of the Strait was helpful for building an anti-communist security system in East Asia. In fact, due to different strategic considerations in Europe and East Asia, the U.S. strategy to ally in East Asia was to build a set of bilateral security pacts with several Asian countries, resulting in the so-called “hub and spoke” system in East Asia.² In other words, the U.S. strategy in East Asia created a set of triangular relations instead of the multilateral pattern found in Europe. As a result, Taiwan, China, and the United States became one of the triangular behavioral networks and Taiwan Strait became a key hot spot in East Asia. Thus, in this dissertation, the Cold War legacy is operationalized by the U.S. influence on cross-strait relations. If the Cold War legacy works, we may expect to see that cross-strait relations are a function of the U.S. related behaviors.

Second, the rapid growth of cross-strait economic independence has become the most noticeable phenomenon since the late 1980s. Taiwan’s liberalization of investment and trade toward China started to be legal in the early 1990s. In fact, the liberalization was only to recognize an already existing situation in which the Kuomintang (KMT) regime in Taiwan had already lost its capability to totally control and censor all out-going trade flow and investment to China. At that time, the trade flow and investment to China was like a public secret in Taiwan. With such a strong level of economic interaction, liberal international relations theory scholars began suggesting that the economic interdependence between two countries increases the possibility of cooperation. However, some empirical studies about cross-strait relations also found that the causal relationship between economic interdependence and political cooperation is unclear and sometimes spurious.³ In short, the relationship between economic interdependence

² The strategy to ally in West Europe was multilateralism and the result was the establishment of the North Atlantic Treaty Organization (NATO). For a detailed discussion about the different strategies in these two areas, see Cha (2010).

³ For example, Chu (1997) explains that the trade-promote-peace hypothesis does not consider Taiwan’s domestic

and cooperation in cross-strait relation still needs a further investigation. In this dissertation, the economic interdependence is operationalized by trade interdependence. If economic interdependence plays a role in cross-strait relations, we may expect to see the more interdependent, the less likely to have conflict between Taiwan and China.

With regard to Taiwan's domestic politics, the democratization of Taiwan provides an opportunity for Taiwan's domestic politics to influence cross-strait relations because the "one China" position is no longer the only preference that Taiwan may hold. Taiwan's democratization is unique because democracy is not the only issue between the ruling and opposition camps. Since the foundation of KMT's authoritarian rule in Taiwan is based on the need to prepare for striking back to mainland China for unification, to democratize equals to challenge the latent assumption of national unification under the KMT regime. As a result, the debate about independence and unification becomes the central issue for Taiwan's domestic politics. However, Taiwan's deviation from the "one China" position can impact cross-strait relations and the U.S.-China-Taiwan triangle profoundly because it challenges the consensus between the United States and China since 1979 and may lead to military conflict. In short, after democratization, Taiwan's domestic politics becomes a crucial factor because Taiwan's willingness to stay on the "one China" position is no longer a constant. Thus, due to the unification-or-independence nature of Taiwanese politics, it is reasonable to take Taiwan's electoral cycle and leadership change as indicators to reveal Taiwan's willingness to stay on the "one China" position. In general, this dissertation hypothesizes the approach of Taiwanese elections and Taiwan's pro-independence leadership leads to a conflictive tendency in cross-strait relations.

politics, and Tung (2003) emphasizes that economic interdependence only promotes China's leverage on Taiwan.

In sum, this dissertation wants to explore how the Cold War legacy, the Chinese Civil War legacy, economic interdependence, and Taiwan's domestic politics influence cross-strait relations. The research framework of this dissertation is presented as Figure 1.1.

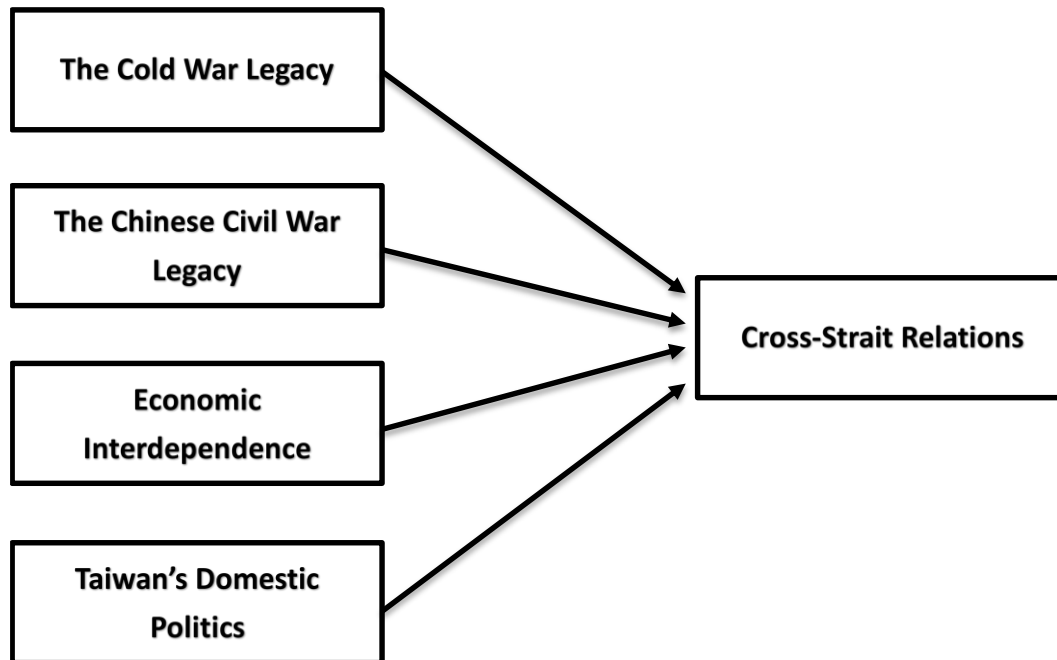


Figure 1.1 Research Framework

1.2 Theoretical Debates and Questions

The approach of this dissertation is a liberal approach in general because the factors from the domestic level are included and assumed to influence the decision-making of foreign policy. More importantly, the liberal approach also helps assess the relative importance of the factors from both international and domestic levels in cross-strait relations. Therefore, although I take a liberal approach, the international factors are not excluded and will be treated equally as the domestic factors in the analysis.

For a long time, what the relative importance of international versus domestic factors is in determining the external behavior of states has been an important debate in IR. From the

neorealist perspective, for pursuing parsimony, assuming states as unitary and rational actors is a rational choice to see the variance within the international system (Waltz 1979: Ch 6). In this light, only the power structure at the international level illustrates the basic framework of world politics. Although factors from the domestic and individual levels may provide some understanding about the formation of preference in foreign policies, when facing the anarchy nature at the international level, only security and survival are the first priority to concern for a state. In other words, the neo-realists assume that states are all alike with a similar preference for survival, and the position in the international structure is the only factor influencing varying strategies to survive. Following this logic, polarity and alliances become the most significant factors to explain foreign behaviors like conflict or trade in many IR studies (Levy 1984; Mansfield 1994; Siverson & Sullivan 1983; Waltz 1979). If this is correct, cross-strait relations should be a function of the international power structure, more specifically, the balance of power among the U.S., China, and Taiwan.

On the other hand, in Moravcsik's (1997) concept, state behavior is a function of state-society relations, not a function of the international structure, so state preference may vary with social ideas, interests and institutions. In other words, all global politics is local, and this liberal concept challenges the neo-realist assumption that states are unitary actors with similar preferences. The salience of domestic explanations comes from two interactive parts. First, domestic politics helps explain the origins of national preference. Thus, factors like the balance of power among domestic groups, politicians' preferences, and historical memories are determinants of state preferences that lead to different foreign policies (Fearon 1994; Katzenstein 1996; Rogowski 1987). Second, the political institutions at the domestic level helps explain how preferences are aggregated in certain ways. In this light, factors, like regime type, the executive-

legislative relations, and electoral system, are also important determinants of foreign policy (Christensen & Snyder 1990; Doyle 1997; Gaubatz 1991). In sum, by relaxing the assumption of unitary actor, domestic factors help explain the variation of foreign behavior and reveal different preferences and capacities among states. If this liberal concept is correct, cross-strait relations should be a function of the domestic politics on each side, and factors like election cycle, partisanship, and leadership may have a direct impact on cross-strait relations.

However, although domestic politics is important when analyzing foreign policy, the traditional problem of social science remains, i.e., the problem of “too many variables” (Lijphart 1971). To simply include all factors from the two levels only produces a list of variable without priority, and may not help with identifying the significant factors. Synthesizing factors and setting priority are necessary for both decision-makers and IR researchers. In the relevant literature, there are two ways to synthesize factors from the two levels. The first is the rational model, which is the two-level-game approach that takes the strategic interactions between the two levels into account as found in Milner (1997) and Putnam’s (1988) works. The second is the normative model, which takes values and beliefs at the individual or collective levels as policy guidelines. At the individual level, leaders’ ideas can work as a road map to determine preferences or understand the causal relationships in policymaking (J. Goldstein & Keohane 1993), and at the collective level, the consolidation or collapse of a belief system is the key to predict when a state changes its behavioral patterns (Legro 2005). In sum, both rational and normative models help clarify the scope of impact for a certain factor and under what condition this factor works.

In the case of cross-strait relations, it is very likely that both international and domestic factors contribute to the fluctuation of cross-strait relations. In this case, I will investigate these topics in the following chapters to clarify how a certain factor influences cross-strait relations.

The first part of this dissertation is to test the significance of the U.S. influence from 1979 to 2012. The question in this part is whether cross-strait relations are a function of the U.S.-China-Taiwan triangular relations or only a function of the bilateral interactions between Taiwan and China. In fact, many studies taking the dyadic conflict approach, the bargain game approach, and the “divided nation” approach all tend to treat cross-strait relations as a pure two-player interaction (Henderson, Lebow, & Stoessinger 1974; Lo & Lin 1995; Wu 1995). On the other hand, the strategic triangle approach emphasizes the special role of the United States in the Taiwan Strait (Dittmer 2011; Wu 2005a). I plan to use statistical analysis to test the necessity to include the U.S. behaviors when analyzing cross-strait relations.

The second part is to assess the influence of cross-strait economic interdependence from 1990 to 2012. Based on the results of many empirical studies, liberal theories suggest the trade-promote-peace hypothesis to build a causal relationship between economic interdependence and the potential for conflict (Keohane & Nye 1977; Oneal & Russett 1999). However, the realist critiques are also crucial because the trade-promote-peace hypothesis fails to consider the relative gains problem, the security externality problem, hegemonic stability and alliance relationships (Gilpin 1981; Gowa 1995; Grieco 1988). In this case, it is necessary to control for the effect from the real politics before making the causal inference about the economic interdependence between Taiwan and China. I plan to use the strategic interactions among the United States, China, and Taiwan to control for the political effects from the international level and then assess the influence of economic interdependence crossing Taiwan Strait. More

importantly, asymmetric dependence can also be a leverage to induce cooperation, as found in Keohane and Nye's (1977) concept of vulnerability, so the effect of dependence should also be considered. In this case, I plan to run another model in the same chapter to compare the different effects between interdependence and asymmetric dependence.

The third part is to investigate the influence of Taiwan's elections on cross-strait relations from 1990 to 2012. Since Taiwan did not have direct and meaningful elections at the central government level before 1992 and the first direct presidential election was held in 1996, to assess the effect of direct election starting from 1990 should be appropriate. The main question of this part is: Whether cross-strait relations are influenced by the timing of election or not. Empirical studies suggest that the war-prone tendency of democratizing states comes first from the institutional incapacity to deal with the uprising civil demand and then second from the candidates' utilization of nationalist emotion and prestige strategy in elections (Mansfield & Snyder 1995; 2002; 2005). More specifically, the sequence between Taiwan's election cycle and the aggressive policies is a common hypothesis in many Taiwanese scholars' studies. For example, Wu (2011) claims that the aggressiveness, mainly on the topic of Taiwan's sovereignty, is more likely to take place at the end of election cycle. In other words, it tends to occur with the approach of the next election. On the other hand, when analyzing military conflicts, Gaubatz's (1991) study shows that the aggressiveness tends to occur in the early stage of election cycle, which means the more distant to the next election, the more likely to have a conflict. Both empirical works show that election cycles are an important factor when deciding when to initiate a conflictive behavior. I plan to assess the effect of Taiwanese election cycle and control for the effect of international factors, like cross-strait economic interdependence and the strategic

interactions among the United States, China, and Taiwan at the same time to compare the effect of domestic politics with the international influence in cross-strait relations.

The fourth part is to investigate the influence of some important events in the U.S.-China-Taiwan triangle and cross-strait relations. These events are the end of Cold War at the international level and the changes of Taiwan's leadership at the domestic level. The main research question is: How the change of power structure and leadership change in Taiwan influence state behaviors in the triad. As to power structure, realists have a long tradition in making inference based on the change of polarity and power disparity (Mearsheimer 1990; Organski & Kugler 1980; Waltz 1979). As to the alternation of leadership, on the other hand, some liberal theorists tend to take leaders' ideas as a proxy to assess the priorities in policymaking or the guidelines of foreign behavior (J. Goldstein & Keohane 1993). Both realist and liberal predictions are worth being tested in the case of cross-strait relations. In this dissertation, I only take the change of Taiwan's leadership into analysis because only the change of Taiwan's leadership leads to the possibility for Taiwan to deviate from the "one China" position and the positions of China and the United States on the "one China" policy is consistent so far. Therefore, I plan to create a set of dummy variables based on the date that the change occurred to assess the impact of these political events on the dynamics in the U.S.-China-Taiwan triad and cross-strait relations.

1.3 Organization of This Dissertation

Having laid out the research questions and context of the dissertation in this chapter, the rest chapters are as follows. Chapter 2 presents research method and a summary of main variables. Chapter 3 examines the presence of the U.S. triangular effects on cross-strait relations and explains the significant role of the United States from 1979 to 2012. Chapter 4 explores the

effect of the end of the Cold War and the impact of Taiwan's democratization on the U.S.-China-Taiwan triangle. The impact of Taiwan's democratization is operationalized by the change of leadership in Taiwan. Chapter 5 assesses the average effects of the U.S.-China-Taiwan strategic interactions, economic interdependence across the Taiwan Strait, and the impact of Taiwanese elections on cross-strait relations from 1990 to 2012. The two concepts of interdependence, sensitivity and vulnerability, are both tested in this chapter. Chapter 6 investigates the impact of leadership change in Taiwan on cross-strait relations from 1990 to 2012 and the variance of policy priorities when different Taiwanese leaders are in power. Chapter 7 is a summary of findings and conclusion.

CHAPTER 2. DATA AND METHOD

In this dissertation, statistical analysis is the main research method to find out the effects of the strategic interactions in the U.S.-China-Taiwan triangle, economic interdependence, and Taiwanese domestic on cross-strait relations. I mainly apply the time series analysis to identify the causal mechanisms in the context of time. Based on the availability of data, the scope of time for most variables in this dissertation is from 1990 to 2012, but the state behavior variables have a greater scope of time starting from 1979 to 2012.

This chapter has two sections. In the first section, I will introduce the measurements of all variables, the source of data, and a summary of all variables. In the second section, I will explain my choice to apply the generalized autoregressive conditional heteroscedasticity (GARCH) model in the following chapters.

2.1 Data and Measurement

The dataset of this dissertation includes: (1) international variables including state behaviors in the U.S.-China-Taiwan triangle and trade interdependence between China and

Taiwan; (2) domestic variables like election cycles in Taiwan. Beside the two groups of variable, a series of dummy variables are also created to test for the effect of some important political events like the end of the Cold War and the leadership change in Taiwan.

2.1.1 State Behavior

The interactions among the United States, China, and Taiwan are crucial independent variables for this dissertation, because this dissertation uses the U.S. related behaviors to denote the Cold War legacy and Taiwan and China's behaviors toward each other to denote the Chinese Civil War legacy. In general, states make cost-benefit analysis based on the memory of its own and other states' behavioral patterns, and the same holds true for the three actors in the U.S.-China-Taiwan triangle. The interactions in the triad are defined as dyadic actions in a source-target form, so there are six dyadic behaviors in the source-target form in the U.S.-China-Taiwan triad. This dyadic form for recording events has been widely applied to capture the dynamics in crises or conflicts, and many event databases in this form have been created and have worked well in the field of foreign policy.⁴ The basic assumption to apply event data in foreign policy studies is that an event is not only a result of actions; it is also an international signal with conflictive or cooperative connotations. Following this assumption, it is reasonable to treat the current cross-strait relations as a function of the previous interactions among the United States, China, and Taiwan because all states in the triad make decisions in the environment formed by the signals with conflictive or cooperative connotations in the earlier time.

The state behavior variables used in this dissertation come from the Global Database of Events, Language, and Tone (GDELT), which codes state behaviors in a global scale in a

⁴ By definition, a recorded event has following components: (1) an actor, (2) a target, (3) a time period, (4) an activity and (5) an issue about which the activity resolves (Azar 1975: 1).

“source-target” from 1979 to 2012 (Leetaru & Schrodtt 2013). The GDELT event database is built by an automatic coding software recording events in global news media reporting.⁵ There are two important elements in the work of coding state behaviors. The first is about how to categorize state behaviors. All state behaviors in the GDELT event database are coded by the Conflict and Mediation Event Observations (CAMEO) framework, which codes all aspects of foreign behavior into twenty main categories with subcategories for distinguishing the subtle difference within a main category (Gerner, Abu-Jabr, Schrodtt, & Yilmaz 2002).⁶ All event codes of CAMEO are listed in Appendix A. The second is about how to evaluate a certain foreign behavior. State behaviors have conflictive or cooperative connotations, so Goldstein (1992: 376-77) weights each event code in the WEIS scheme and transformed them into cooperative (above zero) or conflictive (below zero) scores, which is the Goldstein net-cooperation scale. Therefore, each behavior has a positive score of cooperation or a negative score of conflict, and Goldstein further calculated a state’s “net cooperation” score by summing up the total score of cooperative actions (positive) and the total score of hostile actions (negative) in a certain time period to capture the intention of a state at a certain time. In this dissertation, I also use the Goldstein scale to evaluate the level of cooperation for a state toward another state. The relationship between the Goldstein scale and the CAMEO event scheme is also listed in Appendix A.

The unit of analysis is source-target/month in this dissertation. The unit of time is month, so the net cooperation score is calculated on a monthly basis. All state behaviors involve two

⁵ The validity and performance of computer-coding systems have been well examined and confirmed by King and Lowe (2003). The coverage of news source for the GDELT database includes AfricaNews, Agence France Presse, Associated Press Online, Associated Press Worldstream, BBC Monitoring, Christian Science Monitor, Facts on File, Foreign Broadcast Information Service, United Press International, the Washington Post, the New York Times, the Associated Press, Google News, and local domestic sources in English in almost every country. The distribution of news and events from various sources can be found in Leetaru & Schrodtt’s (2013: 2-15) paper.

⁶ There are other categorized frameworks to code state behaviors like World Event/Interaction Survey (WEIS) (McClelland 1999) · Conflict and Peace Database (COPDAB) (Azar 2009) · Integrated Data for Events Analysis (IDEA) (Bond, Bond, Oh, Jenkins, & Taylor 2003).

actors, the initiator (source) and the recipient (target), so there are six state behavior variables in the context of the U.S.-China-Taiwan triangle, Taiwan's "net cooperation" toward China (TC), China's "net cooperation" toward Taiwan (CT), the U.S. "net cooperation" toward China (UC), China's "net cooperation" toward the United States (CU), the U.S. "net cooperation" toward Taiwan (UT), and Taiwan's "net cooperation" toward the United States (TU). The descriptive statistics of all state behavior variables is shown as Table 2.1.

Table 2.1 Descriptive Statistics of State Behavior Variables

Variables	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>	<i>N</i>
TC	200.585	266.571	-285.6 (Mar. 2005)	1380.1 (May, 2008)	402
CT	163.209	250.193	-787.6 (Mar. 1996)	1293.6 (Apr. 2009)	402
CU	435.391	534.390	-281.2 (May, 1999)	2900. (Jan. 2011)	402
TU	98.661	128.376	-127.3 (Jan. 1985)	960.5 (Jan. 2010)	402
UC	443.953	544.513	-437.7 (May, 1999)	3378.6 (Jan. 2011)	402
UT	109.067	140.232	-135.4 (Feb. 1985)	899.7 (Jan. 2010)	402

Source: Leetaru and Schrodt (2013).

For Taiwan's behavior toward China (TC), the most hostile time is March 2005 when the Anti-Secession Law was passed by the National People's Congress of the P.R.C., and the friendliest time is May 2008 when Ma Ying-jeou was inaugurated as the President of Taiwan. For China's behavior toward Taiwan (CT), the most conflictive time is March 1996, the time of the third Taiwan Strait Crisis, and the most cooperative time is April 2009 when the World Health Organization (WHO) invited Taiwan to participate in the World Health Assembly as an observer with the name of "Chinese Taipei." In fact, this invitation was under the consent of China. In Figure 2.1 and Figure 2.2, an uprising trend of cooperation is obvious for both sides of the Taiwan Strait during the Ma period, starting from May 2008.

As to China's behavior toward the United States (CU) and the U.S. behavior toward China (UC), the time points of the maximum and minimum are identical. The most hostile time is May 1999 when the United States accidentally bombed the Chinese embassy in Belgrade, and the friendliest time was January 2011 when Hu Jintao visited the United States. Regarding

Taiwan's behavior toward the United States (TU) and the U.S. behavior toward Taiwan (UT), the time points of the maximum and minimum are almost identical. The most hostile time is January and February 1985 when Taiwan admitted to get involved in assassinating Henry Liu, who was the author of the biography of Chiang Ching-kuo and also a US citizen. The friendliest time is January 2010 when the Obama administration approved an arms sale package worth more than 6 billion dollars to Taiwan.

In the following pages, I will present the visualization of all six state behavior variables (TC, CT, CU, UC, TU, UT) and the monthly growth of the net cooperation score of the six state behaviors (DTC, DCT, DCU, DUC, DTU, and DUT) over time.⁷

⁷ The reason to include the monthly growth of the net cooperation score of state behaviors into analysis is not to violate the assumption of stationarity in the time series analysis. A detailed explanation will be presented in the next section.

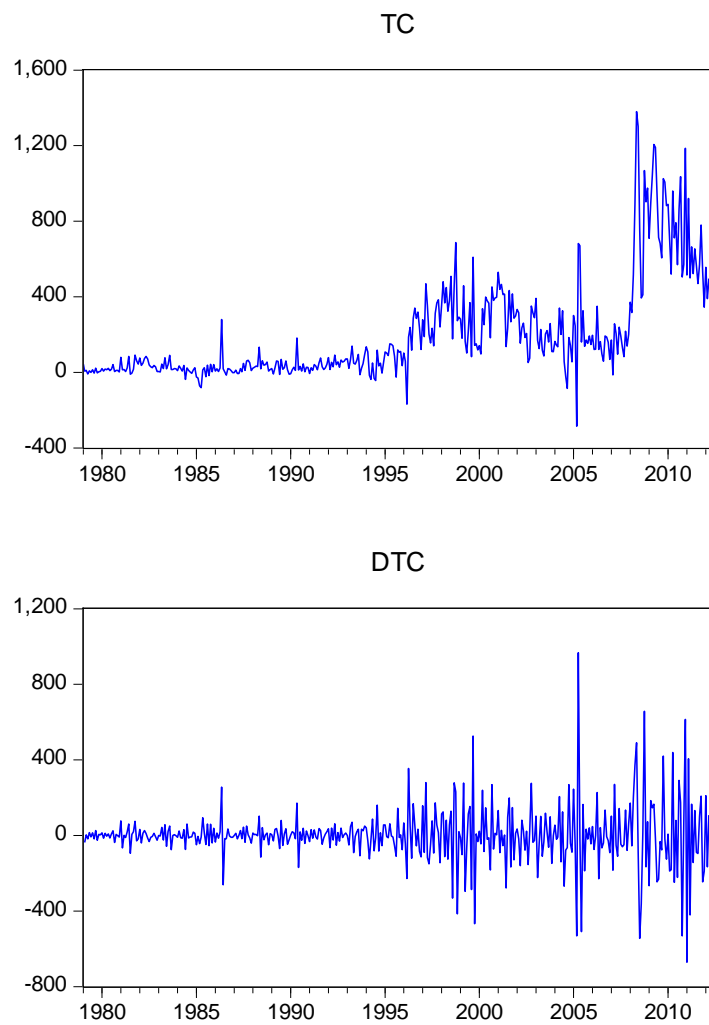


Figure 2.1 Taiwan's Behavior toward China (1979-2012)

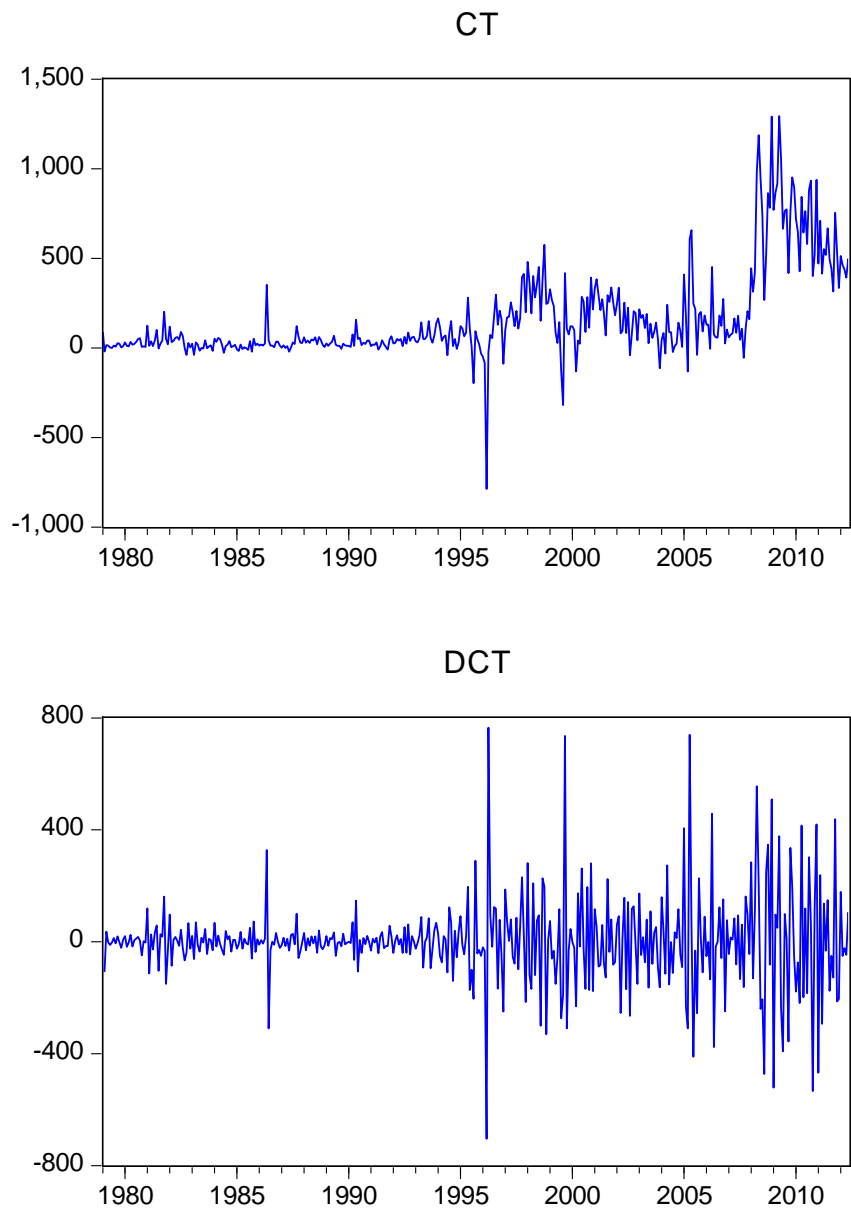


Figure 2.2 China's Behavior toward Taiwan (1979-2012)

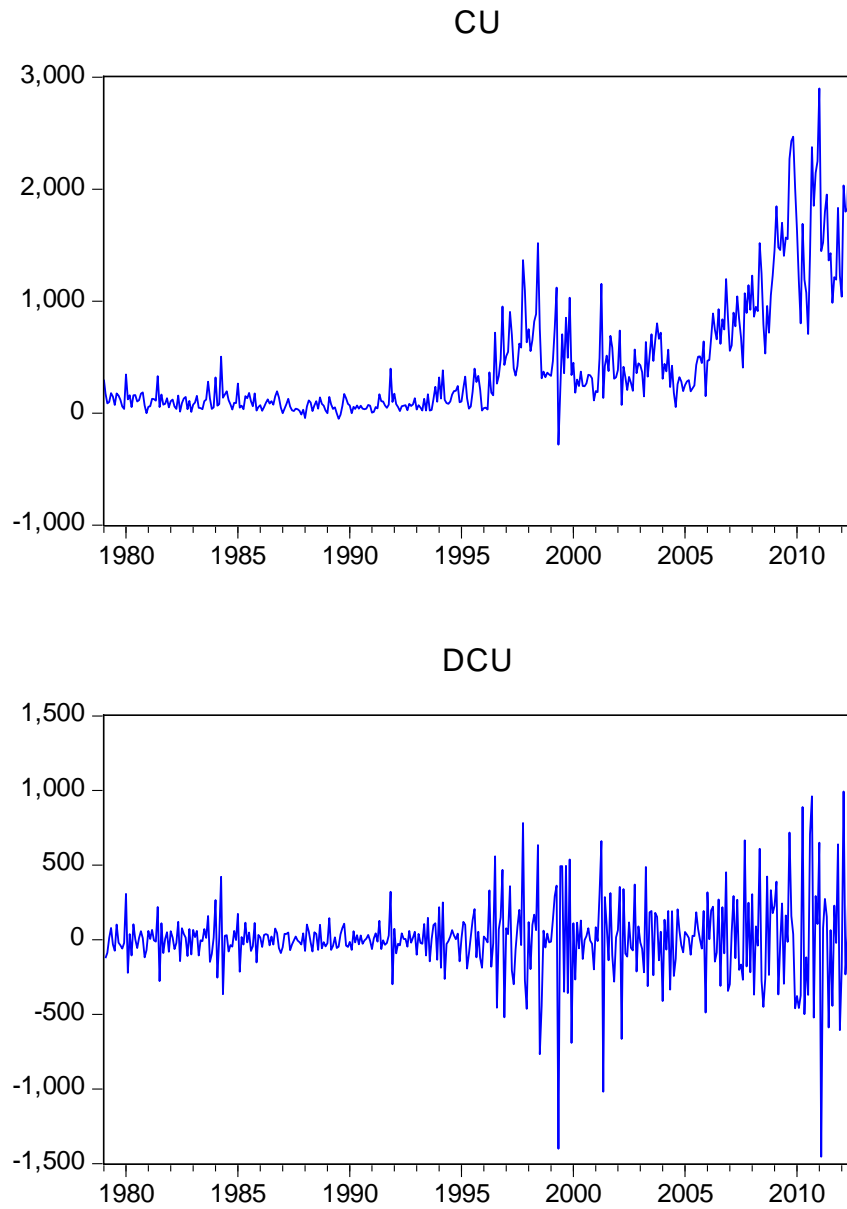


Figure 2.3 China's Behavior toward the United States (1979-2012)

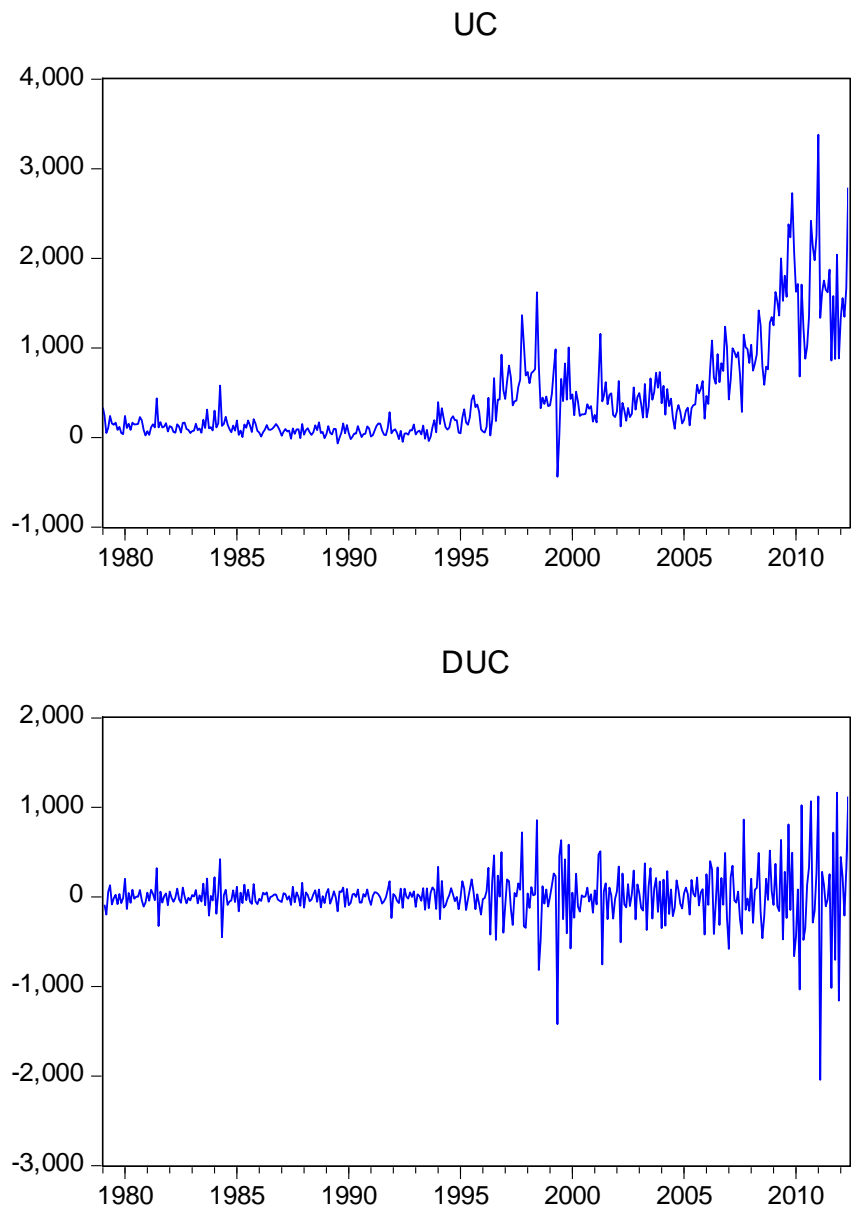


Figure 2.4 The U.S. Behavior toward China (1979-2012)

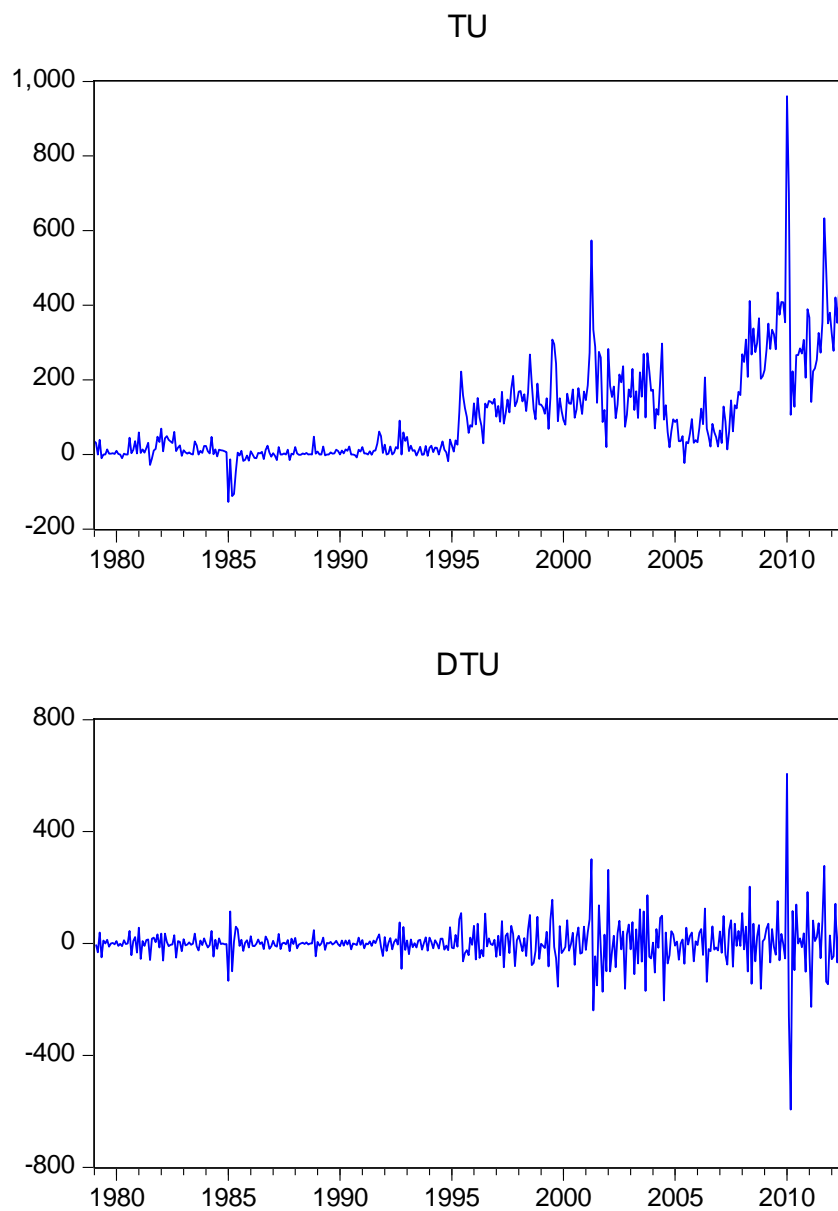


Figure 2.5 Taiwan's Behavior toward the United States (1979-2012)

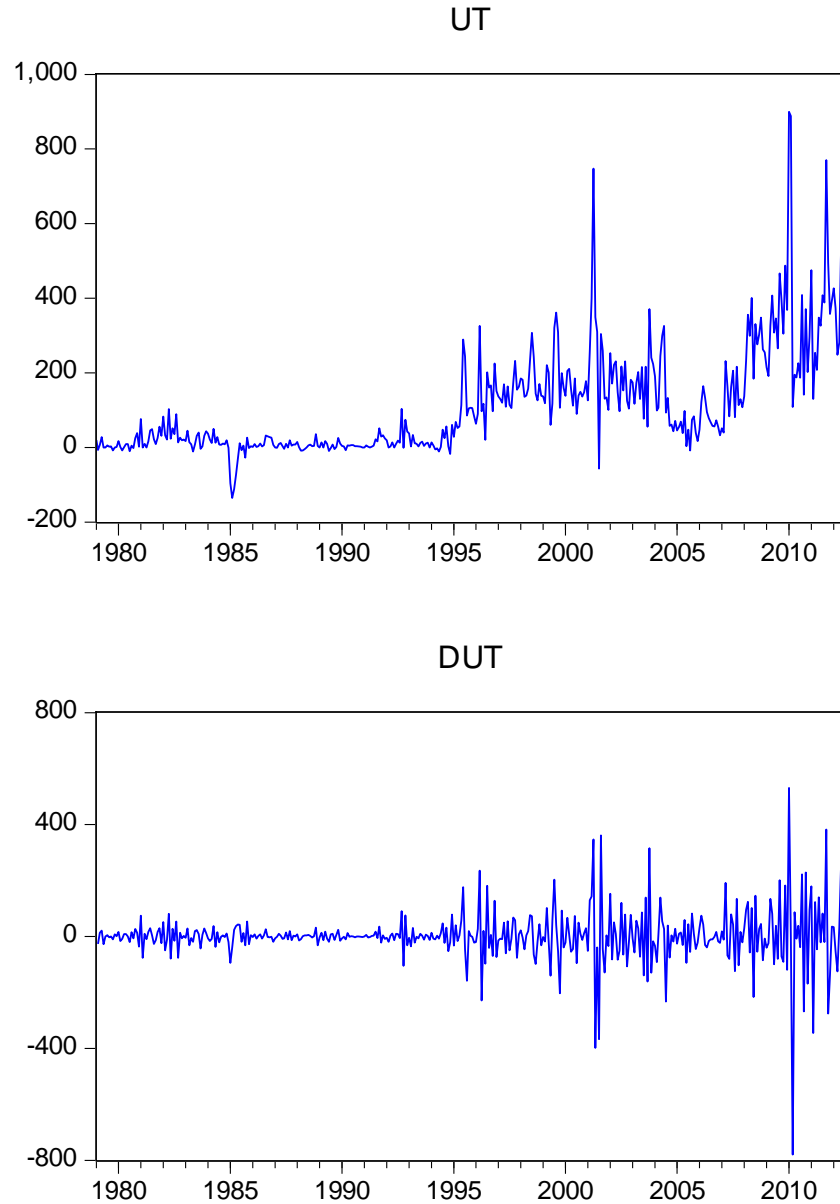


Figure 2.6 The U.S. Behavior toward Taiwan (1979-2012)

2.1.2 Economic Interdependence/Dependence

The pacifying effect of economic interdependence is based on the hypothesis that “the higher the fraction of total output crossing state boundaries, the more costly would be the interruption of such flows” (Mansfield & Pollins 2003: 12). In this case, it is reasonable for this dissertation to measure cross-strait economic interdependence as the portion of trade flow between China and Taiwan represented in the total trade of China (Ctrade) and in the total trade

of Taiwan (Ttrade). In other words, the two variables measures Taiwan and China's dependence on cross-strait trade flow respectively. However, this measurement only captures the concept of sensitivity, which is the mutual effect coming from the interdependent relationship but not the concept of vulnerability, the ability to endure the disruption of the relationship (Keohane & Nye 1977). Therefore, I also construct an indicator of asymmetric dependence as a proxy to capture the concept of vulnerability to test the logic of "the more dependent, the more vulnerable." The asymmetric dependence variable (Dependency) is calculated by subtracting the share of cross-strait trade flow in China's foreign trade (Ctrade) from the share of cross-strait trade flow in Taiwan's foreign trade (Ttrade), so the positive value of the dependence variable means that Taiwan is more dependent on China. In other words, this variable measures the level of Taiwan's dependence on China. The sources related to the cross-strait trade are from the monthly trade statistics of Taiwan and China, and the earliest records start from 1989 and 1990.⁸ The descriptive statistics of trade interdependence variables are listed as Table 2.2. The trends of trade interdependence variables (Ttrade, Ctrade, and Dependency) are shown as Figure 2.7, and the monthly growth of trade interdependence (DTtrade, DCtrade, and DDependency) is shown as Figure 2.8.

Table 2.2 Descriptive Statistics of Trade Interdependence Variables

Variables	Mean	Std. Dev.	Min	Max	N
Ttrade	0.0868	0.0842	0.000528	0.227	282
Ctrade	0.0247	0.0149	0.00192	0.0548	270
Dependency	0.0662	0.0710	-0.00533	0.193	270

Source: Directorate General of Customs Administration (1989-2013) and China Statistical Information and Consultancy Service Centre (1992).

⁸ See Directorate General of Customs Administration (1989-2013) and China Statistical Information and Consultancy Service Centre (1992).

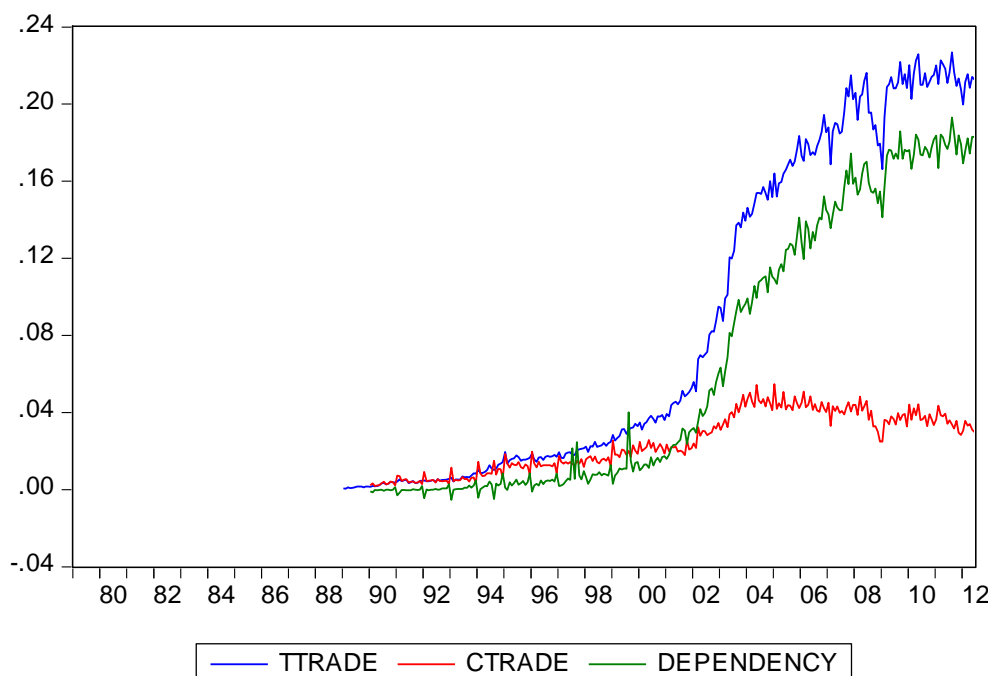


Figure 2.7 The Trade Interdependence between Taiwan and China (1989-2012)

As shown in Figure 2.7, the level of economic interdependence crossing the Strait grows asymmetrically and Taiwan is in fact more dependent on the cross-strait trade flow. The cross-strait trade flow keeps lower than 4% in China's foreign trade amount. More importantly, Taiwan's dependence on the cross-strait trade flow grows rapidly, from 4% to 20%, when the Democratic Progressive Party (DPP) was in power, from 2000 to 2008.

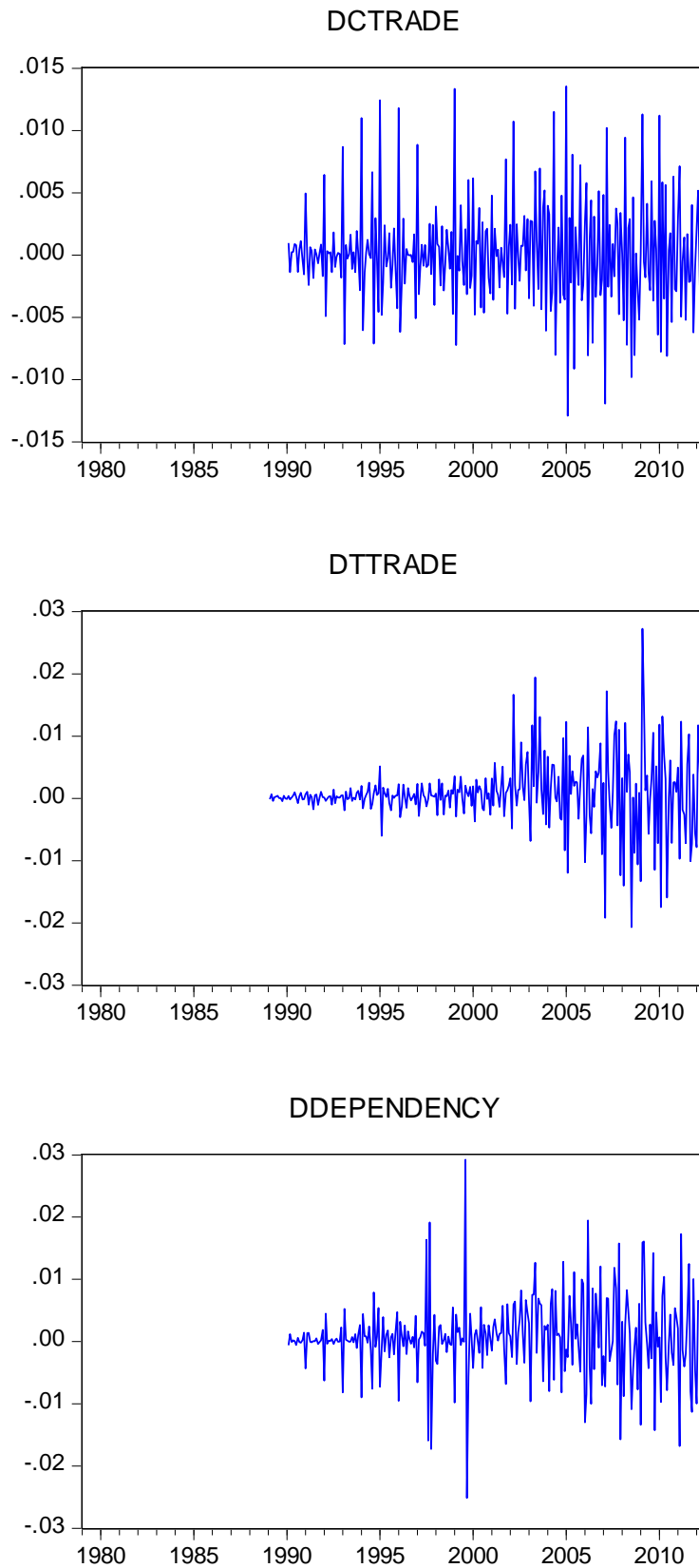


Figure 2.8 Monthly Growth of Trade Interdependence (1989-2012)

2.1.3 Election Cycle

In this dissertation, I take two Taiwanese election cycles to represent the effect of Taiwan's direct election, presidential elections and parliamentary elections (both the Legislative Yuan elections and the National Assembly elections) after 1990. Thus, there are two election variables (Election (Pres.) and Election (Parl.)), and each is measured by how close a certain time point is to the next election. For example, about the presidential election variable, since the first direct presidential election was held in March 1996, the observation of March 1996 will be coded as 0. For the same reason, February 1996 will be coded as 1 because after one month, the election will be held. April 1996 will be coded as 47 because the next presidential election will come after 4 years. In general, the value of these variables decreases with the approach of the next election. After 1990, there are five presidential elections in Taiwan, in 1996, 2000, 2004, 2008, 2012.⁹ Regarding parliamentary elections, this dissertation includes the 1991 and 1996 National Assembly elections and the Legislative Yuan elections in 1992, 1995, 1998, 2001, 2004, 2008, and 2012.¹⁰

2.1.4 Dummy Variables for Important Political Events

There are two types of dummy variable in this dissertation. The first is to distinguish the time before or after the Cold War, and the second is to distinguish the periods of Taiwan's presidents. For the first one, the selection about the date to distinguish the Cold War period and the post-Cold War era needs a further consideration. The idea to treat the end of the Cold War as a breakpoint is to see whether the loss of common enemy for the United States and China

⁹ Taiwan's presidential elections are usually held in March, but, in 2012, the presidential election was held in January in order to combine with the 2012 Legislative Yuan election.

¹⁰ The 1991 National Assembly election was held in December and the 1996 National Assembly election was in March. On the other hand, the Legislative Yuan elections were usually held in December, but the 2008 and 2012 election were in January.

changes their bilateral relationship and then furthers to impact cross-strait relations or not. Since the end of the Cold War is a process rather than a sudden change, several potential dates can be considered and I take June 1989 as the date to distinguish the Cold War era and the post-Cold War era. A further discussion goes as follows.

The first date to be considered is the official end of the Soviet Union, December 1991. However, many important events that also need to be considered had occurred before December 1991. In 1989, some member states of the Warsaw Pact had started to negotiate with the opposition and then held general elections, like Poland and Hungary, because the military support from the Soviet Union had been withdrawn. The Berlin Wall fell in November 1989, and the unification of Germany occurred in October 1990. In short, starting from 1989, the strategic role of the Soviet Union in the Cold War was declining. Thus, it is obvious that the date in 1989 or 1990 are more appropriate to capture the end of the Soviet polarity, and the date of the Soviet dissolution in 1991 is too late.

The second is the date of the Malta Summit, December 1989, because after the summit the United States and the Soviet Union jointly declared the end of the Cold War. This date was a symbol for the end of the enduring rivalry between the two countries, but the real test of the U.S.-China relationship and the improvement of the Soviet-China relationship had occurred earlier. Therefore, it is necessary to review the time points of earlier symbolic events to capture the changing point of the U.S.-China's strategic nature. In May 1989, Gorbachev visited Beijing and declared the normalization of the Soviet-China relations with Deng Xiaoping. This event represents that the constant hostility between China and the Soviet Union is no longer a reality. On the other hand, the Tiananmen Square protest started in April 1989 and was suppressed by the Chinese government in June 1989. Since then, a series of sanction from the Western

countries including the United States caused a significant loss for the Chinese economy. This is the first time that the United States had to face the contradictory interests from both the moral and realistic aspects in the U.S.-China relations after the anti-Soviet cooperation between the United States and China was established (Clark 2011: 2-3). More importantly, the changing role of the Soviet Union from a source of threat to a normal country also led both China and the United States to reflect the potential contradiction in their bilateral relationship. Since my interest is to test the effect of the end of the Cold War on the U.S.-China relationship and cross-strait relations, it is reasonable to select a time which indicates both the change of the U.S-Soviet relationship and the challenge to the U.S.-China relationship. In this case, June 1989 is a reasonable choice because it is the beginning of the normalization of the Soviet-China relations and a tough test for the existing cooperation between the United States and China. More importantly, at the same time point, the Soviet Union also started to step on its process toward the dissolution in 1991. In short, June 1989 is the date to distinguish the Cold War era and the post-Cold War era in this dissertation.

The second part of dummy variable is about Taiwan's leadership change. There are four presidents before 2012, Chiang Ching-kuo (from January 1991 to December 1987), Lee Teng-hui (from January 1988 to May 2000), Chen Shui-bian (from June 2000 to May 2008), Ma Ying-jeou (from June 2008 till now). Thus, four dummy variable (Chiang, Lee, Chen, Ma) are created to represent their presidencies.

2.2 Methodology

In this dissertation, the main variables are time series variables, state behavior variables and economic interdependence variables. All state behavior variables are from the GDELT event database and represent the monthly net cooperation score of the six state behaviors in the U.S.-

China-Taiwan triangle from 1979 to 2012 (the sum of the score of cooperation and the score of conflict in a month). The six time series state behavior variables are: Taiwan's behavior toward China (TC), China's behavior toward Taiwan (CT), China's behavior toward the United States (CU), The U.S. behavior toward China (UC), Taiwan's behavior toward the United States (TU), and the U.S. behavior toward Taiwan (UT). On the other hand, economic interdependence variables include the share of the cross-strait trade flow in Taiwan's total trade amount (Ttrade) and in China's total trade amount (Ctrade) on a monthly basis, and the Taiwan's dependence on China (Dependency) on a monthly basis. Since the main variables in this dissertation are time series variables, several methodological issues have to be discussed before making a decision about which model to be applied.

In general, time series variables usually have these following characteristics that violate the basic assumptions of ordinary least squares (OLS) method, which are nonstationarity, serial correlation, and autoregressive conditional heteroskedasticity (ARCH). In the following pages, I will examine the three characteristics for all state behavior variables from 1979 to 2012, and then explain the reason to apply an ARIMA(1,1,1)-GARCH(1,1) model in Chapter 3. In the following chapters, whenever the time period is changed, like the situation in Chapter 5, all tests in this chapter has to be redone to ensure that the model is not biased by the three problems.¹¹

The first is about whether a variable, or a series, is stationary or not. Stationarity is the fundamental characteristics in the time series analysis because it implies that a finite variance can be expected in a series when responding to a shock. If a random shock to a variable only has an impact for a short time and the impact reverses to the mean level eventually, we can define that this variable is stationary. In this light, a nonstationary variable implies that the memory of a

¹¹ The time period in Chapter 5 is from 1990 to 2012, because Chapter 5 includes trade interdependence into analysis and the availability of the trade data starts from 1990.

shock never dies out, and this characteristic can lead to biased inference easily. Since Nelson and Plosser's (1982) study indicates that most economic time series variables are nonstationary, it is necessary to check the stationarity of all state behavior variables in this dissertation.

To ensure the stationarity for further causal inference, I perform the augmented Dickey-Fuller (ADF) unit root test for all state behavior variables. The presence of a unit root implies that the variable is not stationary. When a variable is not stationary, the common strategy is to transform the variable into a differenced variable. In most situations, time series variables are difference-stationary. In this dissertation, I take a first-difference strategy, which is to transform a nonstationary series into a series describing the changes from the last month to this month.¹² The results of the ADF test for all state behavior variables and all variables after first differencing from 1979 to 2012 are shown as Table 2.3.

Table 2.3 Results of the ADF Test for State Behavior Variables (1979-2012)

Variable	ADF	ADF with trend	ADF (first difference)	ADF with trend (first difference)
TC	-1.715924 (5)	-2.813270 (5)	-15.58117 (4)**	-15.56226 (4)**
CT	-2.107773 (5)	-3.126734 (5)	-13.83423 (4)**	-13.81887 (4)**
CU	0.942375 (16)	-0.943515 (16)	-8.399412 (15)**	-8.650045 (15)**
UC	0.520570 (15)	-1.200265 (15)	-8.433531 (14)**	-8.607260 (14)**
TU	-0.862674 (14)	-4.195875 (4)**	-7.513963 (13)**	-7.541378 (13)**
UT	-1.132347 (10)	-2.841503 (10)	-10.05621 (9)**	-10.06633 (9)**

Note: 1. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. 2. The optimal lag length is in the parentheses and is selected based on the Akaike information criteria (AIC). 3. The null hypothesis is that the variable is not stationary. 4. The test is performed by EViews (ver. 7.2).

As Table 2.3 shows, all state behavior variables are not stationary when not including a trend because all variables fail to reject the null hypothesis of having a unit root. Even when considering the possibility of trend, most variables still fail reject the null hypothesis. In other words, both results in the first two columns suggest almost all state behavior variables are not

¹² The first difference strategy is to transform the variable from describing the value on time t to describing the change of value from t to $t+1$. A good example is like that when GDP is not stationary, the growth of GDP, which is to subtract the GDP at time t from the GDP at time $t+1$, may be stationary in most situations.

stationary, which means that with the increase of time, the disturbance does not converge to the long-term mean and works like a random walk. The policy implication of the nonstationarity in all state behavior variables in the US-China-Taiwan triad is that all policy innovations or shocks have a long-term effect and the memory of earlier actions is difficult to die out for the decision-makers.

For ensuring the stationarity in the statistical analysis, all state behavior variables are transformed to first-differenced variables that measure the monthly change of the net cooperation score of the six state behavior variables. The results in the last two columns of Table 2.3 show that all variables after first differencing are stationary. This means that a shock only has a short term effect on the monthly change of state behaviors, and the impact declines toward the mean level with the increase of time. However, Table 2.3 only shows the results of the ADF test for the state behavior variables from 1979 to 2012, which is the time frame of the model in Chapter 3. In the following chapters, the ADF test on time series variables has to be performed again when the time period is changed, like the models in chapter 5, to ensure that the variables are stationary within a certain period.

The second problem is about serial correlation, which means that the error term in a regression model depends on its past. The presence of serial correlation in a time series variable can be detected by the Ljung–Box Q test, and the results of all state behavior variables from 1979 to 2012 are listed as Table 2.4. Since the results of the ADF test have shown that all state behavior variables are not stationary and need to be differenced, I also include the first-differenced state behavior variables (DTC, DCT, DCU, DUC, DTU, and DUT) to test for the presence of serial correlation.

Table 2.4 Results of the Ljung–Box Test for State Behavior Variables (1979-2012)

Variable	Lags(3)	Lags(6)	Lags(12)	Lags(18)
TC	777.07**	1491.1**	2731.8**	3625.5**
CT	703.78**	1320.6**	2336.0**	2983.2**
CU	830.31**	1510.1**	2736.6**	3904.2**
UC	793.77**	1468.2**	2672.3**	3788.8**
TU	699.89**	1277.2**	2236.9**	2998.1**
UT	588.33**	1081.3**	1880.5**	2528.7**
DTC	57.240**	75.594**	86.956**	97.766**
DCT	64.716**	66.951**	80.518**	88.578**
DCU	53.667**	55.528**	67.726**	70.164**
DUC	79.073**	81.983**	97.704**	113.25**
DTU	44.159**	53.238**	66.448**	84.609**
DUT	61.198**	62.878**	82.322**	93.780**

Note: 1. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. 2. The null hypothesis is that there is no serial correlation at a certain lag. 3. This table reports the Ljung–Box Q statistics at a certain lag. 4. The test is performed by STATA (ver. 12).

The results in Table 2.4 indicate that all state behavior variables suffer for the problem of serial correlation, because all variables reject the null hypothesis of no serial correlation in different time periods at 1% level. All variables after differencing also show the presence of serial correlation at 1% level. In short, both the original and differenced variables have a characteristic that their current value is a function of history, which implies that one actor's behavior is constrained by its own history of behavior. Therefore, the policymaking in the U.S.-China-Taiwan triangle is often made in the context of time and the legacy of previous actions. In general, the serial correlation problem can be solved by including lagged dependent variables, the AR terms, or lagged error terms, the MA terms, as the right-hand-side variables. More importantly, since the results of the ADF test show that all state behavior variables have the non-stationary problem, it is necessary to deal with the two problems at the same time. Thus, I apply the autoregressive integrated moving-average (ARIMA) model to control the problems of autocorrelation and non-stationarity, more specifically an ARIMA(1,1,1) model. The model includes three components, which are the first-order autocorrelation, AR (1), the first-order moving-average, MA (1), and first-differenced variables I(1).

The third issue is heteroskedasticity. In the time series analysis, heteroscedasticity means that the variance of the error term is not the same across time periods. Thus, the Lagrange Multiplier (LM) test should be applied first to detect the presence of heteroskedasticity. The results of the LM test for the state behavior variables are shown as Table 2.5.

Table 2.5 Results of the LM test for State Behavior Variables (1979-2012)

Variable	Lags(3)	Lags(6)	Lags(12)	Lags(18)
TC	47.963**	54.353**	62.630**	62.630**
CT	30.848**	44.182**	53.287**	54.035**
CU	30.136**	50.928**	73.285**	88.425**
UC	58.922**	88.567**	144.927**	155.129**
TU	54.677**	65.819**	69.834**	74.649**
UT	66.201**	70.326**	78.868**	99.293**
DTC	93.240**	110.864**	115.474**	117.488**
DCT	48.634**	50.156**	54.495**	55.117**
DCU	27.658**	59.484**	76.738**	95.606**
DUC	38.110**	64.572**	92.336**	100.829**
DTU	78.319**	106.035**	111.364**	118.129**
DUT	45.086**	48.863**	52.612**	63.429**

Note: 1. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. 2. This table reports Engle's LM test statistic. 3. The null hypothesis is that the variable has no ARCH effect. 4. The test is performed by STATA (ver. 12).

It is obvious that the original state behavior variables and the transformed variables after differencing both have the problem of heteroskedasticity. All variables reject the null hypothesis of no ARCH effect at the 3rd, 6th, 12th, and 18th lags, which implies that the variance or the volatility of state behaviors in the US-China-Taiwan triad changes over time. This is not hard to image because many structural changes have occurred in the time period from 1979 to 2012, for example the end of the Cold War and the change of regime type and leadership in Taiwan. Therefore, states may respond differently because of the change of international structure, regime type, and leadership.

When the presence of heteroskedasticity is evident, the autoregressive conditional heteroskedasticity (ARCH) model or the Generalized autoregressive conditional heteroskedasticity (GARCH) should be applied to control the inconstant variance of errors over

time (Bollerslev 1986; Engle 1982). The basic concept of the GARCH model is to assume that the current variance is a function of the variance of the previous error term, the ARCH term, and the previous variance, the GARCH term.¹³ In other words, besides the conditional mean equation, the ARCH or GARCH models also include the conditional variance equation to model the relationship between the current variance and its past. In the following chapters, I plan to apply the GARCH(1,1) model to control the problem of heteroskedasticity, which means to include the variance of the last error term, ARCH(1), and the last variance, GARCH(1) in the conditional variance equation.

In sum, I plan to apply an ARIMA(1,1,1)-GARCH(1,1) model to deal with the three problems violating the OLS assumptions and investigate the causalities among the six state behavior variables in Chapter 3. In the following chapters, these procedures to test serial correlation, stationarity, and heteroskedasticity will be the necessary process to determine which model should be applied whenever the time period is modified.

CHAPTER 3. THE SPECIAL ROLE OF THE UNITED STATES

Is it necessary to take the U.S. influence into account when analyzing cross-strait relations? What is the relationship between cross-strait relations and the U.S.-China-Taiwan triangle? The goal of this chapter is to answer the two questions with both historical and statistical analyses. In fact, the two questions are both related to how important the U.S. influence is in the Taiwan Strait. The logic for this chapter is simple. If the U.S. influence is significant in cross-strait relations, then cross-strait relations are a function of the U.S. influence. If the U.S. influence is not significant, then cross-strait relations are pure bilateral affairs between Taiwan and China. The result in this chapter will also have a great impact on the

¹³ If the order of the ARCH term is too high in a model, a GARCH model is suggested to mitigate the difficulty of estimation and reduce the necessary number of the ARCH terms in the conditional variance equation.

research design in the following chapter. The significance of the U.S. influence indicates that it is necessary to include the U.S.-China-Taiwan strategic interactions when analyzing cross-strait relations. On the other hand, the insignificance of the U.S. influence indicates that it is possible to have a more parsimonious model of cross-strait relations because the U.S. related behaviors can be ignored. In sum, to figure out the U.S. influence is an important step for further studies.

From a perspective of history, the formation of the current cross-strait relations is a jointly product of the Chinese Civil War and the Cold War and the Taiwan issue is entangled with the “one China” sovereign dispute and the U.S.-Taiwan security cooperation. For example, both the Chinese Communist Party (CCP) and the fundamentalists in the KMT still claim that the “one China” position is the basic common ground for the future development of cross-strait relations. On the other hand, the United States has play a role of the conflict-preventer in the Taiwan Strait for decades, starting from an official ally of Taiwan in the Cold War era and then a powerful conflict-preventer with strategic ambiguity after 1979. However, how great the U.S. influence is and how the United States influences Taiwan and China’s behaviors to each other are seldom examined empirically. Thus, this chapter also conducts a statistical analysis to test the presence of the U.S. influence in cross-strait relations and figure out the pattern of the U.S influence on Taiwan and China’s behaviors toward each other.

As to the research design in the following chapters, the result related to the significance of the U.S. influence in cross-strait relations concerns to a choice to make causal inference based on a two-player game approach or a three-player game approach including the U.S. behaviors. For pursuing parsimony, it is necessary to ensure not to include too many variables. The three-player approach means that all state behaviors in the U.S.-China-Taiwan triangle have to be included. The two-player approach means that when analyzing Taiwan’s behavior toward China,

it is only necessary to consider China's behavior to Taiwan, and when analyzing China's behavior toward Taiwan, it is only necessary to consider Taiwan's behavior to China. Comparing both approaches, it is clear the three-player approach is more comprehensive, but we still need statistical analysis to support the choice.

This chapter has three sections. In the first section, a summary of the relevant literature about the two-player-game approach and the three-player-game approach will be presented. In the second section, I will explain the formation of the U.S.-China-Taiwan triangle from a historical aspect. In the third section, I will present the result of the statistical analysis based on the GDELT event database from 1979 to 2012 to illustrate the influence of the United States on cross-strait relations after 1979.

3.1 Literature Review

Since the main question of this chapter is to examine the necessity to include the U.S. influence in the analysis of cross-strait relations, this section will review the relevant literature focusing on the difference between the two-player game approach and the three-player game approach.

3.1.1 Three-Player Game Approach

The three-player game approach emphasizes the presence of the significant third party. For analyzing the role of the third party, two questions must be asked. First, how to define a three-actor network or a strategic triangle? Second, how do states, especially the significant third party, influence each other's behavior in a triangle?

Regarding the first question, what is the definition of a strategic triangle or a three-actor network in which actors' behaviors can influence each other? In the literature, there are three principles coming from two origins, game theory and the traditional rules of balance of power

(Dittmer 1981: 489-90; J. S. Goldstein & Freeman 1990: 33). The first principle is the rational assumption: network actors are rational and egoistic players. The second principle is triangularity: the level of amity or hostility of a bilateral relationship is a function of the two actors' relationships with the third. Basically, scholars taking this approach treat a strategic triangle, or a three-player game, as a set of two-player games and the result of one two-player game could influence the payoff in another bilateral games. For example, in the U.S.-China-Taiwan triangle, the United States may ally with Taiwan when both Taiwan and the United States are in a conflictive relationship with China. In this situation, the U.S. action to Taiwan is a function of Taiwan' relationship with China and the U.S. relationship with China. As an Arabic proverb goes, the enemy of my enemy is my friend. The principle of triangularity is the key concept that will be examined by the statistical analysis in this chapter. The third basic principle is the balance of power assumption. Based on Kaplan's (1957: 686) rules of balance of power, all states oppose any single state in a position of predominance within the system. Thus, both China and the United States tend to prevent each other's total domination over Taiwan in the U.S.-China-Taiwan triangle. The principle of balance of power is main concept that will be examined by the history after World War Two in this chapter.

This chapter mainly relies on the second principle, the presence of triangular causality, to examine whether the United States plays a role in cross-strait relations and whether the United States, China, and Taiwan qualify to be a strategic triangle. More importantly, the presence of the U.S. triangularity also indicates the validity of the three-player game approach in analyzing cross-strait relations. Otherwise, if the U.S. triangularity does not present, cross-strait relations are only pure bilateral affairs between China and Taiwan and the U.S.-China-Taiwan triangle may be only a set of unconnected bilateral relationships.

Regarding the second question, how do states influence each other's behaviors in a triangle? The cooperative game literature provides the basic framework and hypotheses to answer the question (Axelrod 1984). The fundamental question in a three-player cooperative game is: How does cooperation initiate and evolve in an iterated interaction with three actors? Scholars taking the three-player game approach argue that tit-for-tat (reciprocity) or coercive cooperation (bullying) are the most common patterns and both patterns can work in the bilateral or triangular ways. More importantly, triangularity can also work in both direct and indirect forms. The main difference between indirect and direct triangularity is that indirect triangularity is not a response to a direct request or proposal from the third party, but a self-adjustment to situational changes in the triangle. Based on the cooperative theory and the forms of triangularity, the four behavioral patterns can be specified as follows.

First, based on Axelrod's (1984: 27-54) cooperation theory, the reciprocity or tit-for-tat strategy is the basic logic of state behavior when facing the anarchic nature at the international level. A good example of the tit-for-tat strategy is Jervis's (1976: 58-116) spiral model or security dilemma. That is, hostility leads to a hostile response and compromise leads to a compromising response.

Second, cooperation can be a result of coercion or compliance as Krasner's (1976; 1991) emphasis on the role of power gap in international cooperation. Again, Jervis' (1976) deterrence model works as a good example for coercive cooperation (bullying). That is, hostility leads to a compromising response and compromise leads to a hostile response. In other words, the core mechanism of coercive cooperation is a fear of bullying or a sense of insecurity in this pattern.

Third, the concept of direct triangularity can also be operationalized in two forms, triangular tit-for-tat (reciprocity) and triangularly coercive cooperation (bullying), and both are

initiated directly by the behaviors of the third party. For example, the United States may request Taiwan to cooperate with China through a threat of stopping arms sale (coercive cooperation) or through a promise of arms sales (tit-for-tat). Empirical studies have shown that the direct triangularity initiated by the significant third party exists in many cases of enduring rivalry and regional conflict.¹⁴

Fourth, as to indirect triangularity, it works in two forms, triangular calculation of utility and triangular self-adjustment. Both are triggered indirectly by the behaviors related to the third party. The main difference between indirect and direct triangularity is that indirect triangularity is not a response to a direct request or proposal from the third party, but a self-adjustment to situational changes in the triangle. In an interconnected triangular relationship, the result of each bilateral game influences the pay-off in another bilateral games. Therefore, in theory, any behavior in an interconnected triad may have indirect triangular effects, and empirical studies also support the presence of indirect triangularity.¹⁵

Regarding triangular calculation of utility, the example is that when the United States and China engage with each other, Taiwan has an option either to stand tough toward China to win the U.S. support or to stay neutral to avoid China's criticism or attack. In sum, for Taiwan, the triangular calculation of utility is a response to the U.S.-China relationship, and for China, it is a response to the U.S.-Taiwan relationship.

As to triangular self-adjustment, the example is that if Taiwan decides to totally cooperate with China, then Taiwan may have to table the U.S. proposal of further cooperation in order to

¹⁴ For example, the U.S. behavior toward the Soviet Union can influence the Soviet behavior toward China in the Cold War, see J. S. Goldstein and Freeman (1990: 79-84) . For the NATO's coercively cooperative pattern on the Serb force in the Bosnia conflict, see J. S. Goldstein and Pevehouse (1997); Pevehouse and Goldstein (1999). For the case of the Middle East conflicts, see J. S. Goldstein, Pevehouse, Gerner, and Telhami (2001). As to public opinion in the Israeli-Palestinian conflict with the U.S. intervention, see Brandt, Colaresi, and Freeman (2008).

¹⁵ In Goldstein and Freeman's (1990) empirical study about the U.S.-U.S.S.R-China triangle, the triangular calculation of utility caused by the U.S. behaviors is evident in the interactions between the Soviet Union and China.

align with the decision to cooperate with China. In short, for Taiwan, the triangular self-adjustment is an alignment between its policies toward China and the United States, and, for China, it is an alignment between its policies toward the United States and Taiwan.

For efficiently investigating the patterns of triangularity and reciprocity, event data with Goldstein's (1992) net cooperation scale is widely applied in the cooperative game approach. Surprisingly, the efforts and attempts to analyze the U.S.-China-Taiwan triad in the cooperative game approach with an analysis based on an event database is still rare and limited. Thus, one of the empirical contribution for this dissertation is to analyze the U.S. triangularity in cross-strait relations by taking the cooperative game approach.

Unlike the cooperative game approach, the triangular structure approach provides a structural perspective about state behaviors in the triad. In general, the research question of this approach is: Which position in a certain triangular structure is the most favorable that all actors tend to sit in order to maintain or enhance their interests? Based on Dittmer's classification (1981), there are four types of triangular structure: (1) *ménage à trois* (three friendly relationships); (2) stable marriage (two hostile relationships and one friendly relationship); (3) romantic triangle (two friendly relationships and one hostile relationship); (4) unit veto (three hostile relationships). The four types of triangular structure are shown as Figure 3.1. It is obvious that the positive-or-negative dynamics of bilateral relationships in the triad is the precondition to determine the type or structure of a triangle in this approach.

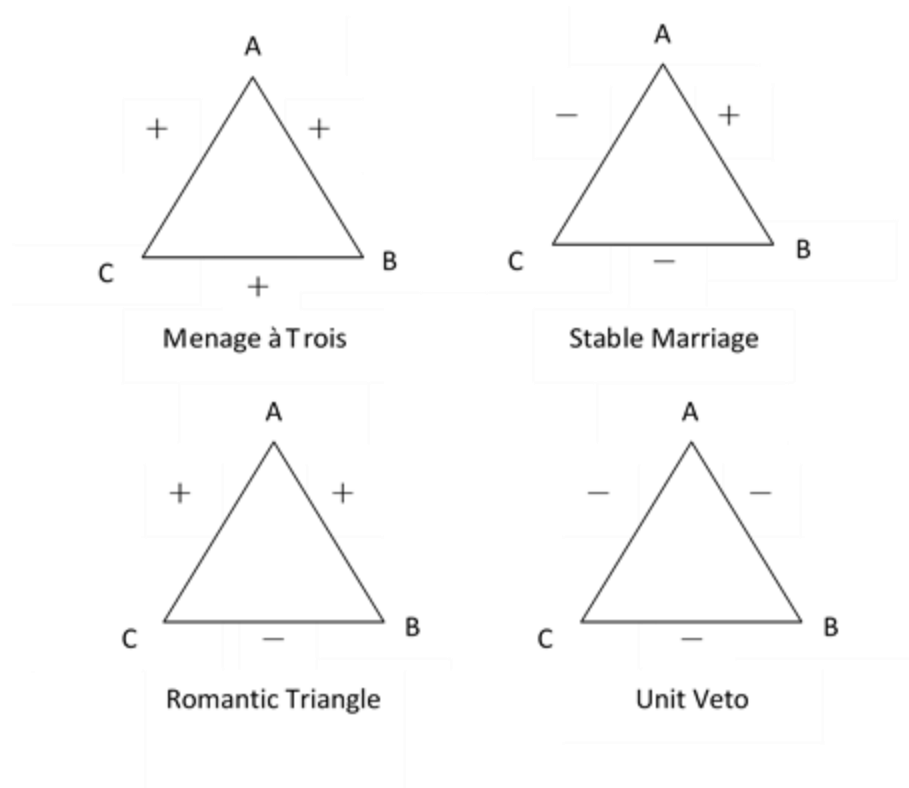


Figure 3.1 Dittmer's Strategic Triangle Typology

As to the most favorable position, based on the egoist calculation of utility, both Dittmer (2011) and Wu (2011) suggest that the pivot position in a "romantic triangle" is the most favorable position that all actors tend to be.¹⁶ The pivot can enjoy the positive relationships from the rest of other two actors, while does not need to worry too much about losing this superiority, because the other two actors are hostile to each other. In this case, the ultimate behavioral logic is that all actors tend to do their best to form a romantic triangle in which they sit in the position of pivot.¹⁷

Comparing the triangular structure and the cooperative game approach, the cooperative game approach with the analysis of event data has a great advantage in revealing the triangular

¹⁶ The position is where actor A sits in the romantic triangle in Figure 3.1.

¹⁷ Empirical studies taking this approach based on the historical analysis assert that America has been in the pivot position and played a role of balancer since the 1970s. In this case, the strategy of "dual deterrence" between Taiwan and China is a rational choice to serve for the best interest for America (Bush 2005; Dittmer 2005; Wu 2000).

causality and influential patterns (tit-for-tat or coercive cooperation; direct or indirect triangularity). First, the estimation of a bilateral relationship in the cooperative game approach with event data is more accurate and objective. Although the triangular structure approach also depends heavily on the positive-or-negative dynamics of bilateral relationships, the standard to evaluate a relationship is absent and subjective. Moreover, the positive-or-negative dynamics for the triangular structure approach only has two dimensions, positive or negative, which is hard to capture and compare the subtle changes in a shifting dynamics. With the development of the scaling system for event data, the cooperative game approach has a more objective and detailed standard to assess the impact caused by the change of relationships in a triad.

Second, the unit-of-analysis in the cooperative game approach makes the causal chain more clear than the strategic triangle approach. In reality, a bilateral relationship consists of two behaviors with opposite directions, so the cooperative game approach records state behaviors in a form of source-target as the unit-of-analysis. For example, the China-Taiwan bilateral relations are in fact the sum of Taiwan's behavior toward China and China's behavior toward Taiwan. In most situations, the triangular structure approach does not consider the difference within a bilateral relationship and treats a bilateral relationship as a whole.

Third, to identify the structure or the type of a triangle, which researchers taking the triangular structure approach usually do first, is not a necessary step to analyze the presence of triangularity. In fact, the typology of triangular structure is only a description of current structure that helps people easily grasp the whole picture of a triangular network, but it does not explain much about how and in what way the triangular structure constrains actors' behaviors in the triad. On the other hand, the cooperative game approach goes beyond depicting what the current

structure is and helps specify the causal mechanisms of how earlier interactions influence current state behaviors by employing the time series statistical analysis with event databases.

Based on these three reasons, I take the cooperative game approach as the main approach to formulate hypotheses and test the presence of triangularity in the statistical analyses of this chapter.

3.1.2 Two-Player Game Approach

The two-player game approach basically treats cross-strait relations as an iterated bilateral game between Taiwan and China only. In the studies taking this approach, three common factors are often emphasized, which are the assessment of the adversary's preference, the gap of capability, and institutional designs.

First of all, in a traditional two-player game, the assessment to the other actor's preferences is a crucial factor that influence actors' strategies or behaviors. Due to the legacy of the Chinese Civil War, Lo and Lin (1995) believe that cross-strait relations are a bargaining game between China and Taiwan on a spectrum of sovereignty and security, because the two issues always play a crucial role in cross-strait relations. Their work finds that in fact China's behavior toward Taiwan derives from its assessment on Taiwan's preferences and Taiwan's behavior toward China also derives from its assessment on China's preferences, not solely from an objective evaluation of the payoff structures. In short, the preferences of Taiwan and China are endogenous with each other, and how they assess each other's preference influences their next moves. Thus, cross-strait relations are a function of both the assessment on the adversary's preference and the objective calculation of interests.

Second, the gap of capability can be the main factor to influence the weaker actor's choice between balance and bandwagon in a dyadic conflict. By taking a dyadic conflict

approach, Wu (1995) makes a generalization from the cases of Russia and its surrounding countries and suggests that the choice to balance (conflict) or to bandwagon (compromise) toward a strong neighbor is a function of the asymmetry in the economic size and military might between the strong country and each weak neighbor. In this light, the dynamics of cross-strait relations is a function of the asymmetry between Taiwan and China.

Third, the general pattern toward unification in all cases of “divided nations” makes the institutional arrangement related to unification become the main factor to influence the two actors’ behaviors. From the cases of Germany and the Korean peninsula, Henderson, Lebow, and Stoessiger (1974) summarize and predict a pattern toward unification for all divided nations with three stages: conflict, coexistence, and political integration. The key to go toward peaceful unification for divided nations is the institutional arrangement between the two governments. In the case of cross-strait relations, the institutional arrangement about the future political status of Taiwan is the most important factor to the peaceful development of cross-strait relations. Chiu (1991) emphasizes that the recognition for Taiwan to participate in international organizations and a credible guarantee of China’s commitment for Taiwan’s autonomy are the most important two features in any institutional arrangement for facilitating peaceful unification. Zhao (1991a), on the other hand, suggests that arranging the future Taiwan-China relations in a federal system helps promote and further the cross-strait political integration. In short, the institutional design can influence the possibility of cooperation or conflict between Taiwan and China.

In sum, the fluctuation of cross-strait relations is a result of the interactions between Taiwan and China in the two-player game approach, and can be influenced by the assessment of the other’s preference, the disparity of capability between Taiwan and China, and the institutional arrangement for the future relations. As to the contribution of the two-player game

approach, the studies taking this approach clearly identify some important characteristics of the Chinese Civil War legacy in the current relations between Taiwan and China, such as power disparity, the twofold issue intertwined with security and sovereignty, and the arrangements for political integration. However, the potential problem of the two-player game approach is to omit the U.S. influence without considering the possibility that in fact cross-strait relations are influenced by the interactions in the U.S.-China-Taiwan triangle.

For investigating the role of the United States and the influential patterns of the United States in cross-strait relations, it is necessary to compare the two-player game approach and the three-player game approach. Since the goal of this chapter is to test the presence of the U.S. influence in cross-strait relations, I will use historical and statistical analyses to examine the validity of the two approaches in the following sections.

3.2 The Formation of the Triangle from a Historical Perspective

The goal of this section is mainly to examine the third principle of strategic triangle, the balance of power assumption. Current cross-strait relations can be characterized as the struggle for sovereignty between Taiwan (ROC) and China (PRC) and the U.S. preference to maintain the status quo of the Taiwan Strait without furthering to the final solution of the Taiwan issue. In fact, the two characteristics of current cross-strait relations comes from e two important historical legacies, the Chinese Civil War legacy and the Cold War legacy. First, the Chinese Civil War legacy helps understand the incentives and preferences of Taiwan and China's foreign behaviors. Simply speaking, the Chinese Civil War legacy constrains both Taiwan and China's policy preferences around the "one China" position, and more importantly, provides a strong incentive for both sides of the Taiwan Strait to eliminate each other before Taiwan's democratization. Second, as to the Cold War legacy, the presence of the United States in the Taiwan Strait further

constrains the capabilities of both sides of the Taiwan Strait to change the status quo unilaterally, and more importantly, it also made the U.S.-China-Taiwan triangle become a part of the U.S. global strategy in the Cold War. In this light, the Cold War legacy not only makes the U.S. preference become important in cross-strait relations, but also keeps the three actors in the Taiwan Strait to function like a balance of power system in which China and Taiwan are not able to eliminate each other.

3.2.1 The Legacy of the Chinese Civil War

First of all, the most important legacy of the Chinese Civil War is so-called the “one China” principle in general, which made both China (PRC) and Taiwan (ROC) have an identical preference to unify in spite of the incapability for both sides to realize the unification of China in the Cold War era. The result of the Chinese Civil War had brought an ironic fact to the international community because there were, in fact, two “Chinas,” the P.R.C. and the R.O.C., both claiming that there is only “one China” in the world since October 1, 1949. For both sides of the Taiwan Strait, the Chinese Civil War was still going and the status quo in the Taiwan Strait was just like a cease-fire situation due to the incapability of each side to conduct a large scale amphibious attack to fulfill the holy mission of unification. In other words, what the R.O.C. and the P.R.C. competed for was the legitimacy to rule the territory of China and this created a situation in which the foreign policies of China and Taiwan inevitably came into with one another. For example, the one China principle of the KMT was symbolized by the motto “there is no room for patriots and traitors to live together” (hanzeibuliangli, 漢賊不兩立), which denotes that the solely legitimate government of China is an either/or choice between the P.R.C. and the R.O.C. Ironically, however, at the same time, the “one China” principle was in fact a consensus

for both Taiwan and China, and the preferences for unification was basically identical for both sides in the Cold War.

This identical preference for “one China” including Taiwan and China provides a strong incentive for Taiwan and China to compete for the international representation of China and keep preparing for the unfinished war of unification. First, as to the competition over “who represents China,” the membership in the international organizations, like the United Nations (UN), became an important battlefield for both sides of the Taiwan Strait. From the 1950s to the 1960s, the U.S.-headed coalition opposing the seating of the Communist China had a majority in the General Assembly of the UN (see Table 3.1). During this period, facing the question of the R.O.C legitimacy in the General Assembly from the Communist Bloc, Taiwan (ROC) chose to cooperate with the United States unconditionally. The reason for Taiwan’s unconditional cooperation was apparently for the ideological “one China” legitimacy and not necessarily for furthering any strategic interest based a pure utility calculation (Keohane 1967: 224). However, the coalition to maintain the membership of Taiwan (ROC) in the UN lost its majority in 1970 and Resolution 2758 was passed in 1971, which recognized the P.R.C. as “the only legitimate representative of China” to the UN and expelled “the representatives of Chiang Kai-shek” (General Assembly 1971). Since that day, it is clear that the P.R.C. had won the game of the international representation of China. Resolution 2758 becomes a supporting document for the “one China” policy of the P.R.C. in the international community, which emphasizes the legitimacy of the P.R.C., and, more importantly, China steps further to emphasize its sovereign claim over Taiwan from “who represents China” to “Taiwan is a part of China.”

Table 3.1 The Voting Record of the Representation of China in the United Nations

Year	Total Voting Membership	In Favor of the P.R.C.	In Favor of the R.O.C.	Abstention	Not Voting
1950	59	8	42	6	3
1951	60	5	36	2	17
1952	60	7	42	11	0
1953	60	10	44	2	4
1954	60	11	43	6	0
1955	60	12	42	6	0
1956	79	24	47	8	0
1957	82	27	47	7	1
1958	81	28	44	9	0
1959	82	29	44	9	0
1960	99	34	42	22	1
1961	104	34	61	7	2
1965	117	49	56	11	1
1966	122	48	66	7	1
1967	122	48	69	4	1
1968	126	47	73	5	1
1969	126	48	71	4	3
1970	127	52	66	7	2
1971	131	76	35	17	3

Source: United Nations Bibliographic Information System.

Second, as to the persistent preparation of the unfinished civil war, the KMT authoritarian rule in Taiwan is a good example. The foundation of the KMT authoritarian rule was based on the need to suppress the communist rebels and regain the mainland. Since the R.O.C. under the KMT rule was the only legitimate government representing China, the authoritarian rule in Taiwan was justified as a wartime measure to deal with the communist rebels. The Temporary Provisions of the Constitution of the R.O.C. provided this justification and institutional design for the KMT rule in Taiwan under the banner of striking back to mainland China. Thus, it is safe to say that the KMT's authoritarian regime in Taiwan was a product of the Chinese Civil War. The same logic also explains the reason for the KMT regime to refuse accepting the proposal of the coexistence in the UN with the Communist China in the 1970s. The coexistence with the PRC might be interpreted as the end of the Chinese Civil War,

which may lead to the loss of legal foundation to continue the wartime authoritarian regime in Taiwan.

The KMT's insistence on the R.O.C. version of the "one China" principle also implies that Taiwan's democratization is not a purely domestic issue. For the opposition camp in Taiwan, to democratize meant to remove the KMT's "one China" principle which legitimated the priority for the unification warfare and suspended some provisions about civil liberty in the R.O.C. Constitution. In other words, without getting rid of the hegemony of the Chinese Civil War legacy in Taiwan's domestic politics, it was impossible to democratize. The chance for Taiwan to democratize came in the 1970s. The KMT's legitimacy of authoritarian rule in Taiwan based the "one China" principle started to be shaken by the loss of the seat in the UN and the normalization of the U.S.-China relationship. Taiwan's rigidity of the "one China" preference was further softened with the pace of the KMT's Taiwanization. For example, Chiang Ching-kuo publicly claimed that he is a Taiwanese before his death. Then, Lee Teng-hui's "special state-to-state relationship" between Taiwan and China in the late 1990s and the rule of the pro-independence Democratic Progressive Party (DPP) after 2000 were also the efforts attempting to get rid of the Chinese Civil War legacy at both the international and domestic levels. In sum, democratization in Taiwan goes hand in hand with the decline of the KMT's "one China" legitimacy, and the consequence of Taiwan's democratization is a shift of Taiwan's preference from the rigid "one China" to the current KMT's "two Chinas" versus the DPP's "one China, one Taiwan."

More importantly, after democratization, a trend of maintaining Taiwan's de facto independence grows among Taiwanese people even as closer economic and social interactions with China take root after 2000. As shown in Figure 3.2, the share of Taiwanese supporting

independence and the share of Taiwanese supporting to maintaining the status quo forever rose since 1994 and the share of the two categories is more than 50% in 2013. On the contrary, the supporting rate for unification and future unification decline steadily from 1994. In other words, the trend shows that what was acknowledged by the United States in the Shanghai Communiqué in 1972 is no longer the reality. That is, “all Chinese on either side of the Taiwan Strait maintain there is but one China and that Taiwan is a part of China.”¹⁸ The trend in Figure 3.2 also explains the shift of Taiwan’s preference about the “one China” principle after Taiwan’s democratization and the KMT’s indigenization in the 1990s because politicians or parties seldom directly confront the majority in a democratic regime. In short, Taiwan’s democratization and the shift of identity after the 1990s provide the basic momentum for Taiwan to deviate from the “one China” principle in the civil war legacy.

¹⁸ The whole statements for both the United States and China sides, see Wikisource (1972).

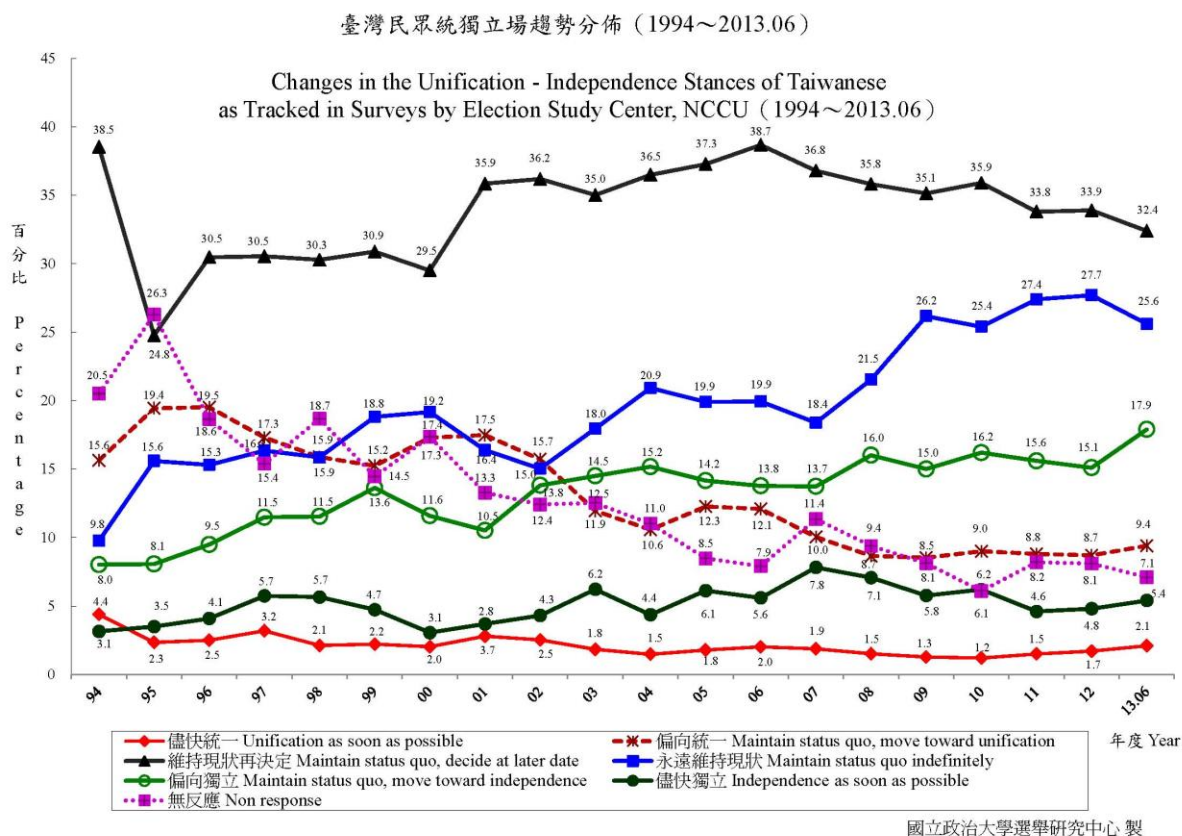


Figure 3.2 The Independence vs. Unification Trend Distribution in Taiwan

With the end of the game for the seat in the UN and the normalization of the U.S.-China relationship, the hostility and rivalry started to ease due to China's proposal to stop military hostility and then the "One Country, Two Systems" proposal in the beginning of the 1980s.¹⁹ Taiwan responded in 1987 with the liberalization of Taiwanese citizens' visits to China and the end of "the period of mobilization for the suppression of communist rebellion" in Taiwan's constitutional system in 1991, which meant that Taiwan (ROC) stopped treating the P.R.C. as a rebellious regime and ended its hostile status toward China caused by the Chinese Civil War. However, although the political rivalry and hostility have been mitigated, there is no sign that

¹⁹ The proposal of ending military confrontation was made in the "Message to the Compatriots in Taiwan" announced by the Standing committee of the National People's Congress and the concept of "One Country, Two Systems" was firstly brought by Ye Jianying's "Nine-Point Proposal" in 1981.

these two countries, especially for Taiwan, can totally get rid of the “one China” legacy for two reasons. First, the “one China” policy has been a part of the United States and China’s policy position in the triangle, and it is also widely recognized in the international community. More importantly, China still stands quite firm on the “one China” position, and any deviation from the position leads to China’s strong response. For example, from China’s responses to a series of events from Lee Teng-hui’s visit in 1995 to the 1996 crisis, it was clear that China was willing to confront and even to be defeated rather than to accept the erosion of the one China principal by Lee’s incremental “private visit” diplomacy. Therefore, Taiwan’s international space to deviate from the “one China” position is in fact quite limited. Second, for the political actors in Taiwan and China, the “one China” legacy still maintains a considerable power for mobilization. For China, promoting nationalist resentment toward Taiwan is still a useful tool to distract citizens’ dissatisfaction toward the CCP rule. In Taiwan, since the political cleavage of the two main parties goes with the unification-or-independence line, to cooperate with the CCP by compromising on the “one China” position is always an easy option to balance the pro-independence force in Taiwan’s domestic politics. The KMT’s strategy after the electoral defeat in the 2004 presidential election is a good example. In short, the legacy of “one China” principle never fades out for both Taiwan and China since the end of World War Two, and the foreign policies of the two countries still entangle with each other even after Taiwan’s democratization.

To sum up, the most important legacy of the Chinese Civil War is the “one China” principle or policy, which makes Taiwan and China’s preferences always prioritize the sovereign issue and also provides incentive for Taiwan and China to compete and even eliminate with each other. In the period of the KMT authoritarian rule, the two sides of the Taiwan Strait competed for the title of the solely legitimate government of China and treated the other side as the

rebellious force that should be eliminated. After Taiwan's democratic transition, although Taiwan no longer competes the representation of China with the P.R.C., the main issue between Taiwan and China is still sovereignty. During the period of the KMT authoritarian rule, the issue between China and Taiwan was "who represents China," but the issue between Taiwan and China then becomes "who is eligible to decides the future of Taiwan" after Taiwan's democratization. In both periods, the two sides contend with each other and make calculation based on the other's movements for winning international supports, like the recognition or support from the United States. In short, although the Chinese Civil War stopped in 1949, the legacy remains, which makes Taiwan and China be able to directly or indirectly influence each other's preferences and behaviors and have incentives to engage military conflict.

3.2.2 The Legacy of the Cold War

The legacy of the Cold War is mainly about the special role of the United States in the Taiwan Strait and how the capabilities of Taiwan and China are constrained by the United States since the Korean War. The presence of the United States in the Taiwan Strait preserves the status quo of 1949 that both sides of the Strait are incapable of defeating or even eliminating each other. Moreover, it makes cross-strait relations not only work in the legacy of the Chinese Civil War, but also be influenced by the U.S. global strategy in the Cold War structure. Before the Korean War, facing the result of the Chinese Civil War in 1949, the United States held a hands-off policy toward the situation in the Taiwan Strait. In other words, the Truman administration had no intention to interfere the result of the civil war between the KMT and the CCP, and the CCP's takeover of Taiwan seemed to be a natural end of the Chinese Civil War.²⁰ More importantly, at that time, the United States did not include Taiwan and the Korean peninsula in

²⁰ For the U.S. position toward the Chinese Civil War from 1944 to 1949, see the United States (1949).

the U.S. defensive perimeter toward the Communist Bloc in the western Pacific Ocean (Trefousse 1966: 152-57). However, the U.S. position shifted sharply because of the Korean War in 1950. The Truman administration gave an order to the U.S. 7th Fleet to neutralize the Taiwan Strait immediately after the outbreak of the Korean War. Since then, the security of Taiwan became a part of the U.S. global strategy in the Cold War. However, from the Chinese perspective, on the other hand, the Chinese Civil War was forced to stop because of the U.S. interference in the Taiwan Strait. From the start of the Cold War and the U.S. commitment to protect Taiwan, the third principle of strategic triangle starts to work because no single actors in the triad is able to totally dominate the rest of two actors. In this case, balance of power becomes the behavioral rule in the triangle.

In the first half of the Cold War era, building security systems in Europe and Asia was a crucial step to contain the Soviet threat for the United States, and it was obvious that, in these two regions, the United States took different strategies towards regional alliance formation, and this difference made the United States, China, and Taiwan become a strategic triangle. Unlike the establishment of the North Atlantic Treaty Organization (NATO) in Europe, the U.S. alliance strategy in East Asia was to build a set of bilateral security pacts with some Asian countries toward common enemies, and the result was a U.S.-centered “hub and spoke” system. The rationale behind the different strategy in East Asia was that America’s Asian allies (Japan, South Korea, and Taiwan) all had incentives or historical reasons to conduct aggressive behaviors and thereby bring the United States into direct conflict with the Communist Bloc (Cha 2010). For example, John F. Dulles, the Secretary of State in the Eisenhower administration, suspected that the Chiang Kai-shek administration in Taiwan was attempting to drag the United States into a war with China during and after the crises of the coastal islands near China in the 1950s (Tucker

2005: 113).²¹ More importantly, due to the complexity of East Asia, the United States does not want to be constrained by other states or regional organizations when facing a certain issue like Taiwan.²² The “hub and spoke” system can reduce the number of actors in a certain issue area, like the security of Taiwan, and ensure that the United States will not fight a war and be drawn into another war at the same time in Asia. In sum, the United States created a set of triangular relations in East Asia with its superiority to constrain its anti-communist allies’ aggressive behaviors, and the U.S.-China-Taiwan was one of them. Based on the design of the “hub and spoke” system, a triangle of stable marriage in the Dittmer’s typology is formed with a positive relationship between the United States and Taiwan and two negative relationships between Taiwan and China and between the United States and China.

The impact of the U.S. interference is profound for both China and Taiwan, and it preserves the status quo of the Taiwan Strait, which means both sides are incapable to change the status quo unilaterally. In other words, the presence of the United States further constrains the capabilities of Taiwan and China to eliminate each other and the two’s relationships with the United States become a crucial factor in the balance of power game in the Taiwan Strait. Thus, it is obvious that, from the beginning, the capabilities among the three actors in this triad are never equal and the great power disparity between the United States and the two sides of the Taiwan Strait makes the United States become the significant third party in the Strait and ensures that the three actors interact as the third principle of strategic triangle.

Since the United States plays a crucial role in maintaining the status quo in the Taiwan Strait, how does the U.S. preference influence Taiwan and China’s behaviors? Some have argued

²¹ The crises includes the Dongshan Island Campaign in 1953, the first Taiwan Strait crisis for the offshore islands in 1955, and the second Taiwan Strait crisis for the Kinmen islands in 1958.

²² For a more detailed discussion about the non-existence of a multilateral alliance in East Asia, see Hemmer and Katzenstein (2002), and Duffield (2001).

that the U.S.-China-Taiwan triangle was a function of the larger “great” triangle among the United States, China, and the Soviet Union, and looked at in that light the US-China-Taiwan triangle was merely a smaller part of the larger competition between the United States and the Soviet Union (Dittmer 2011: 11). When the Soviet-China relationship started to deteriorate, the positive U.S.-Taiwan relationship also started to become unstable because of the change of the U.S. preference toward China. With the increasing hostility of the Sino-Soviet split from the ideological divergence to the border conflict in the 1960s, both China and the United States started to reconsider each other’s position in their global strategies. For the United States, Nixon (1967) had suggested the necessity to end the isolation toward China in 1967, earlier than the beginning of his presidency. For China, starting from the end of Mao period, the normalization of the U.S.-China relations became the priority of China's foreign policy.²³ Figure 3.3 shows the development after the Sino-Soviet split between the great and small triangle. The change of the Soviet-China relationship from positive (cooperative) to negative (conflictive) led to the U.S.-China rapprochement consequentially. However, the improvement of the U.S.-China relationship did not make the United States to totally give up Taiwan for exchanging China’ strategic support to balance the Soviet Union. Thus, although it was true that the U.S. favor had shifted from Taiwan to China, to eliminate Taiwan or China’s total domination of the Taiwan Strait was not a part of the U.S. preference.

²³ See Pantsov and Levine (2012: 555-72).

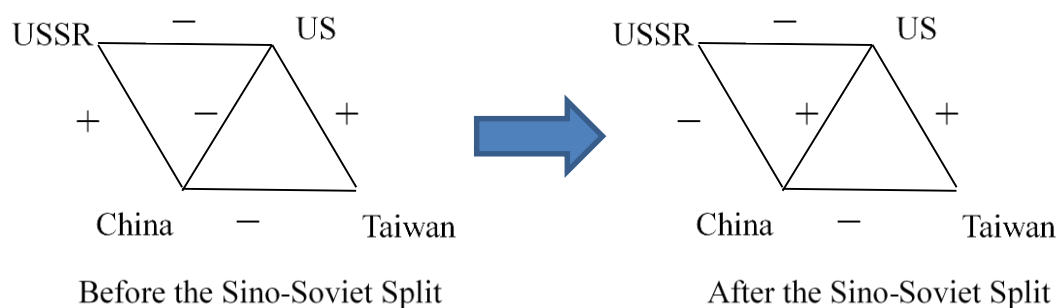


Figure 3.3 The Great and Small Strategic Triangles in the 1970s

The U.S. opening to China had started in early 1970s, and the United States normalized its relationship with China while maintained a close but informal relationship with Taiwan at the end of the 1970s. Looking back to the second principle about triangularity, in the U.S.-China-Soviet triangle, first of all, the U.S. initiated rapprochement toward China was based on a triangular calculation of utility because the U.S. opening to China was caused by the Sino-Soviet split. Second, China's rapprochement with the United States was a triangular self-adjustment because it was caused by the change of China's policy toward the Soviet Union. Thus, based on the historical development before 1979, it was obvious that the "great" triangle dominated the fate of the small triangle in this period.

Studies focusing on the released U.S. governmental documents also show two important characteristics in the process of the U.S.-China rapprochement. First, what made the great and small triangles connected was China's insistence on the Taiwan issue. Based on Tucker's (2009: 29-52) study, from the U.S.-China meeting in Warsaw in 1970 to Nixon's visit in 1972, the representative of China always prioritized the Taiwan issue to everything else.²⁴ Facing the same pressure of the Brezhnev doctrine in 1968, China seemed not so eager to normalize the U.S.-

²⁴ The core arguments of China were that Taiwan is a part of China and the United States has to totally withdraw its military forces and installations from Taiwan.

China relationship as the United States did, because China showed no intention to make any concession on the Taiwan issue in the negotiation process. In other words, although it was important for China to adjust its relationship with the United States because of the Soviet threat, to soften the “one China” position was still a red line that was impossible to cross. Second, in the process of the U.S.-China negotiation, Taiwan’s sovereign and security interests were never on the top of the U.S. agenda set by Nixon and Kissinger. In other words, the Cold War game of balance of power was more important than the survival interests of Taiwan for the Nixon administration (Tucker 1994: 68-69). At the end, the result of the Sino-Soviet split was the U.S.-China rapprochement, and the rapprochement then caused the formation of a romantic U.S.-China-Taiwan triangle in which the United States sat at the pivot position when the U.S. Congress passed the Taiwan Relations Act. In fact, the Taiwan Relations Act was a product of triangular self-adjustment for the United States, because the cause of the act was an alignment for the change of the U.S. policy toward China. Thus, clearly, the documentary evidence shows the importance of indirect triangularity for both the U.S and China to benefit from the interactions between the great and small triangles.

Although China benefited from the U.S. preference to balance the Soviet Union, China still failed to persuade the United States to give up its promise for maintaining Taiwan’s capability of self-defense. In other words, the development after the U.S.-China normalization did not quite follow the path that China originally predicted and China remained lacking the capability to take over Taiwan. In 1979, the Taiwan Relations Act was passed by the U.S. Congress soon after the establishment of the formal relations between the United States and China. The act requires the United States to provide “defensive” weapons to Taiwan and states that the United States concerns about any threat to the peaceful determination of the future of

Taiwan. Therefore, after the first and second communiqués between the United States and China mainly focusing on the status of Taiwan (ROC), the third communiqué started to address on the issue about the arms sale to Taiwan, and the United States promises to decrease its quality and quantity of arms sold to Taiwan in the third communiqué, the August 17 communiqué signed in 1982.²⁵ Again, the development after the U.S.-China rapprochement showed that the U.S. preference was only to maintain the status quo of the Taiwan Strait and the status quo had to serve for the U.S. global strategy. This is the main logic behind the formation of the “romantic triangle” in the second half of the Cold War, in which the United States recognizes the P.R.C.-defined “one China” policy while maintaining the arms sale to Taiwan to deal with the contradiction between Taiwan’s sovereignty and security caused by the Chinese Civil War legacy. This U.S. efforts to balance was a self-adjustment of the United States between its policies toward China and Taiwan. Based on the Three Communiqués between the United States and China and the Taiwan Relations Act, a new framework for the U.S.-China-Taiwan relations is finally established, the framework of the Three Communiqués and One Act. By analyzing the contents of the communiqués and the act, the framework can be summarized as follows. First, China does not use force toward Taiwan for unification. Second, Taiwan does not go toward the de jure independence. Third, the United States expects the peace and stability of the Taiwan Strait while maintains strategic ambiguity.

It is obvious that the contents of this framework are a compromise between the main actors’ preferences and capabilities. More importantly, the framework clearly defines the status quo of the Taiwan Strait in favor to the United States. For China and Taiwan, the framework

²⁵ The first communiqué is the Shanghai Communiqué in 1972 signed by the U.S. President Richard Nixon and the P.R.C. Premier Zhou Enlai. The second one is the Joint Communiqué on the Establishment of Diplomatic Relations in 1979. In both communiqués, the United States claimed to respect and recognize that the P.R.C. is the solely legitimate government of China and Taiwan is a part of China.

prevents them from pursuing their first priorities, which are to take over the sovereignty of Taiwan and to be independent from the P.R.C. respectively. In this framework, their inability to pursue their goals are further worsened by the uncertainty about the U.S. intervention. For the United States, although the recognition of the P.R.C.-favored “one China” position is a price to pay for exchanging China’s strategic support, the instability of the Taiwan Strait is not a cost that can be tolerated by the United States. Therefore, a position of strategic ambiguity supported by the superiority of capability in this triad is necessary for the United States to rule out any possibility for the rest of two actors to change the status quo in the Taiwan Strait unilaterally. Although the framework is challenged and shaken by the rise of China and the democratic transition in Taiwan, it seems that the framework still holds and works as the basic code of conduct in the U.S.-China-Taiwan triad till now.

In sum, the framework of the Three Communiqués and One Act is the most important product of the Cold War legacy and it is mainly a product of the U.S. self-adjustment between its policies toward China and Taiwan. The process about the formation of the framework illustrates how great the influence of the U.S. policy preference is in the U.S.-China-Taiwan triangle and how Taiwan and China’s capabilities are constrained in the process. In short, what the United States pursues is the stability in the Taiwan Strait only, and it seems that the U.S.-defined status quo still plays an important role in maintaining the U.S.-China-Taiwan triangle as a balance of power system in which no actor will be totally excluded or eliminated.

To sum up for this section, it is obvious that the legacy of the Chinese Civil War and the legacy of the Cold War are both important for the formation of the U.S.-China-Taiwan triangle in a historical aspect. First of all, the legacy of the Chinese Civil War mainly influences Taiwan and China’s incentives to take the sovereignty issue as their first priorities, and binds their

preferences together in the context of “one China” principle. In the post-Cold War era, although Taiwan’s preference has shifted gradually from unification, the constraint of the “one China” principle remains because the concept that Taiwan is a part of China still plays an important role at the international level and in China and Taiwan’s domestic politics. Second, as to the legacy of the Cold War, the shift of the U.S. preference and the U.S.-defined status quo make the U.S.-China-Taiwan triangle function like a balance of power system. More importantly, the U.S.-China rapprochement and the formation of the framework of the Three Communiqués and One Act are both a result of indirectly triangular consideration for both the United States and China. Moreover, the framework of the Three Communiqués and One Act is a compromise between the U.S. preference and the incapability of China and Taiwan, and the framework also provides a clear definition about what the status quo of the Taiwan Strait should be.

3.3 The Formation of the Triangle from a Statistical Perspective

In this section, the most important goal is to examine the second principle of strategic triangle, the triangular causality. That is, the level of cooperation or conflict of a bilateral relationship is a function of the two actors' relationships with the third. The research question is twofold. First, do the U.S.-related behaviors have an impact on cross-strait relations? Second, how and in what way does the U.S. influence cross-strait relations? The former is a test of the presence of the U.S. triangularity, and the latter is to know whether the U.S. pattern is in a form of direct triangularity or indirect triangularity. In this section, I plan to use statistical analysis to answer the questions and investigate the effect of the United States in cross-strait relations from 1979 to 2012.

3.3.1 *Research Design and Methodological Notes*

In this section, I use the three-player game approach and treat a triangle as a set of two-player game, so any bilateral interaction in the U.S.-China-Taiwan triangle will not be excluded. Based on what the relevant literature has suggested, six hypotheses about cross-strait relations for testing the causal relations among state behaviors in the U.S.-China-Taiwan triangle are listed as follows. The first and second hypotheses are about bilateral response. The third and fourth hypotheses are about directly triangular response. The fifth and sixth hypotheses are about indirect triangularity.

H1 Bilateral Tit-for-Tat between Taiwan and China

The positive development of China's behavior toward Taiwan leads to the positive development of Taiwan's behavior toward China and vice versa.

The negative development of Taiwan's behavior toward China leads to the negative development of China's behavior toward Taiwan and vice versa.

H2 Bilaterally Coercive Cooperation between Taiwan and China

The negative development of China's behavior toward Taiwan leads to the positive development of Taiwan's behavior toward China and vice versa.

The negative development of Taiwan's behavior toward China leads to the positive development of China's behavior toward Taiwan and vice versa.

H3 Triangular Tit-for-Tat caused by the United States in the Taiwan Strait

The positive development of the U.S. behavior toward China leads to the positive development of China's behavior toward Taiwan, and the negative development of the U.S. behavior toward China leads to the negative development of China's behavior toward Taiwan.

The positive development of the U.S. behavior toward Taiwan leads to the positive development of Taiwan's behavior toward China, and the negative development of the U.S. behavior toward Taiwan leads to the negative development of Taiwan's behavior toward China.

H4 Triangularly Coercive Cooperation caused by the United States in the Taiwan Strait

The positive development of the U.S. behavior toward China leads to the negative development of China's behavior toward Taiwan, and the negative development of the U.S. behavior toward China leads to the positive development of China's behavior toward Taiwan.

The positive development of the U.S. behavior toward Taiwan leads to the negative development of Taiwan's behavior toward China, and the negative development of U.S. behavior toward Taiwan leads to the positive development of Taiwan's behavior toward China.

H5 Triangular Calculation of Utility in the Taiwan Strait

The development of Taiwan's behavior toward China is a function of the development of the China-U.S. interactions.

The development of China's behavior toward Taiwan is a function of the development of the U.S.-Taiwan interactions.

H6 Triangular Self-Adjustment in the Taiwan Strait

The development of Taiwan's behavior toward China is a function of the development of Taiwan's behavior toward the United States and the development of Taiwan's behavior toward the United States is a function of the development of Taiwan's behavior toward China.

The development of China's behavior toward Taiwan is a function of the development of China's behavior toward the United States and the development of China's behavior toward the United States is a function of the development of China's behavior toward Taiwan.

As to the methodology, the state behavior variables from 1979 to 2012 have these following characteristics: nonstationarity, serial correlation, and autoregressive conditional heteroskedasticity (ARCH). This section applies an ARIMA(1,1,1)-GARCH(1,1) model to deal with the three problems. The ARIMA(1,1,1) model includes three components, which are the first-order autocorrelation, AR (1), the first-order moving-average, MA (1), and the first-differenced variables, I(1), to deal with the serial correlation and non-stationary problems. The GARCH(1,1) model is to assume that the current variance is a function of the variance of the last error term, ARCH(1), and the previous variance, GARCH(1). In sum, this section applies an ARIMA(1,1,1)-GARCH(1,1) model for the six state behavior variables (DTC, DCT, DCU, DUC, DTU, DUT), and the time scope is from January 1979 to June 2012.²⁶

The GARCH model is designed to model both the mean and variance of time series data, so there are two equations in the GARCH model, which are the conditional mean equation and the conditional variance equation. For the conditional mean equation, each first-differenced state behavior variable is regressed on the previous value of the other five differenced state behavior variables in one month, the AR (1) term, the MA (1) term, and a constant. The conditional mean equation helps explain how the negative-or-positive pattern of a state behavior is influenced by other state behaviors in the U.S.-China-Taiwan triangle. In other words, all hypotheses from the three-player cooperative game approach will be examined by the results of the conditional mean equations. Taking Taiwan's behavior toward China as example, the conditional mean equation of Taiwan's behavior toward China (DTC) is:

$$DTC_t = DCT_{t-1} + DCU_{t-1} + DUC_{t-1} + DTU_{t-1} + DUT_{t-1} + AR(1) + MA(1) + Constant$$

²⁶ All state behavior variables are first-differenced variables, so the “D” in front of all state variables is to distinguish the original variables with the first-differenced variables.

As to the conditional variance equation, the variance of each first-differenced state behavior variable is a function of the previous value of the other five differenced state behavior variables in the last month, the ARCH (1) term, the GARCH (1) term, and a constant. The conditional variance equation in the GARCH model helps examine how a certain variable changes the variance of a state behavior. In the case of the U.S.-China-Taiwan triangle, the conditional variance equation is used to examine how the stability of a state behavior is influenced by other state behaviors. The sensitivity or instability here is defined as a greater variance cause by a certain state behavior variable. Taking Taiwan's behavior toward China as example, the conditional variance equation of Taiwan's behavior toward China (DTC) is:

$$\begin{aligned}
 & \textit{The Varaince of } DTC_t \\
 & = DCT_{t-1} + DCU_{t-1} + DUC_{t-1} + DTU_{t-1} + DUT_{t-1} + ARCH(1) \\
 & + GARCH(1) + Constant
 \end{aligned}$$

The results of the conditional mean equations are shown as Table 3.2, which helps explain the causal relations about negative-or-positive patterns in the U.S.-China-Taiwan triad since 1979. Regarding the diagnostics of standardized residuals in Table 3.2, there is no evidence of serial correlation, because all equations fail to reject the null hypotheses of having no serial correlation at 5% level. In short, the results are ready to make causal inference and the residuals function in a normal way.

Table 3.2 Results about Negative-or-Positive Patterns in the Triad (1979-2012)

	DTC	DCT	DCU	DUC	DTU	DUT
Conditional mean						
DTC		0.363**	-0.0116	-0.0720	-0.0139	0.0160
t-1		(0.067)	(0.149)	(0.151)	(0.0349)	(0.028)
DCT	-0.0316		0.0593	0.198	0.0299	-0.0368
t-1	(0.0687)		(0.127)	(0.135)	(0.0347)	(0.027)
DCU	0.0133	-0.0512		0.229*	-0.00482	-0.0431*
t-1	(0.0662)	(0.050)		(0.101)	(0.0352)	(0.022)
DUC	-0.00483	0.0135	-0.0135		0.00329	-0.0179
t-1	(0.0640)	(0.053)	(0.103)		(0.0331)	(0.023)
DTU	-0.105	0.198+	-0.0154	0.0740		0.275**
t-1	(0.162)	(0.11)	(0.301)	(0.312)		(0.066)
DUT	0.0811	-0.229*	0.272	0.456+	0.285**	
t-1	(0.129)	(0.10)	(0.267)	(0.267)	(0.0734)	
AR(1)	0.0967	-0.225**	0.192	-0.0853	-0.0619	-0.0721
	(0.0982)	(0.082)	(0.121)	(0.0892)	(0.0941)	(0.063)
MA(1)	-0.793**	-0.811**	-0.829**	-0.810**	-0.799**	-0.777**
	(0.0474)	(0.036)	(0.0488)	(0.0538)	(0.0534)	(0.039)
Constant	0.617	0.707	0.877	0.650	0.291	0.766*
	(0.867)	(0.75)	(1.579)	(1.146)	(0.363)	(0.38)
N	400	400	400	400	400	400
B Statistic	0.5172	1.2384	0.7881	0.5023	0.7844	1.3227+
se						

Note:

1. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

2. Standard errors in parentheses.

3. The B statistic reports the results of the Bartlett's test on standardized residuals, which helps detect serial correlation in the standardized residuals (se) of each equation.

4. All tests and regressions are performed by STATA (ver. 12).

3.3.2 Policy Inertia

In Table 3.2, one AR term and all MA terms are significant at 5% level. The AR term is interpreted as the presence of policy inertia directly, which implies that the behavioral change in the last month can influence the change of the same behavior in this month in this triad. As shown in Table 3.2, only China's behavior toward Taiwan (DCT) shows an evidence of policy inertia, and the negative and significant coefficient of the AR(1) term implies that the negative development of China's behavior toward Taiwan in the last month leads to a positive development of China's behavior toward Taiwan in this month, but the positive development in the last month leads to a negative development of China's behavior toward Taiwan.

On the other hand, the significant MA terms in all equations reveal the effect of unexplained shock in the last month on this month. The negative sign of all MA terms indicates that a greater shock or surprise in the last month leads to a more negative development for all state behaviors in this month. Therefore, any surprise leads to a more negative development for all state behaviors in the triad subsequently. In short, the U.S.-China-Taiwan triangle is a behavioral network in which actors' behaviors are easy to go toward a conflictive development when facing surprising behaviors.

3.3.3 The Negative-or-Positive Patterns in the Triad

The results in Table 3.2 help identify the causal relations influencing negative-or-positive patterns of state behaviors in the U.S.-China-Taiwan triangle. Based on the results in Table 3.2, Figure 3.4 shows all causal arrows significant at 5% level in the triad, which indicates all significant variables influencing the negative-or-positive development of state behaviors in the US-China-Taiwan triangle. Where the causal arrow goes means the dependent variable and where the arrow is from is the independent variable that is significant for the dependent variable in Table 3.4.²⁷

²⁷ As shown in Table 3.2, there are two significant state behavior variables in the equation of China's behavior toward Taiwan (DCT), which are Taiwan's behavior toward China (DTC) and the U.S. behavior toward Taiwan (DUT). Thus, in Figure 3.4, there are two arrows going from Taiwan's behavior toward China (TWN toward CHN) and the U.S. behavior toward Taiwan (US toward TWN) to China's behavior toward Taiwan (CHN toward TWN). The rest of causal arrows can also be interpreted in the same way.

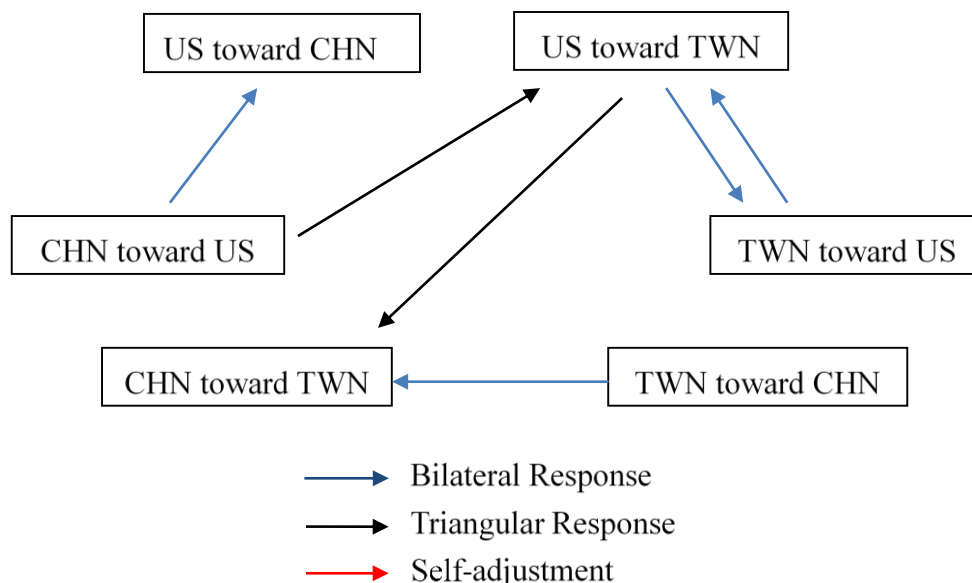


Figure 3.4 Causal Relations of Negative-or-Positive Patterns in the Triad

In general, negative-or-positive patterns in this triangle work in both bilateral and triangular ways. The presence of triangularity is evident in cross-strait relations and the U.S.-Taiwan relations, and some states' negative-or-positive patterns are quite independent from the interactions of the triangle. A detailed implication of the statistical results goes as follows.

First of all, as shown in Table 3.2 and Figure 3.4, the development of Taiwan's behavior toward China (DTC) is quite independent from any behavior in the triad because no state behavior variable is significant in the conditional mean equation of Taiwan's behavior toward China (DTC) besides the MA term. This result rejects all hypotheses (from H1 to H6) about Taiwan's behavior toward China.

Second, the presence of bilateral tit-for-tat (H1) is evident in China's policy toward Taiwan. The positive sign of Taiwan's behavior toward China (DTC) in the equation of China's behavior toward Taiwan (DCT) indicates that Taiwan's behavior toward China (DTC) leads to China's reciprocal response. Interestingly, China's behavior toward Taiwan does not have the same tit-for-tat effect on Taiwan's behavior toward China because China's behavior toward

Taiwan (DCT) is not significant in the equation of Taiwan's behavior toward China (DTC). This result suggests the special status of Taiwan in China's decision-making process. More importantly, this result also reveals the insufficiency of the two-player game approach. Although the causality of bilateral interactions between Taiwan and China is significant, the causal arrow is not a two-way causal arrow. Only Taiwan's behavior trigger China's reciprocal response but China's behavior does not trigger Taiwan's response in cross-strait relations. Thus, researchers taking the two-player game approach on cross-strait relations should reconsider the question about "who makes the first move" and "who cares more," because the statistical results show that China cares Taiwan's behavior but Taiwan does not care so much about China's behavior in cross-strait relations from 1979.

Third, the indirectly triangular calculation of utility (H5) is partially evident in the conditional mean equation of China's behavior toward Taiwan. The statistical evidence shows that the U.S. behavior toward Taiwan (DUT) leads to China's inverse response toward Taiwan (DCT) because the sign of the coefficient is negative. This implies that the positive development of the U.S. behavior toward Taiwan triggers a negative development of China's behavior toward Taiwan, or the negative development of the U.S. behavior toward Taiwan triggers a positive development of China's behavior toward Taiwan. Again, the statistical result reminds the danger to treat a bilateral relationship as a whole. Although the U.S. behavior toward Taiwan (DUT) can influence China's behavior toward Taiwan, Taiwan's behavior toward the United States (DTU) does not have the same causal influence on China's behavior because Taiwan's behavior toward the United States (DTU) is not significant in the equation of China's behavior toward Taiwan (DCT). Therefore, only the U.S. behavior toward Taiwan changes China's calculation of utility in its behavior toward Taiwan, but Taiwan's policy toward U.S. is not. In China's rationale, the

sensitivity to the U.S. behavior to Taiwan is reasonable, because any U.S. positive development toward Taiwan shows a great potential to wreck China's superiority and sovereign claim over Taiwan, but Taiwan's positive development with the United States may not. In this case, a balancing or inverse behavior is necessary for China to increase Taiwan's cost to cooperate with the United States or to mitigate Taiwan's cost to conflict with the United States. A summarized result of hypothesis testing in cross-strait relations is presented as Table 3.3.

Table 3.3 The Result of Hypothesis Testing Related to Cross-Strait Relations

DV	DTC	DCT
Bilateral tit-for-tat (H1)		**
Bilaterally coercive cooperation (H2)		
Triangular tit-for-tat by the US (H3)		
Triangularly coercive cooperation by the US (H4)		
Triangular calculation of utility (H5)		** (DUT only)
Triangular self-adjustment (H6)		

Note: ** indicates that the hypothesis is supported by the results in the conditional mean equations.

Fourth, although it is not directly related to the hypothesis testing, the statistical results basically confirm Beijing's efforts to influence Taipei through Washington and the U.S. strategy to balance China by cooperating with Taiwan. However, the effectiveness of Beijing's efforts is questionable. In the first place, China's behavior toward the United States (DCU) can influence the U.S. behavior toward Taiwan (DUT) in an inverse way. As shown in Table 3.2, the coefficient of China's behavior toward the United States (DCU) in the equation of the U.S. behavior toward Taiwan (DUT) is negative. Therefore, the negative development of China's behavior toward the United States triggers a positive development of the U.S. behavior toward Taiwan, which indicates that the United States uses its level of cooperation toward Taiwan as a means to respond or balance China's behavior to the United States. On the other hand, the positive development of China's behavior toward the United States can lead to the U.S. reduction of cooperation toward Taiwan, and this is how Beijing attempts to influence the U.S. policy toward Taiwan. Second, the effectiveness is questionable because there is no evidence indicating

that the U.S. behavior toward Taiwan can influence Taiwan's behavior toward China. In fact, the statistical results show that Taiwan's behavior toward China (DTC) is independent from all behaviors in the triangle. Thus, although China can influence the development of U.S. policy toward Taiwan, the U.S. policy toward Taiwan does not influence Taiwan's policy toward China.

Considering the findings with the historical after 1979, first of all, there is no sign of the U.S. direct triangularity in the statistical analysis.²⁸ Since the normalization of the U.S.-China relationship, the U.S. direct involvement in the Taiwan Strait is no longer an easy option, and the statistical evidence also echoes the trend. Second, although the U.S. leverage in cross-strait relations is limited, the U.S. behavior toward Taiwan still works as a useful means to influence China's behavior toward Taiwan. As shown in Table 3.2, the U.S. behavior toward Taiwan (DUT) can lead to an opposite development of China's behavior toward Taiwan (DCT), and this is also the only triangular causality influencing cross-strait relations which allows the United States to influence China's policy toward Taiwan through changing its level of cooperation with Taiwan. This fact may well illustrate the main rationale of the United States to refuse setting a deadline to totally cease the arms sale to Taiwan because to terminate the channel of cooperation with Taiwan may also mean the United States has to lose the only leverage to influence negative-or-positive patterns of cross-strait relations. On the other hand, there is no evidence to support that cross-strait relations are important to the negative-or-positive patterns of the U.S. policy because cross-strait relations (DTC and DCT) does not cause any significant change of the U.S. behaviors (DUT and DTU) in the conditional mean equations. However, the U.S. policy toward Taiwan really plays a role in cross-strait relations, especially for China's behavior toward

²⁸ Because the U.S. behavior toward Taiwan (DUT) is not significant for Taiwan's behavior toward China (DTC), and the U.S. behavior toward China (DUC) is not significant for China's behavior toward Taiwan (DCT).

Taiwan. Third, Taiwan in fact has some advantages in cross-strait relations. Taiwan's policy toward China is quite independent and more importantly, Taiwan's policy toward China can influence China's policy toward Taiwan but not vice versa. Therefore, based on this pattern, Taiwan has the potential to play a more active role in cross-strait relations.

To sum up, the results in the conditional mean equations indicate that the United States plays an indirect role in China's policy toward Taiwan and lacks a direct leverage in negative-or-positive patterns of cross-strait relations. As to the validity of the two-player game and three-player game approaches, the statistical results suggest that negative-or-positive patterns of cross-strait relations are not only a function of the interactions between Taiwan and China. At least for China, China's behavior toward Taiwan is influenced by the U.S. indirect triangularity and Taiwan-initiated tit-for-tat. In other words, both bilateral and triangular causalities are evident for the negative-or-positive pattern of China's behavior toward Taiwan. Thus, the two-player approach is not sufficient enough to explain the whole picture of cross-strait relations. More importantly, both two-player game and three-player game approaches fail to explain the negative-or-positive pattern of Taiwan's behavior toward China, because no behavior in the triad can influence Taiwan's behavior toward China. In short, since the U.S. leverage in the Taiwan Strait from 1979 to 2012 is evident although it only works indirectly on the China side, it is reasonable to claim that the U.S.-China-Taiwan triangle functions as the second principle of strategic triangle predicts. Therefore, it is necessary to include the U.S. related behaviors when analyzing negative-or-positive patterns of cross-strait relations, and treat cross-strait relations as a part of the U.S.-China-Taiwan triangle.

3.3.4 Patterns about Shocks

The results of the conditional variance equations are used to identify the factors influencing the volatility of a state behavior, and are shown as Table 3.4.

Table 3.4 Results of the Behavioral Stability in the Triad (1979-2012)

	DTC	DCT	DCU	DUC	DTU	DUT
Conditional variance						
DTC		0.00567**	-0.000182	0.00845**	0.00541*	-0.00787*
t-1		(0.0018)	(0.00224)	(0.00239)	(0.00239)	(0.0031)
DCT	0.00578**		-0.0101**	-0.00902**	-0.00773**	0.0107**
t-1	(0.00196)		(0.00142)	(0.00199)	(0.00116)	(0.0018)
DCU	-0.00212	-0.0000004		0.00599**	0.00428+	0.00196
t-1	(0.00320)	(0.0032)		(0.000943)	(0.00251)	(0.0023)
DUC	0.00103	0.000158	0.00284**		0.00234	-0.0057**
t-1	(0.00316)	(0.0030)	(0.00103)		(0.00218)	(0.0016)
DTU	-0.0161**	0.000925	0.0178**	-0.0199*		0.0129**
t-1	(0.00509)	(0.0063)	(0.00322)	(0.00796)		(0.0040)
DUT	0.00472	0.00580	-0.00869**	0.0130*	0.000859	
t-1	(0.00487)	(0.0045)	(0.00310)	(0.00535)	(0.00237)	
Constant	6.056**	7.031**	5.603**	5.646**	3.581**	4.534**
	(0.230)	(0.15)	(0.288)	(0.494)	(0.260)	(0.326)
ARCH	0.265**	0.543**	0.0657**	0.107**	0.0700**	0.548**
t-1	(0.0494)	(0.061)	(0.0186)	(0.0290)	(0.0145)	(0.049)
GARCH	0.678**	0.457**	0.891**	0.858**	0.856**	0.452**
t-1	(0.0487)	(0.061)	(0.0201)	(0.0203)	(0.0232)	(0.049)
N	400	400	400	400	400	400
B Statistic	0.4744	0.4894	0.3702	0.5957	1.1180	0.4230
se ²						

Note:

1. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.
2. Standard errors in parentheses.
3. The B statistic reports the results of the Bartlett's test on standardized residuals, which helps detect heteroscedasticity in the squared standardized residuals (se^2) of each equation.
4. In the DCT and DUT equations, the sum of the ARCH and GARCH terms is constrained to be 1 as the integrated GARCH model.
5. All tests and regressions are performed by STATA (ver. 12).

Regarding the diagnostics of standardized residuals, there is no evidence of the heteroscedasticity problem. As shown at the bottom of the Table 3.4, all equations fail to reject the null hypotheses of having no heteroscedasticity. In short, this is a model ready to make causal inference and the squared standardized residuals function in a normal way.

The results in Table 3.4 show a strong tendency of surprise-caused volatility and volatility clustering, because all ARCH and GARCH terms are positive and significant at 5% level. The ARCH term helps explain how uncertainty or unexplained shock in the last month influence the variance in this month.²⁹ The positive ARCH terms imply that an unexpected news or shock in the last month tends to trigger a greater variance for all state behaviors in this month. Therefore, it is reasonable to expect that any surprising movement or unexpected crisis tends to produce a greater variance or instability for all state behaviors in the U.S.-China-Taiwan triangle. On the other hand, the GARCH terms help indicate the phenomenon of volatility clustering.³⁰ The positive GARCH terms in Table 3.4 suggest that the greater variance in the last month leads to a greater variance for all state behaviors in this month. In the reality of the U.S.-China-Taiwan triangle, this implies that if the instability in the last month is evident, the presence of instability in this month can be expected. In other words, there is a tendency that the instable time points tend to cluster. More importantly, the higher the sum of the coefficients of the ARCH and GARCH terms is, the stronger the persistence of volatility is. As shown in Table 3.4, the sum of the coefficients of the ARCH and GARCH terms for the conditional variance equations of all state behavior variables are very close or even equal to one.³¹ The fact implies that the volatility of state behaviors in the triad hardly dies out. In sum, the stability of the U.S.-China-Taiwan

²⁹ ARCH(1) in the conditional variance equation means the squared error term at time t-1 in the conditional mean equation. In this dissertation, the error term is interpreted as uncertainty, so the ARCH term can be explained as the extreme level of uncertainty in the earlier time unit because the more extreme the error term in the conditional mean equation is, the greater the ARCH term in the conditional variance equation is.

³⁰ GARCH(1) means the value of variance at t-1 in the conditional variance equation. Therefore, the greater the variance in the last month is, the greater the variance is in this month.

³¹ When the sum of the ARCH and GARCH terms is greater than one, I will then constrain the sum to be 1. In other words, the model then becomes an integrated GARCH (IGARCH) model used to depict the presence of high persistence in volatility. In the Table 3.4, the models of China's behavior toward Taiwan (DCT) and the U.S. behavior toward Taiwan (DUT) are IGARCH(1,1) models.

triangle is very sensitive to any surprising behavior or instability, and the instable effect of surprises tends to work as a long-run memory for policy-makers.

3.3.5 *The Behavior Stability in the Triad*

The causal relations between state behaviors and the variance of a certain state behavior are based on the results of the conditional variance equations in Table 3.4, and Figure 3.5 shows all causal relations based on the results of the conditional variance equations.

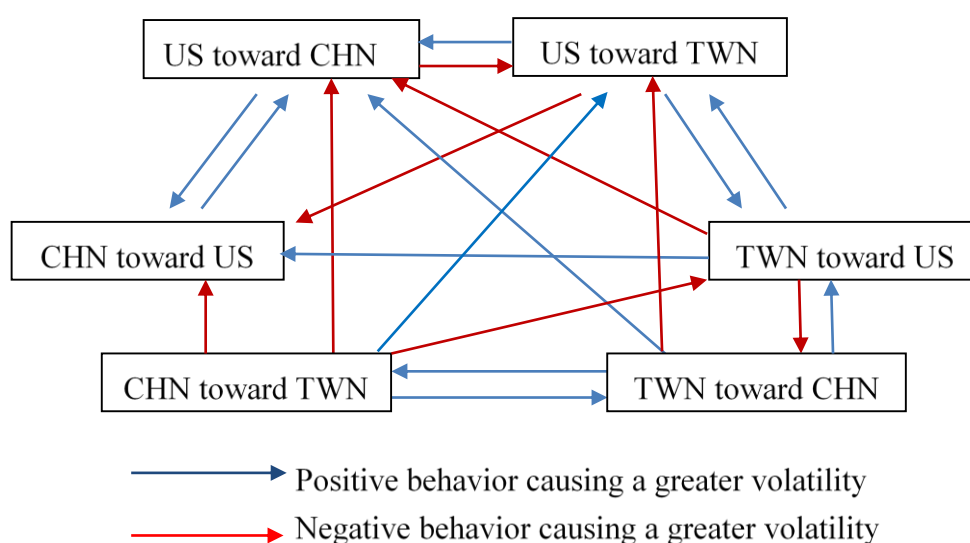


Figure 3.5 Causal Relations about the Behavioral Stability in the Triad

In Figure 3.5, the positive relations mean the positive sign of the relative variables significant at 5% level in the conditional variance equations and the negative relations mean the negative sign of the relative variables. A positive relationship indicates that the positive change of a state behavior causes a greater variance or instability of another state behavior. A negative relationship, on the other hand, indicates the negative change of a state behavior causes a greater variance or instability for another state behavior. As in Figure 3.4, where the causal arrow goes means the dependent variable and where the arrow is from is the independent variable that is significant for the dependent variable in Table 3.4.

One thing has to be noted before entering the discussion about the causal relationships between state behaviors and the volatility of state behaviors in the triad. In fact, there is not much theoretical guidance helping to formulate hypotheses about cooperation and states' behavioral stability. In general, it is reasonable to assume that uncertainty tends to make it difficult for rational actors making decision and predicting the future. Thus, when decision-makers perceive any political change or event that brings great uncertainty, a sudden and sharp policy modification may be expected because they may not be able to respond rationally due to the great pressure caused by the uncertainty. The quick and assertive response to the outbreak of a crisis is a good example for the response to uncertainty. Therefore, it is reasonable to interpret that the greater instability or volatility of a certain state behavior is caused by the uncertainty made by other state behaviors.

In general, the results in the conditional variance equations show that state behaviors in the U.S.-China-Taiwan triangle are sensitive to each other's behavior, as shown in Figure 3.5. In other words, the volatility of state behaviors in the triad can be predicted by some actor's pervious behaviors in the triad. Comparing Figure 3.4 with Figure 3.5, it is obvious that many state behaviors have the ability to influence the stability of other state behaviors as shown in Figure 3.5, but only very few state behaviors can change the negative-or-positive patterns of other state behaviors as shown in Figure 3.4. Thus, in general, the interactions in the triad tend to influence the stability rather negative-or-positive patterns of state behaviors in the triad.

As to the volatility of cross-strait relations, there are two note-worthy patterns. First, China's behavior to Taiwan (DCT) is only sensitive to Taiwan's behavior toward China (DTC). As shown in Figure 3.5, only one causal arrow going toward China's behavior to Taiwan (CHN toward TWN) and it coming from Taiwan's behavior toward China (TWN toward CHN). The

conditional variance equation of China's behavior toward Taiwan (DCT) in Table 3.4 also shows that Taiwan's behavior toward China (DTC) is the only significant factor. Both indicate the sensitive status of Taiwan in China's decision making. More importantly, the positive coefficient of Taiwan's behavior toward China (DTC) indicates that the positive development of Taiwan's behavior leads to a greater volatility of China's policy toward Taiwan. In short, China is sensitive to the positive change of Taiwan's behavior, and none of other state behaviors can cause any significant variance of China's behavior toward Taiwan.

Second, as to the Taiwan side, Taiwan's behavior toward China (DTC) is sensitive to the positive development of China's behavior toward Taiwan (DCT) and the negative development of Taiwan's behavior toward the United States (DTU) as shown in the conditional variance equation of Taiwan's behavior toward China (DTC) in Table 3.4. The result suggests that the two state behavior variables can make Taiwan's behavior toward China less stable or have a greater variance. The instable effect caused by the negative development of Taiwan's behavior toward the United States (DTU) also suggests the presence of indirect triangularity in explaining the volatility of Taiwan's behavior toward China. In other words, within Taiwan's decision-making process, the positive development of China's behavior toward Taiwan and the negative development of Taiwan's behavior toward the United States create uncertainty for Taiwan's decision-makers. The former is a bilateral relationship between Taiwan and China, and the latter suggests that the stability of Taiwan's policy toward China is a function of Taiwan's policy toward the United States, which works like the triangular self-adjustment effect.

As to the role of cross-strait relations in the U.S. policy, it is obviously that cross-strait relations play an important role in the stability of the U.S. behaviors. Both China's behavior toward Taiwan (DCT) and Taiwan's behavior toward China (DTC) are significant in the

conditional variance equations of the U.S. behavior toward China (DUC) and the U.S. behavior toward Taiwan (DUT) in Table 3.4. Comparing the results in the conditional variance equations (Table 3.4) with the results in the conditional mean equations (Table 3.2), there is no evidence to claim that cross-strait relations play a role in influencing the negative-or-positive pattern of the U.S. policy, because cross-strait relations (DTC and DCT) is not significant in the conditional mean equations of the U.S. behavior toward China (DUC) and the U.S. behavior toward Taiwan (DUT) in Table 3.2.³² Thus, it is reasonable to conclude that cross-strait relations have an impact on the stability of the U.S. behaviors but not on the negative-or-positive patterns of the U.S. behaviors. Any fluctuation of cross-strait relations causes instability for the U.S. policy rather makes the U.S. behaviors go toward a positive or negative development.

To sum up, the results in the conditional variance equations show that many state behavior variables contribute to the volatility of other state behavior variables. In other words, it is reasonable to believe that the interactions in the triangle do not fundamentally alter the framework of the Three Communiques and One Act since 1979 to 2012. Surprises created by some actors are not rare, but they only create uncertainty for decision-makers, not incentives to change the existing negative-or-positive patterns. In cross-strait relations, China is only sensitive to the positive development of Taiwan's behavior and Taiwan is sensitive to the positive development of China's behavior toward Taiwan and the negative development of its own behavior toward the United States. Therefore, the statistical evidence indicates that the two sides of the Taiwan Strait are sensitive to any positive development initiated by the other side from 1979 to 2012. More importantly, the statistical evidence also shows the presence of an indirect

³² A comparison between Figure 3.4 and Figure 3.5 also shows the same pattern. In Figure 3.4, no causal arrow goes from Taiwan's behavior toward China (TWN toward CHN) and China's behavior toward Taiwan (CHN toward TWN) to the U.S. behaviors toward China and Taiwan (US toward CHN and US toward TWN). But, In Figure 3.5, many causal arrows go in this way.

triangularity related to the United States influencing Taiwan's behavioral stability toward China. On the other hand, cross-strait relations have an impact on the volatility of the U.S. behaviors, but have no influence on the negative-or-positive patterns of the U.S. behaviors in the triad. The result suggests the United States is sensitive to the development of cross-strait relations, but the development of cross-strait relations may not directly alter the U.S. behavioral pattern since 1979.

In general, the statistical analysis based on the GDELT event data from 1979 shows that cross-strait relations are not only a function of the Taiwan-China interactions because of the presence of the U.S. triangularity in the stability of Taiwan's behavior toward China and in the negative-or-positive pattern of China's behavior toward Taiwan. Based on the results, it is reasonable to conclude that the three-player game approach is more applicable than the two-player approach to analyze cross-strait relations because the U.S. related behaviors cannot be omitted. From 1979 to 2012, in general the U.S. influence works in a subtle and indirect way in cross-strait relations. Unlike many works emphasizing the direct triangularity in regional conflict, the significant third party plays an indirect role in the Taiwan Strait.

3.4 Conclusion

Following the three principles of strategic triangle in the relevant literature, both the historical and statistical analyses confirm that cross-strait relations are not pure bilateral affairs between Taiwan and China. Both results suggest that the U.S. influence cannot be omitted and it works in a subtle and indirect way in cross-strait relations as shown in the statistical analysis. Based on these results, it seems clear that a three-player game approach is more reasonable than the two-player game approach.

The historical analysis in this chapter has shown that the three actors' behaviors are heavily interconnected because of the Chinese Civil War legacy and the Cold War legacy. The two legacies have forced the three actors to make decisions based on the result of the earlier interactions, and more importantly, made the U.S.-China-Taiwan triangle function like a balance of power system and no state will be eliminated, as the third principle of strategic triangle predicts. The Chinese Civil War legacy and the resulting "one China" principle make Taiwan and China always prioritize the sovereignty issue and provide conflictive incentives for them. As to the Cold War legacy, the U.S. preference of global strategy and the U.S.-defined status quo constrain the capabilities of Taiwan and China to fulfill their sovereign claims. This is the reason that Taiwan survives from China's takeover and the U.S.-China-Taiwan triangle can function like a balance of power system. In sum, the two legacies bind these three actors' behaviors and entangle them in a way that the third principle of strategic triangle predicts

The statistical analysis derived from the interactions in the triad from 1979 to 2012 reveals the presence of the U.S. triangularity working in an indirect form in cross-strait relations, which indicates that in the U.S.-China-Taiwan triangle, cross-strait relations are a function of China and Taiwan's relations with the United States, as the second principle of strategic triangle predicts. The results in the conditional mean equations show that the United States does not have a direct leverage to influence cross-strait relations, but the United States can influence China's negative-or-positive pattern toward Taiwan by manipulating its relationship with Taiwan. In other words, the U.S. influence works in a form of triangular calculation of utility for China's behavior toward Taiwan, and the positive development of the U.S. behavior toward Taiwan can lead to a negative development of China's behavior toward Taiwan. In sum, the significant third party in the Taiwan Strait plays an indirect role through triangular calculation of utility and only

on the China side. On the other hand, Taiwan's negative-or-positive pattern toward China is quite independent from the United States and China's behaviors, so to include Taiwan's domestic politics for further analysis may be a good option to explain Taiwan's negative-or-positive pattern toward China. As to the results in the conditional variance equations, the U.S. influence on the volatility of cross-strait relations works indirectly on the Taiwan side. The empirical evidence shows that Taiwan's behaviors toward China and toward the United States are sensitive to each other because any change of one behavior changes the volatility of the other behavior. Again, this is an indirect U.S. influence existing in Taiwan's decision-making process. Finally, the U.S.-China-Taiwan triangle is a behavioral network that hates surprise and instability, and the statistical analysis suggests that the United States is sensitive to the fluctuation of cross-strait relations, but the fluctuation of cross-strait relations may not directly and fundamentally alter the U.S. behavioral pattern since 1979.

CHAPTER 4. THE IMPACT OF THE COLD WAR AND TAIWAN'S DEMOCRATIZATION

Since the formation of the U.S.-China-Taiwan triangle is deeply intertwined with the Cold War structure and the "one China" legacy, it is worthy to further investigate the impact of the Cold War and Taiwan's democratization on the dynamics of the triangle. From 1979 to 2012, there are two important events that significantly impact the two legacies. The first is the dissolution of the stable bipolar system brought by the end of the Cold War. Since the U.S.-China rapprochement in the 1970s was a strategic cooperation to balance the Soviet Union in the Cold War structure, does the loss of common enemy after the Cold War alter the nature of the U.S.-China relations? Some IR theories in the realist context, like structural realism and power transition theory, have suggested a pessimistic and conflictive future of the U.S.-China relations.

This chapter will examine the validity of their predictions and implications in the U.S.-China-Taiwan triangle.

The second is Taiwan's regime change from the KMT authoritarian rule to a democratic regime. The change of regime type may have a profound impact on foreign policy. More importantly, empirical IR studies have suggested a more conflictive tendency for those states in the democratic transition process because politicians tend to utilize nationalist emotion for winning elections. Beside the empirical implication, Taiwan's democratization also has its political implications. Taiwan's democratization has created an opportunity for Taiwanese leaders to challenge or deviate from the original "one China" position, which may impact the "one China" consensus recognized by the United States and China after 1979. Therefore, this chapter aims to test the validity of the conflictive tendency suggested by the relevant literature in the U.S.-China-Taiwan triangle.

In general, the main research question of this chapter is how the shift of power structure and the regime change of Taiwan altered negative-or-positive patterns and the volatility of state behaviors in the U.S.-China-Taiwan triangle. There are three sections in this chapter. The first section is a brief discussion about the theoretical implications of the end of Cold War and Taiwan's democratization. The second is a statistical analysis about the impacts of the Cold War and its end. The third section is to observe the changing dynamics in the U.S.-China-Taiwan triangle caused by Taiwan's democratization.

4.1 Theoretical Implication about the Two Structural Breaks

In the IR theory, the end of the Cold War has two implications, which are the end of a stable bipolar system and the shifting nature of the U.S.-China relationship. From the perspective of the realist scholars emphasizing the global structure, like Waltz (1979) and Mearsheimer

(1990), the dissolution of the Cold War system leads to endless regional conflicts definitely because the stable bipolar structure no longer exists. Based on this prediction, a more conflictive cross-strait relationship can be expected. On the other hand, the end of the Cold War also implies the end of the cooperative relationship between China and the United States to balance the Soviet Union. Then, what should be the nature of the U.S.-China relationship after the Cold War? Since the rise of China has been the most spectacular trend after the end of the Cold War, power transition theory provides a pessimistic prediction that the more close the gap of capability between the status quo hegemon and the revisionist challenger is, the more likely a hegemonic conflict will occur (Organski & Kugler 1980). Although the power transition prediction has been criticized in the IR field, scholars also agree that China will be more of a threat to the U.S. interests in East and Southeast Asia rather than a threat in a global scale (Levy 2008). Based on this prediction, a more conflictive U.S.-China relationship can be expected. In this case, the chance for China to tolerate the U.S. inference in the Taiwan Strait will become lower with the closing gap between the United States and China since the Taiwan issue is China's core interest. Thus, a more conflictive cross-strait relationship can be expected in the power transition process. In sum, with the end of Cold War structure, theories in the realist context suggest a more conflictive tendency in cross-strait relations because of the end of the bipolar system and the shifting nature of the U.S.-China relations after the Cold War.

The problem of the neorealist prediction is that in general, realist scholars tend to define and operationalize instability as the occurrence of conflictive events or even war. This definition has two weaknesses. First, war is not the only form of conflict. Second, the definition ignores another dimension of instability, which is the greater variance of behavioral pattern. This chapter may contribute to deal with the weaknesses in two ways. First, the GDELT event data applied in

this dissertation helps expand the scope of conflictive behavior ranging from verbal conflict to material conflict. More importantly, it helps test the validity of the neorealist prediction in the real world when stability is not only a dichotomous variable between war and peace. Second, the GARCH model applied in this chapter helps explore how the Cold War or the end of the Cold War influences the volatility of state behaviors in the triangle since all kinds of behavior have been quantified by the GDELT event database. As to the growing economic interdependence between Taiwan and China following the end of the Cold War, the impact will be discussed in the next chapter.

On the other hand, Taiwan's democratization has a great impact on not only Taiwan's "one China" position but also the framework of the Three Communiqués and One Act. Many foreign policy studies have suggested a correlation between incomplete democratization and the potential for military conflict. Mansfield and Snyder (2005) indicate that there is a great risk of military conflict for the incomplete transition from autocracy toward democracy. Due to the lack of institutional capacity to deal with the rising civil demand and politicians' calculation to win elections, electoral agenda is easily to be dominated by nationalist emotion and prestige strategy, which may lead to military conflicts potentially. In sum, if the correlation is true, a more conflictive relationship between Taiwan and China can be expected during Taiwan's democratization.

More importantly, the nature of Taiwan's domestic politics also makes the correlation between democratization and conflict in the Taiwan Strait appear reasonable. First, the uniqueness of Taiwan's democratization is that democracy is not the only game in town or issue at stake, and the nationalist emotion of Taiwan independence always plays a role in the democratization transition process. For example, far earlier than the establishment of the DPP,

the debate between “independence first” and “democracy first” existed for a long time in the opposition camp. Second, as the main opposition party in Taiwan’s democratization, the output of the DPP’s China policy was usually a product of institutional design and the compromise among historical party factions. The process from the amendment of the party platform to establish the Republic of Taiwan in 1991 to the Resolution on Taiwan's Future in 1999 provides a good example of the compromise between the Formosa faction and the New Tide faction. The New Tide faction was the major force to push the DPP to include Taiwan independence in the party charter in 1991, and the Formosa faction basically held a priority that winning election is more important than advocating the Republic of Taiwan.³³ The 1999 resolution clearly stood in the middle ground of the two factions because it claimed that Taiwan is an independent country in the name of the Republic of China and any change related to Taiwan’s future should be decided by all Taiwanese people. Thus, through the factional politics of compromise within the DPP, Taiwan independence has continually been a part of the DPP’s position toward China, because top leaders of the DPP cannot risk to lose the support from the New Tide faction.³⁴ In sum, it is reasonable to assume that Taiwan’s democratization has a great potential to trigger the tension in the Taiwan Strait due to the nature of Taiwan’s democratization and the DPP’s position on Taiwan independence.

To sum up for the theoretical section, the end of the Cold War and Taiwan’s democratization are not only challenges to the Cold War and the “one China” legacies, but also important cases to reflect the implications of the existing IR theories. First, did the two political

³³ After 2000, the Formosa faction was disunited into several small factions, like the New Century Office and the New Momentum faction, because its important leader, Hsu Hsin-liang, left the DPP. The two smaller factions also stopped functioning several years later.

³⁴ The New Tide faction never shrinks from the position of Taiwan independence, and keeps functioning as the most organized and powerful faction in the DPP.

events cause any behavioral change in the U.S.-China-Taiwan triangle? Both realism and the empirical study of foreign policy predict a higher probability to have a more conflictive relationship between Taiwan and China. This chapter aims to examine the validity of these predictions. Second, how did the two political events influence the volatility of all state behaviors in this triad? Current empirical studies in the IR field seldom directly investigate the volatility of state behavior caused by political events. Empirical works of political science applying a similar methodology focus on the relationship between parliamentary politics and the volatility of foreign exchange rate, like Leblang and Bernhard's (2006) work. Clearly, the behavioral stability of a state is not well explored in the IR field, and this dissertation attempts to explain the stability of state behaviors in the triad with the uncertainty created by the end of the Cold War and Taiwan's democratization. In short, this chapter aims to investigate the changing patterns and the volatility of state behaviors in the triad under the impacts of the end of the Cold War and Taiwan's democratization.

4.2 Method and Variables

This chapter applies an ARIMA(1,1,1)-GARCH (1,1) model to control the bias caused by the serial correlation, non-stationarity and heteroscedasticity problems.³⁵ This model is designed to model both the mean and variance of time series data, so there are two equations in this model, the conditional mean equation and the conditional variance equation. The conditional mean equation helps explain how the negative-or-positive pattern of a state behavior is influenced by other state behaviors and the important political events in the U.S.-China-Taiwan triangle. Taking Taiwan's behavior toward China as example, the conditional mean equation of Taiwan's behavior toward China (DTC) is:

³⁵ For a more detailed discussion about this model specification, see Chapter 2.

$$DTC_t = DCT_{t-1} + DCU_{t-1} + DUC_{t-1} + DTU_{t-1} + DUT_{t-1} + Event\ Dummy + AR(1) \\ + MA(1) + Constant$$

The conditional variance equation is used to examine how the volatility of a state behavior is influenced by other state behaviors and the important political events. Taking Taiwan's behavior toward China as example, the conditional variance equation of Taiwan's behavior toward China (DTC) is:³⁶

$$The\ Varaince\ of\ DTC_t \\ = DCT_{t-1} + DCU_{t-1} + DUC_{t-1} + DTU_{t-1} + DUT_{t-1} + Event\ Dummy \\ + ARCH(1) + GARCH(1) + Constant$$

Regarding the operationalization of the end of the Cold War, a dummy variable (Cold War) is created to denote the Cold War period (coded as 1) and the post-Cold War period (coded as 0). In this chapter, the time of the Cold War ends in June 1989 when the Tiananmen incident occurred.³⁷ As to Taiwan's democratization, a set of dummy variables are created, which are authoritarian rule (authoritarian), democratic transition (transition), and democratic consolidation (consolidation). The democratic transition is usually defined as a replacement of authoritarian institutions with democratic practices, and in most situations the democratic practices are defined by fair, comprehensive, and periodic elections of the most powerful position in a country.³⁸ On the other hand, democratic consolidation is still a concept under

³⁶ The model specification of the conditional mean and variance equations here only takes the direct influence of a certain event (like the Cold War) on a certain behavior (like Taiwan's behavior toward China, DTC) into account, and assume that the interactive effect between the event and other right-hand-side variables (like Cold War*DCT_{t-1}) is irrelevant. The reason to make this assumption is that the GARCH model is notorious for the convergence problem. When more variables are included, it is more likely that STATA fails to converge in the iteration process. I have tried to include all interactive variables in both the conditional mean and variance equations for all models in the following sections and chapters, but all fail to converge and produce regression results. Therefore, I keep the two equations in all models as parsimonious as possible and try to add one or two variables each time to avoid the problem.

³⁷ The reason to select this time point as the date of the end of the Cold War has been discussed in Chapter 2.

³⁸ This dissertation takes the minimalist definition of democracy, see Huntington (1991) and Przeworski (2010).

debate. The Huntington's (1991: 267) "two turnover test" is an easy way to operationalize the concept.³⁹ In the case of Taiwan, the Polity IV Project defines that Taiwan's democratic transition occurred on December 1992 when the whole members of the Legislative Yuan of the R.O.C. were elected directly from Taiwan for the first time in the history.⁴⁰ However, to define transition at this time point has two problems. First, due to the long tradition of the KMT authoritarian rule, the most powerful position in Taiwan is the president rather than the head of the Executive Yuan, or the premier. Second, it may omit Lee Teng-hui's reforms within the KMT regime after 1992. In this case, taking the presidencies of Taiwan is a good choice to indicate the different stages of democratization.

Based on the theoretical guidelines and the reality of Taiwanese politics, the Chiang Ching-kuo period can be defined as the authoritarian period with no doubt. Since democratization is a process and two direct elections, the 1992 Legislative Yuan election and the 1996 presidential election, were held in the Lee Teng-hui period, it is reasonable to take the Lee period as the transition period. Finally, since the "second turnover" occurred in 2008, it is reasonable to take the Chen Sheui-bian and Ma Ying-jeo's periods as the consolidation period.

To sum up, in the following section, I apply the ARIMA(1,1,1)-GARCH (1,1) model to observe how the two political events, the end of Cold War and Taiwan's democratization, influence negative-or-positive patterns and the volatility of state behaviors in the U.S.-China-Taiwan triangle.

³⁹ For a more detailed discussion of democratic consolidation, please check Diamond (1999) and Linz and Stepan (1996).

⁴⁰ The information comes from the website of the Polity Project IV, see Marshall (2010).

4.3 The Impact of the Cold War and Its End

The summarized results of the Cold War model are presented as Table 4.1.⁴¹ In the conditional mean equations, the results reveal how the Cold War influences the negative-or-positive pattern of each state behavior. In the conditional variance equations, the results indicate how the Cold War influences the volatility of each state behavior. Basically, this is the main method to make causal inference in the following sections.

Table 4.1 Summarized Results of the Cold War Model (1979-2012)

	DTC	DCT	DCU	DUC	DTU	DUT
Conditional mean						
Cold War	0.318 (2.10)	-1.099 (1.49)	-4.373 (3.49)	-2.520 (2.38)	-0.637 (1.25)	-0.0487 (0.61)
Conditional Variance						
Cold War	-0.938** (0.20)	-0.405 (0.26)	-1.092* (0.45)	-0.678 (0.43)	-0.161 (0.22)	-1.323** (0.43)

Note: 1. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. 2. Standard errors in parentheses. 3. The rest part of these models is omitted and all tests on standardized residuals show no evidence of serial correlation and heteroscedasticity.

As to the effect of the Cold War, from the results in the conditional mean equations, it is clear that negative-or-positive patterns of all state behaviors are not influenced by the Cold War at all, because the dummy variable of the Cold War is not significant in all equations. Thus, there is no evidence to claim that the end of Cold War causes any shift of negative-or-positive patterns in the triad. In short, the empirical evidence does not support the prediction that the U.S.-China and cross-strait relations are more conflictive in the post-Cold War era.

Checking the realist theories with the statistical results, although neo-realism and power transition theory both suggest a more conflictive dynamics after the Cold War in the triad, the empirical analysis does not support their predictions. If the correlation between the bipolar structure and the lower chance of conflict is true, a positive and significant relationship between the Cold War dummy and the six state behavior variables can be expected. On the other hand, if

⁴¹ The causal relationships between the three actors' behaviors are basically the same as the model in Chapter 3. Table 4.1 only presents the results related to the Cold War variable.

the power transition logic is true, the negative development of the U.S.-China relationship and cross-strait relations after the Cold War can be expected. However, the causal relationship between the Cold War and the relevant state behavior variables fails to be significant at the conventional level in Table 4.1. In short, both neorealist hypotheses do not hold based on the statistical results.

Reviewing the historical reality with the statistical results, there are three reasons to explain why the realist predictions about a more conflictive dynamics do not work. First, although the U.S.-China cooperation was initiated by the common interest to balance the Soviet Union, the dissolution of the “great” triangle never actually shifted the U.S. policy preference from maintaining the stability of the Taiwan Strait with strategic ambiguity. Second, the increasing economic and strategic interests of the opening and rising China make the United States prefer to maintain the U.S.-China cooperation rather than compete with China in a balance of power game. Thus, the balance of power game never really favors the Taiwan side in the post-Cold War era.⁴² More importantly, Taiwan is never the core interest of the United States with a great intrinsic value since the 1970s (Tucker 2009). Third, on the China’s side, the dominant national goal since Deng Xiaoping is to integrate into the world order rather than to be a revisionist state to challenge it like Mao did (Legro 2007). Thus, a hegemonic competition is never an option for China. In sum, both China and the United States have no intention to get into a hegemonic competition and a deviation of the two countries’ preferences from maintaining the status quo never actually takes place. In short, although the Cold War ended in 1989, the legacy remains in the U.S.-China-Taiwan triangle and the framework of the Three Communiqués and One Act still holds.

⁴² For a further discussion about these two points, see Dittmer (2005) and Dittmer (2011).

On the other hand, regarding the results in the conditional variance equations, it seems that the stabilizing effect of the bipolar system really works on the following three state behaviors, Taiwan's behavior toward China (DTC), China's behavior toward the U.S (DCU), and the U.S. behavior toward Taiwan (DUT). Therefore, if defining stability as lower volatility, the results somehow echo the neo-realist hypothesis about the stability in a bipolar system in a certain degree. The statistical evidence shows that the three state behaviors are more stable from 1979 to 1989 and less stable after 1989 because the negative sign of the Cold War variable indicates a lower volatility caused by the Cold War or a higher volatility caused by the end of the Cold War. Figure 4.1 shows the before-after comparison of the three state behavior variables.

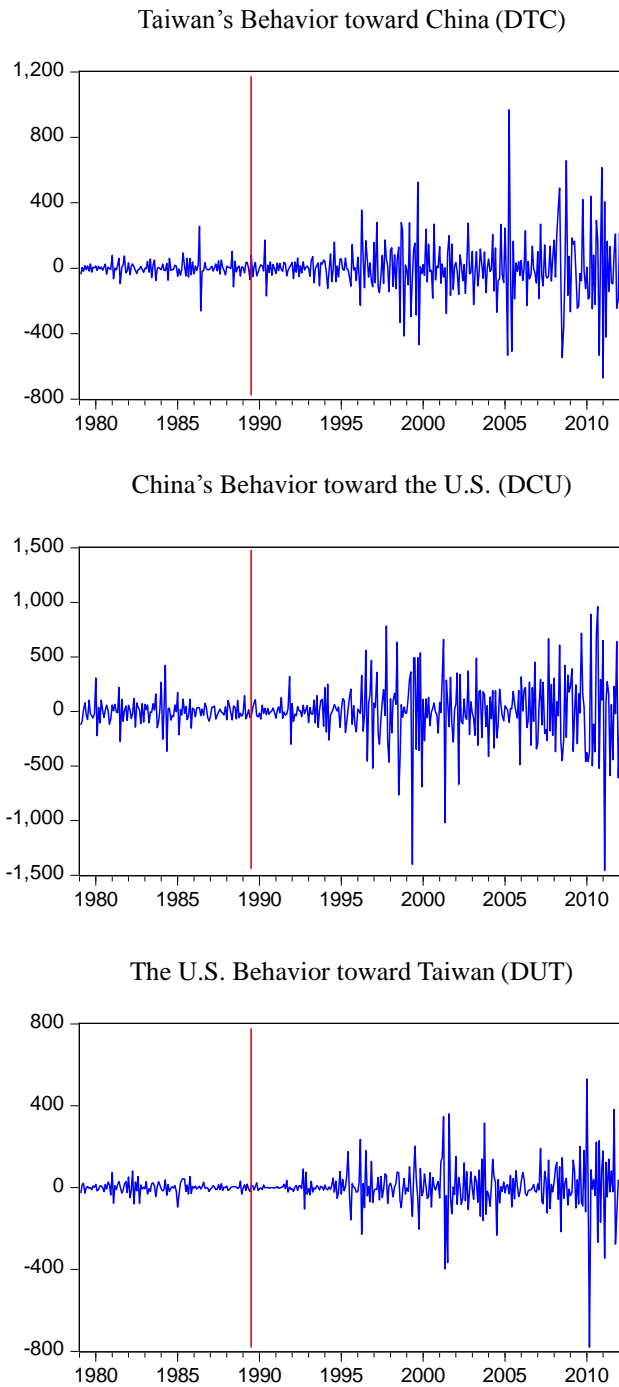


Figure 4.1 The Before-After Comparison of the Cold War Model

As show in Figure 4.1, the volatility of the three state behavior variables (DTC, DCU, and DUT) increases after the mid-point of 1989, and the three variables are more stable in the Cold War era. More importantly, the results again remind the danger to treat a bilateral

relationship as a whole, because the statistical results show no sign of the Cold War effect on the countering behaviors of the three significant behaviors. In short, only Taiwan's behavior toward China (DTC), China's behavior toward the United States (DCU), and the U.S. behavior toward Taiwan (DUT) are influenced by the Cold War structure, because of the higher volatility in the post-Cold War era.

However, checking the time point in Figure 4.1, it seems that a trend toward a greater volatility starts around 1996 for the three behaviors, which is the year of the third Taiwan Strait crisis. In this case, it is also reasonable to test the effect of the 1996 crisis on the stability of all state behaviors in the triad. Therefore, a new dummy variable of the 1996 Crisis (After Crisis) is created to replace the original dummy variable of Cold War in the model, and the summarized results are presented as Table 4.2.⁴³

Table 4.2 The Effect of the 1996 Crisis (1979-2012)

	DTC	DCT	DCU	DUC	DTU	DUT
Conditional mean						
After	-2.580	-0.113	9.031	4.661	1.838	-0.631
Crisis	(2.632)	(1.819)	(5.591)	(4.461)	(1.793)	(1.120)
Conditional Variance						
After	1.850**	1.577**	2.259**	2.046**	1.627**	2.055**
Crisis	(0.214)	(0.244)	(0.224)	(0.285)	(0.204)	(0.421)

Note: 1. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. 2. Standard errors in parentheses. 3. The rest part of these models is omitted and all tests on standardized residuals show no evidence of serial correlation and heteroscedasticity.

The results in Table 4.2 can be summarized as two points. First, like the effect of the Cold War, the 1996 Taiwan Strait crisis do not directly influence negative-or-positive patterns in the triad, but make all state behaviors more volatile or less stable after the crisis. As shown in Table 4.2, the dummy variables is not significant for all state behavior variables in the conditional mean equations, but the variable is positive and significant in all conditional variance equations. Second, it seems that the 1996 Taiwan Strait crisis plays a more significant role in the

⁴³ The data points later than March 1996 are coded as 1, and the data points earlier than March 1996 are coded as 0.

volatility of all state behaviors in the U.S.-China-Taiwan triangle. Compared with the effect of Cold War that only influences the stability of three state behaviors, all state behaviors in the triad are more volatile in the period after the 1996 crisis. In short, it is reasonable to say that the 1996 crisis really makes all state behaviors in the triad less stable, but the end of the Cold War only makes Taiwan's behavior toward China (DTC), China's behavior toward the United States (DCU), and the U.S. behavior toward Taiwan (DUT) less stable.

In sum, although the statistical evidence supports the neo-realist causality in a certain degree, the 1996 crisis works more like a real test for the volatility of state behaviors in the triangle. Moreover, since negative-or-positive patterns in the triad are obviously not influenced by the two events, it is reasonable to say that the Framework of the Three Communiqués and One Act still works. However, since the greater volatility is evident after the two events, especially the 1996 crisis, it is very likely that the dynamics and momentum under the surface of the framework are not as smooth as the surface looks like. Thus, perhaps after the two events, a new dynamics is forming while the old regime still holds in the triad.

To sum up for this section, the statistical analysis does not support the predictions made by power transition theory and neo-realism in general. Both theories suggest a conflictive development in cross-strait relations due to the change of power structure at the international level. The statistical results show that there is no evidence to support a more conflictive pattern in the post-Cold War period in the U.S.-China-Taiwan triangle. However, it is reasonable to claim that some state behaviors are more "stable" or less volatile in the Cold War era as the neo-realists predict, but the effect of the 1996 crisis has a more comprehensive impact on the stability of state behaviors in the triad.

4.4 The Impact of Taiwan's Democratization

The impact of Taiwan's democratization process is very similar with the Cold War effect. In general, based on the statistical results, the different stages of Taiwan's democratization do not lead to any change for negative-or-positive patterns in the U.S.-China-Taiwan triangle, but some state behaviors are more volatile and less stable in some stages. Thus, Taiwan's democratization does not directly influence negative-or-positive patterns in the triangle, but makes the dynamics within the triangle less stable. The summarized results including the dummy variables of Taiwan's democratization process are presented as Table 4.3.⁴⁴

Table 4.3 Summarized Results of the Democratization Model (1979-2012)

	DTC	DCT	DCU	DUC	DTU	DUT
Conditional mean						
Authoritarian	-0.0966 (1.84)	0.380 (1.93)	-3.827 (3.01)	-1.576 (2.48)	-0.762 (1.29)	0.274 (0.53)
Transition	1.362 (1.97)	1.211 (1.54)	2.148 (3.20)	0.0630 (2.33)	0.507 (1.22)	-0.0890 (0.57)
Consolidation	-4.867+ (2.84)	-1.549 (2.06)	6.970 (4.41)	6.186 (4.25)	1.191 (1.87)	-0.519 (1.41)
Conditional Variance						
Authoritarian	-0.694** (0.17)	0.969* (0.40)	-0.653+ (0.40)	-0.488 (0.49)	0.258 (0.21)	-1.227* (0.57)
Transition	-0.0500 (0.19)	-0.666* (0.29)	0.460 (0.38)	0.199 (0.40)	-0.628** (0.19)	0.850 (0.59)
Consolidation	1.369** (0.29)	1.212** (0.29)	0.814** (0.29)	0.502 (0.43)	1.270** (0.27)	2.126** (0.50)

Note: 1. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. 2. Standard errors in parentheses. 3. The rest part of these models is omitted and all tests on standardized residuals show no evidence of serial correlation and heteroscedasticity.

As shown in Table 4.3, none of the dummy variables about democratization is significant at 5% level in the conditional mean equations. The results imply that Taiwan's democratization process does not change the development of negative-or-positive patterns in the triad. In other

⁴⁴ As mentioned before, to add three dummy variables (authoritarian, transition, consolidation) in both the conditional mean and variance equations of all state behaviors makes all models fail to converge and produce regression results. Therefore, I run the regression three times and add only one dummy variable each time to compare the impacts of the three transition periods on the interactions of the U.S.-China-Taiwan triangle. Thus, the results in Table 4.3 is the comparison of the results when a certain dummy variable is included in the conditional mean and variance equations.

words, although Taiwan's democratization attempts to emphasize the de facto independence of Taiwan, the existing framework of negative-or-positive patterns in the triangle remains. Thus, there is also no evidence to support the claim that the democratization process changes negative-or-positive patterns of cross-strait relations. In sum, the results suggest that the correlation between democratic transition and conflictive behaviors still needs a further consideration at least in the U.S.-China-Taiwan triad.

Reviewing the theoretical relationship between democratization and conflict, it seems that in the case of Taiwan there is no evidence indicating that Taiwan's behavior toward China is more conflictive in the process of democratic transition as Mansfield and Snyder suggest. However, the dependent variable in their empirical study is war or military conflict, but in this model it is conflictive behaviors ranging from verbal conflict to material conflict. Therefore, it is obvious that when extending the range of conflict, the correlation between regime change and conflict may not be as clear as Mansfield and Snyder suggest.

On the other hand, the results in the conditional variance equations show that in general the variance of state behaviors in the triad is higher in the consolidation period. As to the period of the KMT authoritarian rule, Taiwan's behavior toward China (DTC) and the U.S. behavior toward Taiwan (DUT) have a lower volatility while China's behavior toward Taiwan (DCT) has a higher volatility in this period. The results are quite reasonable because it is consistent with the history after the normalization of the U.S.-China relationship. After 1979, Taiwan still held the "three noes" policy toward China, which made any negotiation, communication, and compromise between the two sides of the Taiwan Strait impossible. The U.S. policy toward Taiwan had no significant change since the Taiwan Relations Act passed. Therefore, the lower volatility of Taiwan's behavior toward China (DTC) and the U.S. behavior toward Taiwan

(DUT) in Table 4.3 is quite reasonable when comparing with the history. In sum, it seems that when Taiwan does not challenge or attempt to deviate from the “one China” position, Taiwan’s behavior to China and the U.S. behavior to Taiwan tend to be stable. In short, regarding the volatility of cross-strait relations, Taiwan’s behavior toward China has a lower volatility while China’s behavior toward Taiwan has a greater volatility in the period of the KMT authoritarian rule.

As to the period of democratic transition (1989-2000), the statistical analysis shows that China’s behavior toward Taiwan (DCT) and Taiwan’s behavior toward the United States (DTU) are less volatile or have a lower variance in this period. In other words, in cross-strait relations, only China’s behavior toward Taiwan is influenced by Taiwan’s democratic transition, but the effect of Taiwan’s democratic transition is a stabilizing effect because the coefficient is negative. However, the results may be biased by omitting the 1996 crisis. Therefore, it is necessary to further divide the transition period (the Lee presidency) into the first half of transition before March 1996 and the second half after March 1996 to observe the difference in the transition period. The summarized results are presented as Table 4.4.

Table 4.4 The Before-After Comparison in the Transition Period

	DTC	DCT	DCU	DUC	DTU	DUT
Conditional mean						
Before the	1.411	0.850	2.123	0.574	0.508	-0.0668
1996 Crisis	(1.77)	(1.10)	(3.39)	(2.39)	(0.80)	(0.57)
After the	11.25*	5.793+	7.051	7.552	1.238	-0.328
1996 Crisis	(4.55)	(3.48)	(12.7)	(12.3)	(1.55)	(1.76)
Conditional Variance						
Before the	-0.0294	-0.762**	0.388	-0.189	-0.375+	0.728
1996 Crisis	(0.19)	(0.24)	(0.42)	(0.32)	(0.20)	(0.61)
After the	0.804	0.963+	0.736	1.996**	-0.355	1.758+
1996 Crisis	(0.83)	(0.56)	(0.65)	(0.43)	(0.41)	(1.06)

Note: 1. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. 2. The rest part of this model is omitted and all tests on standardized residuals show no evidence of serial correlation and heteroscedasticity.

Two findings are important about the results of dividing the transition period by the 1996 crisis. First, as shown in the conditional mean equations, after the 1996 crisis, Taiwan's behavior toward China (DTC) is in fact more positive than before.⁴⁵ In average, after the 1996 crisis, the growth of the net cooperation score of Taiwan's behavior toward China per month is 11.25 higher than the average growth from 1979 to 2012. Therefore, checking the results in Table 4.3 and 4.4 together, it is clear that the correlation between democratic transition and higher probability of conflict does not occur in cross-strait relations, and Taiwan is in fact more cooperative after a crisis near war.

Second, as shown in the conditional variance equations, the 1996 crisis influences the stability of two state behaviors, which are China's behavior toward Taiwan (DCT) and the U.S. behavior toward China (DUC). China's behavior toward Taiwan (DCT) is more stable or less volatile before the 1996 crisis, and the U.S. behavior toward China (DUC) is less stable after the 1996 crisis. Comparing Table 4.3 with Table 4.4, in general Taiwan's democratic transition does not create too much uncertainty for China's behavior toward Taiwan, especially before the 1996 crisis. The lower volatility of China's behavior toward Taiwan (DCT) in the transition period is evident in Table 4.3, but the stabilizing effect mainly comes from the period before the 1996 crisis as Table 4.4 shows. Therefore, even when taking the 1996 crisis into account, there is still no evidence to support the claim that cross-strait relation are less stable in the transition period.

As to the period of democratic consolidation (2000-2012), in Table 4.3, almost all state behaviors, besides the U.S. behavior toward China (DUC), are more volatile in this period because of the positive sign of the dummy variable of democratic consolidation in all conditional

⁴⁵ China's behavior toward Taiwan is (DCT) more positive after the 1996 crisis, but it is not significant at 5% level.

variance equations. However, since the consolidation period is a combination of the Chen and Ma presidencies, it is worth trying to take the partisan alternation in Taiwan into account.

In theory, the partisan alternation in Taiwan has a great potential to influence negative-or-positive patterns or the behavioral stability in the triad, because it somehow represents Taiwan's willingness to stay on the original "one China" position. In Taiwan, the first partisan alternation occurred in 2000 when the pro-independence DPP won the presidential election, and the second one occurred in 2008 when the pro-unification KMT won the presidential election. Thus, in order not to be misled by ignoring the effect of partisan alternation after 2000, two dummy variables indicating the Chen and Ma's presidencies are created to replace the variable of democratic consolidation in the democratization model. The summarized results after replacing the original variable of democratic consolidation are shown in Table 4.5.

Table 4.5 The Before-After Comparison in the Consolidation Period

	DTC	DCT	DCU	DUC	DTU	DUT
Conditional mean						
Chen	-2.469 (2.89)	-0.667 (2.00)	5.607 (4.55)	4.339 (3.62)	0.0305 (2.05)	-2.514 (1.56)
Ma	-9.830+ (5.87)	-5.870 (5.18)	21.01 (13.2)	14.79 (13.1)	9.150* (4.62)	9.431* (4.02)
Conditional Variance						
Chen	-0.0294 (0.19)	-0.762** (0.24)	0.388 (0.42)	-0.189 (0.32)	-0.375+ (0.20)	0.728 (0.61)
Ma	0.804 (0.83)	0.963+ (0.56)	0.736 (0.65)	1.996** (0.43)	-0.355 (0.41)	1.758+ (1.06)

Note: 1. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. 2. The rest part of this model is omitted and all tests on standardized residuals show no evidence of serial correlation and heteroscedasticity.

There are also two important findings about the consequence of the partisan alternation in the consolidation period. First of all, in the conditional mean equations, the results show that there is no evidence indicating that the Chen's presidency causes any change on negative-or-positive patterns, but the U.S.-Taiwan relationships go toward a more cooperative or positive direction in the Ma period. In average, the growth of the net cooperation score of Taiwan's

behavior toward the United States and the U.S. behavior toward Taiwan is about 9.0 higher than the average from 1979 to 2012 in the Ma period. In short, a positive development of the U.S.-Taiwan relationship is evident during the Ma presidency in the consolidation period, and the conventional wisdom about the negative tendency caused by the DPP leaders is not supported by the results in Table 4.5.

Second, in the conditional variance equations, it is evident that during the Chen period (2000-2008) the volatility of China's behavior toward Taiwan (DCT) is lower and the volatility of the U.S behavior toward China (DUC) is higher in the Ma period (2008-2012). The lower volatility of China's behavior toward Taiwan shows that China's policy toward Taiwan is quite stable in the period of the DPP's rule. Unlike what the conventional wisdom argues, it seems that China does not feel so "uncertain" about the DPP's policy in the Chen period. Or it may be reasonable to say that the DPP's policy is in fact quite predictable from China's perspective from 2000 to 2008. On the other hand, the higher volatility of the U.S. behavior toward Taiwan in the Ma period is also evident, which may reveal the uncertainty in the U.S. decision-makers' minds about Taiwan's over leaning on China in the Ma period. In sum, after dividing the consolidation period into the DPP-ruled and the KMT ruled periods, the greater volatility for almost all state behaviors in the consolidation period is no longer evident. Therefore, it is very likely that the great volatility in the consolidation period as shown in Table 4.3 is an average effect, and the partisan alternation in Taiwan after 2000 is the main reason for the great volatility in the triad.

To conclude for the impact of Taiwan's democratization, in general the statistical analysis does not support the claim that different stages of Taiwan's democratization cause the shift of negative-or-positive patterns in the U.S.-China-Taiwan triangle. More specifically, the pattern of a more conflictive tendency in cross-strait relations is not evident in the transition

period. In other words, Mansfield and Snyder's rationale that incomplete democratization leads to conflict is not supported by the case of the U.S.-China-Taiwan triangle from 1979 to 2012 in general.

On the other hand, the statistical analysis somehow suggests that the volatility of some state behaviors in the triad is different in the three stages of Taiwan's democratization. In general, the pattern is that the volatility is higher for most state behaviors in the consolidation period. As to cross-strait relations, after controlling for the 1996 crisis and the partisan alternation after 2000 in the transition and consolidation periods, the statistical evidence shows a lower variance of China's behavior toward Taiwan (DCT) before the 1996 crisis in the transition period and during the DPP ruled period in the consolidation period. Both results of the before-after comparison in the two periods reveal China's sensitivity on Taiwan's domestic politics, but not in a way that Taiwan's pro-independence preference leads to the instability of China's behavior toward Taiwan.

4.5 Conclusion

Do the end of the Cold War and the stages of Taiwan's democratization play an important role to reveal the different before-after dynamics in the triad? The answer is mixed. On the one hand, in general, both political events do not directly alter negative-or-positive patterns in the triangle. As to the effect of the Cold War, although both neo-realism and power transition theory suggest a more conflictive tendency in the U.S.-China relations and cross-strait relations, the results in the conditional mean equations do not show any sign to support the realist hypotheses as shown in Table 4.1. As to the correlation between democratic transition and the conflictive tendency, there is no evidence to support the correlation in Taiwan's transition

period. More importantly, after controlling for the effect of 1996 crisis, Taiwan's behavior toward China (DTC) is in fact more cooperative in the second half of the transition period.

On the other hand, the two political events indeed influence the volatility of some state behaviors in the triangle. As to the effect of the Cold War, the empirical evidence shows that some state behaviors are more "stable" or less volatile in the Cold War era. In cross-strait relations, the stabilizing effect of bipolarity works only on Taiwan's behavior toward China. Therefore, if defining stability as lower volatility, the results somehow echo the neo-realist hypothesis about the stability in a bipolar system in a certain degree. However, the 1996 crisis has a more comprehensive impact on the stability of all state behaviors in the triad than the end of the Cold War. Basically, all state behaviors are less stable after the crisis.

As to the effect of Taiwan's democratization on the stability of the triad, it is evident that the volatility is higher for most state behaviors in the consolidation period. As to cross-strait relations, Taiwan's behavior toward China (DTC) is more stable while China's behavior toward Taiwan (DCT) is less stable in the period of the KMT authoritarian rule. For the transition and consolidation periods, after controlling for the 1996 crisis and the partisan alternation in 2008 in the two periods, the statistical evidence shows a lower variance of China's behavior toward Taiwan (DCT) before the 1996 crisis in the transition period and during the period of the DPP rule in the consolidation period. Both results in the two periods reveal that Taiwan's leadership have an impact on the stability of China's behavior toward Taiwan, but the relationship is different from what conventional wisdom suggests, which may need a further investigation.

CHAPTER 5. THE IMPACT OF ECONOMIC INTERDEPENDENCE AND ELECTION

The main research question of this chapter is how the election cycle in Taiwan and cross-strait economic interdependence influence negative-or-positive patterns and the stability of cross-

strait relations. Based on the results in the previous chapters, it is also clear that the U.S.-China-Taiwan interactions are factors that cannot be omitted when analyzing cross-strait relations. Therefore, the goal of this chapter is to include the U.S.-China-Taiwan triangular politics, cross-strait economic interdependence, and Taiwan's election cycle into analysis to build a general model about cross-strait relations.

As Taiwan's political system transformed into a democracy, domestic politics itself became an independent variable that can influence the US-China-Taiwan interactions. In particular, elections in Taiwan became a new important factor possibly influencing the state of cross-strait relations. Under the authoritarian KMT regime, the latent assumption of Taiwan's policy toward China was based on the Chinese Civil War legacy, which assumed that Taiwan and China are bound to be united with the end of the Chinese Civil War. However, after democratization this assumption has shifted and it is now usually challenged in the debates during Taiwan's elections since the main political cleavage goes along with the unification-or-independence division in Taiwan. Thus, the possibility for Taiwan to stay on the "one China" position may be influenced by the campaigning process. First, Taiwanese politicians may have the incentive to utilize Taiwan's sovereign issue, like to stand tough toward China or to emphasize the independent status of Taiwan, for winning voters' support during the election, which may agitate China. Second, after winning the election, Taiwanese politicians may need to compromise or tune down the electoral tension on the sovereign issue to avoid further conflicts with China. More importantly, empirical studies also suggest a correlation between election cycle and military conflict. In this case, it is reasonable to assume a correlation between the approach of Taiwan's general election and a conflictive or instable tendency in cross-strait relations, and this chapter aims to assess the validity of this correlation.

On the other hand, Taiwan's democratization also brings another consequence, which is Taiwan's liberalization of trade regulation toward China. Since the foundation of the KMT authoritarian regime in Taiwan was based on the need to suppress the CCP rebellion for national unification, any trade or investment related to China was deemed as a collaboration with the enemy in Taiwan's legal system. Liberalization of investment and trade toward China started in the early 1990s and the amount of cross-border trade between Taiwan and China grew rapidly after then. Since the strong economic tie may increase the cost to engage military conflict based on the liberal peace literature, the increasing level of economic interdependence may lead to a more positive and stable development in cross-strait relation. However, to date, the question for Taiwan is no longer "how much Taiwan should liberalize trade and investment." Instead, it is "how much Taiwan should regulate" since Taiwan's asymmetric dependence on China has been an undeniable trend. The political impact of this asymmetry has also become a hot issue in Taiwan's elections. In this case, it is also reasonable to assume that the more dependent, the more likely to cooperate in cross-strait relation. In sum, the effects of economic interdependence and asymmetric dependence will both be examined in this chapter.

There are three sections in this chapter. First, I will review the relevant literature and summarize the causalities in theory and the implications in cross-strait relations. Second, a statistical analysis will be presented to assess the effects of economic interdependence and Taiwan's election cycle. Third, due to the significance of Taiwan's asymmetric dependence on China, a model to assess the effects of asymmetric dependence and the election cycle will be presented in this section.

5.1 Theoretical Background

Besides the power politics in the U.S.-China-Taiwan triangle, economic interdependence and Taiwan's domestic politics start to become significant factors in cross-strait relations after Taiwan's democratization. As to the effect of economic interdependence, the IR liberal theorists suggest the trade-promote-peace hypothesis to depict a relationship between economic interdependence and the potential for conflict (Keohane & Nye 1977; Oneal & Russett 1999). In cross-strait relations, does the increasing level of economic interdependence influence negative-or-positive patterns of cross-strait relations? This is one of the questions that this chapter aims to answer.

Based on Keohane and Nye's (1977: 12-13) theory, there are two elements in the concept of economic interdependence which are sensitivity and vulnerability. Sensitivity is related to the cost of change, and is usually measured by the amount of trade flows across borders. In other words, the latent assumption of sensitivity is that the greater the amount of trade flow is, the more costly it is to disrupt the trade relations. It is reasonable to say the concept of sensitivity is to capture the opportunity cost to interfere the trade flow across borders. Therefore, in cross-strait relations, it is reasonable to expect a more cooperative development with the increasing level of cross-strait trade flow. Vulnerability, on the other hand, is related to the ability to offset or endure a costly change. In other words, how efficient a state can self-adjust to the costly change is what the concept of vulnerability wants to capture. However, this concept may be not easy to measure. Since Taiwan's asymmetric dependence on China is evident, Taiwan may be more vulnerable than China when facing the threat to cease the economic tie. In other words, the asymmetric dependence can also work as a leverage to induce cooperation, so the effect of

dependence in cross-strait relations should also be considered. In this chapter, both elements (sensitivity and vulnerability) in the concept of economic interdependence will be examined.

The relationship between economic interdependence and the potential for conflict has been confirmed in Oneal and Russett's (1999) empirical study. However, the validity of the trade-promote-peace hypothesis has been criticized from both the theoretical and empirical aspects. From the theoretical aspect, the realists argue that it is very likely that the causality between trade interdependence and peace is a spurious relationship since it fails to consider the relative gains problem, the security externality problem, hegemonic stability, and alliance relationships (Gilpin 1981; Gowa 1995; Grieco 1988). In other words, without controlling for the effect of power politics at the international level, the causal relationship between economic interdependence and peace may be biased. From the empirical aspect, Taiwanese scholars also argue that some important variables are omitted, like Taiwan's domestic politics characterized by the struggle between the pro-unification and pro-independence positions or China's strategy to transform the economic tie into a political leverage (Chu 1997; Tung 2003). More importantly, the pacifying effect of economic interdependence is also conditioned by the salience of trade and trade symmetry in a bilateral relationship (Barbieri 2005). Thus, based on what the relevant studies suggest, the validity of the trade-promote-peace hypothesis in the Taiwan Strait can be confirmed only when the three following factors are controlled: (1) the international power politics, (2) the salience and symmetry of economic interdependence, and (3) Taiwan's domestic politics.

For controlling for the three factors, the model in this chapter includes the strategic interactions in the U.S.-China-Taiwan triangle, Taiwan and China's dependence on cross-strait trade flow, and Taiwan's election cycle to analyze cross-strait relations. First, the strategic

interactions in the U.S.-China-Taiwan triangle help control the United States and China's political leverage in cross-strait relations. Second, economic interdependence is not be a single variable in this chapter, and will be operationalized by two variables, Taiwan's and China's dependence on cross-strait trade flow.⁴⁶ This way of operationalization can help control the different level of salience and symmetry for Taiwan and China. Third, Taiwan's election cycle helps capture the changing political dynamics in Taiwan. More importantly, the model in this chapter also helps figure out a critical question: What is the relative importance of international versus domestic factors in influencing cross-strait relations?

For answering the question more properly, China's domestic politics should also be controlled. Since China is still a single-party regime, the power transition within the CCP is the most important factor of policymaking.⁴⁷ Therefore, in the following analyses, the term of the highest body within the CCP, the National CCP Congress, will be included to control the change of China's domestic politics. Although the highest status of the National CCP Congress only exist in theory, the top leadership in the CCP still need the approval of the National Party Congress. More importantly, the political agenda of the ten-year term of China's leadership after Deng goes along with the seven plenums of the Central Committee within the five-year cycle of the National Party Congress.⁴⁸ In short, the National CCP Congress may not as important as it should be, but its cycle may include some information about the power transition of the CCP.

As to the effect of election on military conflicts, empirical studies of foreign policy suggest a correlation between election cycle and conflict. Regarding the rationale behind the

⁴⁶ See Chapter2 for details.

⁴⁷ Based on Geddes's (1999) standard and Linz and Stepan's (1996) classification, it is reasonable to define China as a single-party regime.

⁴⁸ Wu (2005b: 59) also suggests that the role of the CCP party congress can be seen as the presidential elections in Taiwan and the United States

causality, Mansfield and Snyder's (1990; 1995; 2005) studies suggest that the war-prone tendency of the democratizing states comes from politicians' utilization of nationalist emotion and prestige strategy for winning elections. On the other hand, about the timing to engage a military conflict, empirical studies show that the closer to elections, the more likely a conflict will occur. Taiwanese scholars, like Wu (2011), have argued that the aggressive behavior is more likely to take place at the end of the election cycle in Taiwan, but cross-national studies show that aggressiveness tends to occur at the early stage of the election cycle (Gaubatz 1991). In other words, both studies reveal that aggressive behaviors tend to occur in a shorter period before and after elections. In the case of cross-strait relations, based on the nature of Taiwan's domestic politics, Taiwanese politicians' position on the "one China" issue may be influenced by the timing of election easily. First, Taiwanese politicians may have the incentive to utilize Taiwan's sovereign issue, like to emphasize the independence status of Taiwan, for winning voters' support during the election, which may agitate China. Second, after winning the election, Taiwanese politicians may need to compromise or tune down the electoral tension on the sovereign issue to avoid further conflicts with China. From the cases of the 1996 crisis and Chen Shui-ban's referendum strategy for reelection in 2004, it is easy to assume that the approach of Taiwanese election causes a conflictive tendency in cross-strait relations due to politicians' calculation in the campaigns. However, the validity of this assumption may be questionable, and this chapter aims to use statistical analysis to test it.

According to the summary of the relevant literature, this chapter will test the following hypotheses with statistical analysis.

H1 Trade-Promote-Peace Hypothesis

Based on the conflictive nature between Taiwan and China on the sovereignty issue, the positive development of Taiwan's dependence on cross-strait trade flow leads to the positive development of Taiwan's behavior toward China, and the positive development of China's dependence on cross-strait trade flow leads to the positive development of China's behavior toward Taiwan.

Based on the conflictive nature between Taiwan and China on the sovereignty issue, the negative development of Taiwan's dependence on cross-strait trade flow leads to the negative development of Taiwan's behavior toward China, and the negative development of China's dependence on cross-strait trade flow leads to the negative development of China's behavior toward Taiwan.

H2 Electoral Tension Hypothesis

The closer Taiwan's presidential and parliamentary elections are, the more likely a negative development of cross-strait relations will occur.

Besides the hypotheses about positive-or-negative patterns of cross-strait relations, the existing literature mentions less about the stability of state behavior. In general, I hypothesize a relationship between uncertainty and behavioral instability for cross-strait relations. Any behavior disrupting the status quo creates uncertainty for decision-makers and then leads to behavioral instability because the original behavioral patterns are not sufficient to respond the change. Following this logic, I hypothesize that the positive development of economic interdependence leads to stability while the approach of Taiwan's general elections leads to instability for cross-strait relations.

H3 Trade-Promote-Stability Hypothesis

Given that economic interdependence is a general trend in cross-strait relations, the positive development of Taiwan's dependence on cross-strait trade flow leads to a lower volatility of Taiwan's behavior toward China, and the positive development of China's dependence on cross-strait trade flow leads to a lower volatility of China's behavior toward Taiwan.

Given that economic interdependence is a general trend in cross-strait relations, the negative development of Taiwan's dependence on cross-strait trade flow leads to a higher volatility of Taiwan's behavior toward China, and the negative development of China's dependence on cross-strait trade flow leads to a higher volatility of China's behavior toward Taiwan.

H4 Electoral Instability Hypothesis

The closer Taiwan's presidential and parliamentary elections are, the higher volatility of cross-strait relations is.

5.2 The Effects of Trade Interdependence and Elections

In this chapter, the economic interdependence is defined as trade interdependence, which represents the concept of sensitivity in economic interdependence. The pacifying effect of economic interdependence is based on the idea that “the higher the fraction of total output crossing state boundaries, the more costly would be the interruption of such flows” (Mansfield & Pollins 2003: 12). In this light, the level of economic interdependence in this section will be measured by the portion of trade flow including imports and exports between China and Taiwan represented in the total trade amount of China (Ctrade) and in the total trade amount of Taiwan (Ttrade).⁴⁹ In other words, the two variables represent Taiwan and China's dependence on cross-

⁴⁹ China's trade statistics comes from China monthly statistics (State Statistical Bureau 1992). Taiwan's trade

strait trade flow respectively. This trade interdependence measurement helps not only to capture the mutual effect coming from the interdependent relationship, but also reveals the salience of cross-strait trade flow in China and Taiwan's economies.

The research design and methodology are similar with previous chapters. Limited by the availability of the related trade data, the time period in this chapter is shorter than the previous two chapters. Unlike the GDELT database backing to 1979, the monthly statistics about cross-strait economic interactions starts from 1990. Therefore, the time period in this chapter is from 1990 to 2012. Because of the change of time period, all tests to detect the problems of autocorrelation, non-stationarity, and heteroscedasticity for time series variables have to be redone. The results are shown in Appendix B, and based on the results, this chapter also applies an ARIMA(1,1,1)-GARCH(1,1) model as the previous chapters. Similar with the previous two chapters, the conditional mean equation in the model is to show whether a certain variable influences the negative-or-positive pattern of a certain state behavior or not. The conditional variance equation in the model, on the other hand, is to show whether a certain variable influences the volatility of a state behavior or not.

Three groups of variable are included in the interdependence models: all state behaviors in the U.S-China-Taiwan triad, trade interdependence between Taiwan and China, and the domestic politics in Taiwan and China. First of all, all state behavior variables in the triangle are the same as previous chapters, which record the net cooperation score on a monthly basis in a source-target form (DTC, DCT, DCU, DUC, DTU, and DUT). Second, how to measure the level of trade interdependence has been mentioned in the beginning of this section. Third, as to the domestic politics in Taiwan and China, for Taiwan, two kinds of election cycles are included,

statistics comes from the statistics of the Directorate General of Customs on the website of Bureau of Foreign Trade of Taiwan, see <http://cus93.trade.gov.tw/ENGLISH/FSCE/>.

which are presidential elections and parliamentary elections (both the Legislative Yuan elections and the National Assembly elections) in Taiwan. Each election variable is measured by the number of month closing to the next election. For the China side, the term of the National CCP congress is measured as the same way to measure Taiwan's election cycle, the number of month closing to the next term of the Party Congress. Thus, the conditional mean equations of Taiwan's behavior toward China (DTC) and China's behavior toward Taiwan (DCT) can be expressed as:

$$\begin{aligned} DTC_t = & DCT_{t-1} + DCU_{t-1} + DUC_{t-1} + DTU_{t-1} + DUT_{t-1} + Interdependence_{t-1} \\ & + Taiwanese\ Electoral\ Cycle + CCP\ Party\ Congress\ Cycle + AR(1) \\ & + MA(1) + Constant \end{aligned}$$

$$\begin{aligned} DCT_t = & DTC_{t-1} + DCU_{t-1} + DUC_{t-1} + DTU_{t-1} + DUT_{t-1} + Interdependence_{t-1} \\ & + Taiwanese\ Electoral\ Cycle + CCP\ Party\ Congress\ Cycle + AR(1) \\ & + MA(1) + Constant \end{aligned}$$

On the other hand, the conditional variance equations of Taiwan's behavior toward China (DTC) and China's behavior toward Taiwan (DCT) can be expressed as:

The Variance of DTC_t

$$\begin{aligned} = & DCT_{t-1} + DCU_{t-1} + DUC_{t-1} + DTU_{t-1} + DUT_{t-1} + Interdependence_{t-1} \\ & + Taiwanese\ Electoral\ Cycle + CCP\ Party\ Congress\ Cycle + ARCH(1) \\ & + GARCH(1) + Constant \end{aligned}$$

The Variance of DCT_t

$$\begin{aligned} = & DTC_{t-1} + DCU_{t-1} + DUC_{t-1} + DTU_{t-1} + DUT_{t-1} + Interdependence_{t-1} \\ & + Taiwanese\ Electoral\ Cycle + CCP\ Party\ Congress\ Cycle + ARCH(1) \\ & + GARCH(1) + Constant \end{aligned}$$

The results of the trade interdependence model are shown as Table 5.1.

Table 5.1 Results of the Trade Interdependence Model (1990-2012)

	DTC	Standard Error	DCT	Standard Error
Conditional mean				
DTC _{t-1}			0.178*	(0.084)
DCT _{t-1}	0.0454	(0.084)		
DCU _{t-1}	0.0255	(0.074)	0.0391	(0.090)
DUC _{t-1}	-0.0108	(0.071)	-0.00835	(0.084)
DTU _{t-1}	-0.0472	(0.20)	0.176	(0.22)
DUT _{t-1}	0.0147	(0.16)	-0.280	(0.20)
DTtrade _{t-1}	440.8	(1278.1)	-1527.6	(1647.7)
DCtrade _{t-1}	-4132.8+	(2130.5)	-2852.8	(2919.9)
CCPNC	0.0537	(0.091)	-0.0361	(0.095)
Election (Pres.)	0.0603	(0.087)	-0.0289	(0.094)
Election (Parl.)	-0.0485	(0.19)	0.214	(0.19)
AR(1)	0.0627	(0.10)	-0.0874	(0.099)
MA(1)	-0.776**	(0.056)	-0.757**	(0.058)
Constant	-2.452	(5.91)	0.746	(6.41)
Conditional variance				
DTC _{t-1}			-0.000717	(0.0024)
DCT _{t-1}	-0.00694**	(0.0016)		
DCU _{t-1}	-0.00568**	(0.0015)	0.00616**	(0.0019)
DUC _{t-1}	0.00287+	(0.0016)	-0.00301+	(0.0017)
DTU _{t-1}	0.00364	(0.0046)	-0.00967+	(0.0051)
DUT _{t-1}	-0.00439	(0.0035)	0.0101*	(0.0047)
DTtrade _{t-1}	-64.91	(40.6)	-213.1**	(37.1)
DCtrade _{t-1}	-160.2**	(58.2)	-119.1*	(53.7)
CCPNC	0.00877	(0.0098)	-0.00237	(0.0098)
Election (Pres.)	-0.0553**	(0.012)	-0.0602**	(0.014)
Election (Parl.)	0.0346*	(0.014)	0.0235	(0.014)
Constant	7.147**	(0.52)	8.402**	(0.52)
ARCH	0.0985	(0.063)	0.122+	(0.067)
GARCH	0.659**	(0.062)	0.587**	(0.075)
N	268		268	
B Statistic se	0.5687		0.9343	
B Statistic se ²	0.6605		1.0043	

Note: 1. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. 2. The B statistic reports the results of Bartlett's test on standardized residuals, which helps detect serial correlation in the standardized residuals (se) and heteroscedasticity in the squared standardized residuals (se²). 3. All tests and regressions are performed by STATA (ver. 12).

As to the results of the conditional mean equations, there are three important points worth mentioning. First, China's bilateral tit-for-tat pattern toward Taiwan remains significant as the result in Chapter 3. In Table 5.1, Taiwan's behavior toward China (DTC) is significant for China's behavior toward Taiwan (DCT). The positive signs of the coefficient indicates that the

positive development of Taiwan's behaviors leads to China's positive response and the negative development of Taiwan's negative behavior leads to China's negative response. According to the result, when the change of Taiwan's net cooperation score toward China increased 1 point in the last month, the change of China's net cooperation score toward Taiwan increases 0.178 point toward Taiwan in this month. Like the results in Chapter 3, China's behavior toward Taiwan does not have the same tit-for-tat effect on Taiwan's behavior toward China, and Taiwan's negative-or-positive pattern toward China is quite independent. Thus, in fact, Taiwan has an active status in cross-strait relations.

Second, when considering trade interdependence and the domestic politics of Taiwan and China, the statistical results show no sign of any triangularity in negative-or-positive patterns of cross-strait relations. In Chapter 3, when the time scope is from 1979 to 2012, the indirect triangularity from the United States is evident for China because China's behavior toward Taiwan is influenced by the U.S. behavior toward Taiwan.⁵⁰ However, when the time period is from 1990 to 2012 and considering both trade relations and domestic politics together, there is no evidence to support the presence of the U.S. triangularity that influences positive-or-negative patterns of cross-strait relations.⁵¹ There are two possible answers for the disappearance of the U.S. indirect triangularity in the negative-or-positive pattern of China's behavior. First, it is likely that the U.S. indirect triangularity in China's behavior triggered by the U.S. behavior toward Taiwan is an average effect from 1979 to 2012, but the effect may decline after 1990. Secondly, when taking Taiwan's domestic politics and economic interdependence into account, the importance of the U.S. indirect triangularity goes down in the decision-making process of

⁵⁰ See Table 3.2 and Figure 3.4.

⁵¹ But the U.S. triangularity still works in explaining the variance of Taiwan's behavior. See the following analysis.

China.⁵² Therefore, the indirect U.S. triangularity on China works under some conditions and Taiwan's behavior toward China (DTC) is still a significant factor influencing the negative-or-positive pattern of China's behavior. Thus, since China's tit-for-tat response to Taiwan is the only significant pattern in the conditional mean equations, it is reasonable to claim that the Chinese Civil War legacy is the only factor that can influence negative-or-positive patterns of cross-strait relations when taking economic interdependence and Taiwan's domestic politics into account.

Third, neither trade interdependence nor the domestic politics of Taiwan and China affects negative-or-positive patterns of cross-strait relations. In other words, the statistical analysis does not support the trade-promote-peace and electoral tension hypotheses (H1 & H2). The change of cross-strait trade share in Taiwan (DTtrade) and China (DCtrade) is not significant for both Taiwan's behavior toward China (DTC) and China's behavior toward Taiwan (DCT) at 5% level. Furthermore, both Taiwan's election cycles and the cycle of the National CCP Congress do not have significant impacts on Taiwan and China's negative-or-positive patterns toward each other.

As to the results of the conditional variance equations, it is obvious that cross-strait economic interdependence and Taiwan's election cycle do not affect the mean of the net cooperation score of Taiwan or China's behaviors toward each other. Instead, these variables mainly influence the variance of the net cooperation score of Taiwan or China's behaviors toward each other.

⁵² In fact, this pattern is quite consistent because the two models in Chapter 5 and the models in Chapter 6 all suggest the disappearance of the U.S. indirect triangularity in China's negative-or-positive pattern toward Taiwan after 1990.

For Taiwan's behavior toward China (DTC), there are three points worth noting. First, Taiwan's behavior toward China is sensitive to the negative development of China's behavior toward Taiwan (DCT) and China's behavior toward the United States (DCU), and both cause a greater variance of Taiwan's behavior toward China. In other words, beside the bilateral effect from China (DCT), the triangular effect (DCU) also works in explaining the variance of Taiwan's behavior. In short, the negative development of China's behaviors in the triad tends to make Taiwan's behavior toward China less stable, and both triangular and bilateral effects present in influencing the volatility of Taiwan's behavior. Second, Taiwan is only sensitive to the negative development of the share of cross-strait trade flow in China's foreign trade amount (DCtrade) but not sensitive to the share in its own foreign trade amount (DTtrade). This is contradictory with the trade-promote-stability hypothesis (H3). The statistical result shows that the negative change of the share in China leads to a greater instability of Taiwan behavior toward China. In other words, this pattern implies that Taiwan is sensitive to China's dependence on cross-strait trade flow rather than its own dependence on cross-strait trade flow. In short, only China's dependence on cross-strait trade flow influences the stability of Taiwan's behavior to China. Thus, it is reasonable to say that Taiwan is more dependent on cross-strait economic tie than China is, and this pattern also implies that the negative development of China's dependence on cross-strait trade flow creates uncertainty in Taiwan's decision-makers' calculation. Third, the approach of Taiwan's presidential election makes Taiwan's behavior toward China instable while the approach of Taiwan's parliamentary election leads to a lower volatility of Taiwan's behavior to China because of the positive sign of the coefficient of the parliamentary election variable. The result shows a partial support of the electoral instability hypothesis (H4) because of the wrong sign of the coefficient of Taiwan's parliamentary election. Thus, Taiwan's two general

elections do not necessarily cause the negative development of Taiwan's behavior toward China but mainly influences the stability of Taiwan's behavior.

For China's behavior toward Taiwan (DCT), three points are note-worthy. First, China is sensitive to the positive development of China's behavior toward the United States (DCU) and the U.S. behavior toward Taiwan (DUT), and both cause a greater volatility for China's behavior toward Taiwan. Since Taiwan's behaviors do not lead to any disturbance to the stability of China's behavior to Taiwan, it is reasonable to say that the volatility of China's behavior is mainly influenced by the U.S. triangular effect. Second, China is sensitive to cross-strait economic interdependence. In Table 5.1, the two economic interdependence variables (DTtrade & DCtrade) are significant for the variance of China's behavior toward Taiwan. The negative sign of the two coefficients indicates that the negative development of Taiwan and China's dependence on cross-strait trade flow causes a greater volatility of China's behavior toward Taiwan. Therefore, the statistical evidence supports the trade-promote-stability pattern (H3) in China's behavior. Third, China is sensitive to Taiwan's presidential election. The negative sign of the presidential election coefficient indicates that the approach of Taiwan's presidential election makes China's behavior toward Taiwan less stable or more volatile. The cycles of the National CCP Congress and Taiwan's parliamentary election do not influence the variance of China's behavior toward Taiwan. The statistical evidence, thus, only shows that a partial support of the electoral instability hypothesis (H4) because only Taiwan's presidential election causes the instability of China's behavior, but the parliamentary election does not.

To sum up for this section, based on the analysis above, the summarized result about hypothesis testing is shown as Table 5.2. In general, there is no evidence to support the U.S. triangular effect, the trade-promote-peace hypothesis (H1), and the election tension hypothesis

(H2) in negative-or-positive patterns of cross-strait relations. The statistical results of the conditional mean equations only support the presence of the China's tit-for-tat response to Taiwan. In other words, the Chinese Civil War legacy is the only factor that can influence negative-or-positive patterns of cross-strait relations. However, it is too hasty to claim that the U.S. triangularity, cross-strait trade interdependence, and Taiwan's election are irrelevant to cross-strait relations.

Table 5.2 The Result of Hypothesis Testing of the Trade Interdependence Model

Hypothesis	DTC	DCT
Bilateral or Triangular Effects Negative-or-Positive Patterns Volatility	DCT (-), DCU (-)	DTC (bilateral tit-for-tat) DCU (+), DUT (+)
Trade-Promote-Peace (H1)		
Electoral Tension (H2)		
Trade-Promote-Stability (H3)		**
Electoral Instability (H4)	* (presidential election)	* (presidential election)

Note: ** indicates that the hypothesis is supported by the results in Table 5.1.

The results of the conditional variance equations indicate that these factors mainly affect the volatility of Taiwan and China's behaviors toward each other rather than directly influence the negative-or-positive patterns of Taiwan and China's behaviors. First, Taiwan is sensitive to the negative development of China's behaviors in the triad, and China's dependence on cross-strait trade flow, and Taiwan's presidential and parliamentary elections. Although the result indicates that Taiwan is more dependent on the cross-strait trade flow than China, it does not support the trade-promote-stability hypothesis (H3) because cross-strait trade flow in Taiwan's trade share (DTtrade) is not significant. Further, the result partially supports the electoral instability hypothesis (H4), because only the approach of Taiwan's presidential produces instability for Taiwan's behavior, but the approach of parliamentary elections does not. Second, China is sensitive to the positive development of China's behavior toward the United States and the U.S. behavior toward Taiwan, cross-strait flow in both Taiwan and China's trade share, and

the approach of Taiwan's presidential elections. Thus, the result shows a full support of the trade-promote-stability hypothesis (H3), and only a partial support of the electoral instability hypothesis (H4) for China.

5.3 The Effects of Trade Dependence and Elections

In this section, the concept of economic interdependence is defined as vulnerability. The concept of vulnerability is to measure how great the cost that a country can tolerate when an existing interdependent relationship is altered (Keohane & Nye 1977: 13). In order to measure the ability to endure the termination of an existing relationship, the level of dependence is a good indicator to capture the issue of symmetry in a trade relationship. In this section, the asymmetric dependence variable (Dependency) is calculated by subtracting the share of cross-strait trade flow in China's foreign trade (Ctrade) from the share of cross-strait trade flow in Taiwan's foreign trade (Ttrade). Therefore, when the value of the dependence variable is positive, it implies that Taiwan is more vulnerable than China to cease cross-strait economic interdependence, because the share of the cross-strait trade flow in Taiwan is greater than the share in China, which indicates that Taiwan depends on cross-strait economic tie more than China does. In other words, this variable capture the level of Taiwan's dependence on China. Since the logic of vulnerability is that the cost to conflict with the less dependent trade partner is higher, it is reasonable to hypothesize that "the more dependent, the easier to cooperate" for the more dependent actor. On the other hand, for the less dependent actor, the cost to conflict with the more dependent partner is lower. Thus, based on the conflict nature between Taiwan and China on the sovereignty, for the less dependent partner like China, the increasing level of Taiwan's dependence increases the potential for conflict. In short, the dependence variable

attempts to capture the ability to endure the end of an interdependent relationship, and the hypothesized pattern in cross-strait relations is:

H1a Dependency-Induced Cooperation Hypothesis

Based on the conflict nature between Taiwan and China on the sovereignty issue, the positive development of Taiwan's dependence on China leads to the positive development of Taiwan's behavior toward China and the negative development of China's behavior toward Taiwan.

Based on the conflict nature between Taiwan and China on the sovereignty issue, the negative development of Taiwan's dependence on China leads to the negative development of Taiwan's behavior toward China and the positive development of China's behavior toward Taiwan.

On the other hand, since the Taiwan's dependence on cross-strait trade has been a trend after 1990, the decline of Taiwan's dependence on China may also create uncertainty for cross-strait relations. The logic is that any attempt to worsen the status quo creates uncertainty for decision-makers and then leads to instability. Since the current status quo is a trend of Taiwan's increasing dependence on China, I then hypothesize the decline of Taiwan's dependence on China leads to instability for cross-strait relations as follows:

H3a Dependence-Induced Stability Hypothesis

Given that Taiwan's dependence on cross-strait trade is a general trend in cross-strait relations, the positive development of Taiwan's dependence on China leads to a less volatility of both Taiwan's behavior toward China and China's behavior toward Taiwan.

Given that Taiwan's dependence on cross-strait trade is a general trend in cross-strait relations, the negative development of Taiwan's dependence on China leads to a greater volatility of both Taiwan's behavior toward China and China's behavior toward Taiwan.

In this section, the research design, methodology and time period are the same as the previous section, and an ARIMA(1,1,1)-GARCH(1,1) model is applied to see the effects of dependence and election. The results of the model are shown as Table 5.3.

As to the results of the conditional means equations, two points are worth noting. First, China's tit-for-tat response to Taiwan is still evident, because Taiwan's behavior toward China (DTC) is significant for China's behavior toward Taiwan (DCT). The positive sign of the coefficient indicates the presence of tit-for-tat effect. Therefore, this result is the same as the result of the trade interdependence model in the previous section, and the Chinese Civil War legacy is the only factor influencing negative-or-positive patterns of cross-strait relations. Second, there is no evidence to support the hypotheses that the level of dependence and Taiwan's election cycle influence negative-or-positive patterns of cross-strait relations. As shown in Table 5.3, the statistical results do not support both the dependency-induced cooperation (H1a) and electoral tension hypotheses (H2) because the relevant variables are not significant for both Taiwan and China's behaviors.

Table 5.3 Results of the Dependence Model (1990-2012)

	DTC	Standard Error	DCT	Standard Error
Conditional mean				
DTC _{t-1}			0.239**	(0.067)
DCT _{t-1}	0.0440	(0.084)		
DCU _{t-1}	0.0397	(0.087)	0.0574	(0.073)
DUC _{t-1}	-0.0211	(0.081)	-0.0320	(0.073)
DTU _{t-1}	-0.212	(0.22)	0.0985	(0.22)
DUT _{t-1}	0.118	(0.17)	-0.218	(0.20)
DDependency _{t-1}	1126.2	(1274.2)	-92.07	(1276.1)
CCPNC	-0.00700	(0.099)	-0.0239	(0.090)
Election (Pres.)	0.0616	(0.090)	-0.0151	(0.092)
Election (Parl.)	0.00953	(0.19)	0.130	(0.16)
AR(1)	0.00374	(0.11)	-0.183*	(0.091)
MA(1)	-0.754**	(0.059)	-0.751**	(0.053)
Constant	-2.192	(6.22)	-0.0297	(6.20)
Conditional variance				
DTC _{t-1}			-0.00170	(0.0024)
DCT _{t-1}	-0.00542**	(0.0018)		
DCU _{t-1}	-0.00546**	(0.0017)	0.00270	(0.0023)
DUC _{t-1}	0.00367*	(0.0018)	-0.00197	(0.0021)
DTU _{t-1}	0.00271	(0.0059)	-0.0121+	(0.0066)
DUT _{t-1}	-0.00408	(0.0042)	0.0118*	(0.0048)
DDependency _{t-1}	-123.8*	(61.8)	-116.3**	(37.1)
CCPNC	-0.00232	(0.013)	-0.00422	(0.014)
Election (Pres.)	-0.0538**	(0.015)	-0.0771**	(0.014)
Election (Parl.)	0.0533**	(0.016)	0.0215	(0.019)
Constant	7.511**	(0.62)	9.093**	(0.40)
ARCH	0.189**	(0.065)	0.265**	(0.074)
GARCH	0.606**	(0.067)	0.579**	(0.063)
N	268		268	
B Statistic se	0.5687		1.1371	
B Statistic se ²	0.8549		0.8663	

Note: 1. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. 2. The B statistic reports the results of Bartlett's test on standardized residuals, which helps detect serial correlation in the standardized residuals (se) and heteroscedasticity in the squared standardized residuals (se²). 3. All tests and regressions are performed by STATA (ver. 12).

As to the results of the conditional variance equations, basically some behaviors in the triad, Taiwan's dependence on China, and Taiwan's election cycle all help explain the volatility of China and Taiwan's behaviors toward each other. As to Taiwan's behavior toward China, first, Taiwan is sensitive to the negative development of China's behavior toward Taiwan (DCT) and China's behavior toward the United States (DCU) and the positive development of the U.S.

behavior toward China (DUC). In other word, both bilateral and triangular effects help explain the volatility of Taiwan's behavior. Second, Taiwan is sensitive to the negative development of Taiwan's dependence on China. As in Table 5.3, the negative sign of the coefficient of the dependence variable (DDependency) indicates that when Taiwan becomes less dependent on the cross-strait economic tie, the volatility of Taiwan's behavior is greater. In other words, the statistical results support the dependency-induced stability hypothesis (H3a). Third, Taiwan is sensitive to its two elections, but only the approach of Taiwan's presidential elections makes Taiwan's behavior less stable. The approach of the parliamentary elections makes Taiwan's behavior toward China more stable because the coefficient is positive. Therefore, the statistical evidence only support the electoral hypothesis (H4) partially, because only the presidential elections cause instability as the hypothesis predicts.

Regarding Chinese behavior toward Taiwan, first China is sensitive to the positive development of the U.S. behavior toward Taiwan (DUT). The positive sign of the coefficient indicates that the positive development of the U.S. behavior toward Taiwan leads to a greater volatility of China's behavior. Therefore, from China's perspective, the U.S. cooperation toward Taiwan is a dangerous sign that causes uncertainty. Second, China is also sensitive to the negative change of Taiwan's dependence on cross-strait economic tie. The negative sign of the coefficient of the dependence variable (DDependency) confirms the pattern suggested by the dependency-induced stability hypothesis (H3a). Third, China is sensitive to Taiwan's presidential election only. The negative sign of the coefficient means that the closer Taiwan's presidential elections are, the less stable China's behavior toward Taiwan is. Thus, the statistical evidence supports the electoral instability hypothesis (H4) partially. Based on the analysis above, the summarized result about hypothesis testing is shown as Table 5.4.

Table 5.4 The Result of Hypothesis Testing of the Trade Dependence Model

Hypothesis	DTC	DCT
Bilateral and Triangular Effects Negative-or-Positive Patterns Volatility	DCT (-), DCU (-), DUC (+)	DTC (bilateral tit-for-tat) DUT (+)
Dependency-Induced Cooperation (H1a)		
Electoral Tension (H2)		
Dependence-Induced Stability (H3a)	**	**
Electoral Instability (H4)	* (presidential election)	* (presidential election)

Note: ** indicates that the hypothesis is supported by the results in Table 5.3.

To sum up for this section, basically the dependence model shows a similar pattern as the trade interdependence model. First of all, regarding the factors influencing negative-or-positive patterns of cross-strait relations, the statistical evidence only supports the presence of China's bilateral tit-for-tat pattern toward Taiwan. Therefore, like the result in the previous section, the Chinese Civil war legacy is the only significant factor to influence the negative-or-positive patterns between Taiwan and China from 1990 to 2012. On the other hand, there is also no evidence to claim the significance of Taiwan's dependence on China and Taiwan's elections in explaining negative-or-positive patterns of cross-strait relations. Thus, both the dependency-induced cooperation (H1a) and electoral tension (H3) hypotheses are not supported by the statistical evidence. However, it is too hasty to conclude that the U.S. triangularity, Taiwan's trade dependence, and Taiwan's election cycle do not influence cross-strait relations because the statistical analysis in this section shows that these factors mainly influence the stability of Taiwan and China's behaviors.

Second, the results of the conditional variance equations in this model show that the stability of Taiwan and China's behaviors is a function of some state behaviors in the U.S.-China-Taiwan triangle, Taiwan's dependence on China, and Taiwan's presidential election. Both Taiwan and China's behaviors to each other are influenced by the uncertainty caused by the negative change of Taiwan's dependence on China and the approach Taiwan's presidential

election. As to the impact of the strategic interactions in the triangle, Taiwan is sensitive to the negative development of China's two behaviors (DCT & DCU) and the positive development of the U.S. behavior toward China (DUC), and China is sensitive to the positive development of the U.S. behavior toward Taiwan (DUT) only. Thus, the volatility of Taiwan's behavior is influenced by both triangular and bilateral effects while the volatility of China's behavior is mainly caused by the U.S. triangularity. In sum, the model in this section again shows that these factors mainly influence the volatility rather than negative-or-positive patterns of cross-strait relations.

After analyzing the two models, what is the relative importance of the factors from both international and domestic levels in cross-strait relations? It is obvious that both levels are important in explaining the different facets of cross-strait relations. First of all, although the U.S. triangularity is no longer significant for negative-or-positive patterns of cross-strait relations, some state behaviors in the U.S.-China-Taiwan triangle still play a role in explaining the stability of Taiwan and China's behaviors in both models. Second, although Taiwan's negative-or-positive behavioral pattern cannot be explained by any factor in the two models, the stability of Taiwan's behavior can still be explained by the factors from both levels as shown in Table 5.2 and 5.4. Third, China's positive-or-negative behavioral pattern and the stability of China's behavior are only influenced by the factors from the international level because the only variable of China's domestic politics is not significant in both models. As shown in Table 5.1 and Table 5.3, since the cycle of the National CCP Congress does not have a significant impact on China's behavior, it is fair to say that China's negative-or-positive pattern and behavioral stability to Taiwan is only influenced by the international factors.

5.4 Conclusion

To sum up for the whole chapter, it is obvious that the impact of Taiwan's democratization mainly influences the stability rather negative-or-positive patterns of cross-strait relations. Taiwan's democratization introduces two important factors for cross-strait relations, cross-strait economic interdependence and Taiwan's elections. The results of the two models show that these new-introduced factors basically influence the stability of cross-strait relations. As to the influence of the strategic interactions in the U.S.-China-Taiwan, it is clear that the Chinese Civil War legacy is the only factor that can influence negative-or-positive patterns of cross-strait relations. China tit-for-tat response to Taiwan is the only evident pattern, and the U.S. triangularity is no longer a factor that can influence negative-or-positive patterns in cross-strait relations, which is different from the result in the chapter 3. However, the statistical analysis in this chapter still suggests that the presence of the U.S. triangularity in influencing the stability of Taiwan and China's behaviors toward each other.

As to the result of hypothesis-testing, first of all, basically, there is no evidence to support the trade-promote-peace, dependency-induced cooperation and electoral tension hypotheses because the relevant variables are not significant in the conditional mean equations of Taiwan and China's behaviors. Therefore, it is not necessary that the two sides of the Taiwan Strait would be more cooperative with the increasing level of economic independence as the liberal theories suggested. Even when taking Taiwan's dependence on China into account, there is still no evidence indicating that the negative-or-positive development of cross-strait relations is a function of cross-strait economic interdependence. Moreover, Taiwan's two general elections do not necessarily cause a conflictive development for cross-strait relations. Thus, although the main political cleavage in Taiwan goes along with the independence-or-unification debate, the

issue of Taiwan independence debated by politicians in the campaigns does not necessarily lead to a conflictive development in the Taiwan Strait as the relevant literature suggests.

Second, the statistical results in the conditional variance equations of both models support the trade-promote-stability, dependence-promote-stability, and electoral instability hypotheses. This implies that both the negative development of economic interdependence and the approach of Taiwan's presidential election create uncertainty for the decision-making of Taiwan and China's policies toward each other. As to the impact of economic interdependence, the statistical analysis indicates that the volatility of China's behavior is influenced by both shares of the cross-strait trade flows in Taiwan and China, while Taiwan's is only influenced by the share in China. In other words, from Taiwan's perspective, only the negative change of China's dependence on cross-strait trade flow creates uncertainty for its own decision-making. Moreover, it also implies that Taiwan is more dependent on the cross-strait trade flow than China is. The results of the dependence model further confirm that the negative development of Taiwan's dependence on China leads to instability for both Taiwan and China's behaviors. As to the impact of Taiwan's election, the statistical analysis shows that the approach of Taiwan's presidential election produces uncertainty that causes instability for cross-strait relations. Both Taiwan's parliamentary election cycle and the National CCP Congress cycle do not have the same effect on the stability of cross-strait relations. In sum, the analysis in this chapter shows that both economic interdependence and Taiwan's elections are factors to influence the stability of cross-strait relations rather than factors to influence negative-or-positive patterns of cross-strait relations.

To conclude at the end, it is obvious that the factors from both the international and domestic levels are important in explaining the different facets of cross-strait relations. For the

Taiwan side, the U.S. and China's behaviors, cross-strait trade interdependence and Taiwan's presidential election cycles all contribute to explain the stability of Taiwan's behavior. In other words, both levels matter for Taiwan's policy toward China. As to the China side, both the negative-or-positive pattern and stability of China's behavior are only influenced by the international factors, because the variable related to China's domestic politics is not significant in both models. Thus, it is obvious that Taiwan's presidential election is an important factor for the stability of both China and Taiwan's behavior, but China's domestic politics does not have the same salience in cross-strait relations, at least in the analysis of this chapter.

CHAPTER 6. THE IMPACT OF LEADERSHIP CHANGE IN TAIWAN

The main research question of this chapter is: What is the relationship between leadership change in Taiwan and cross-strait relations? After Taiwan's democratization, leadership change in Taiwan becomes an important variable because Taiwan's pro-independence actors start to have the opportunity to win elections and further to influence Taiwan's policy toward China. The partisan alternation from the KMT to DPP in 2000 is a good example. Since the main political cleavage in Taiwan goes along with the independence-or-unification line, it is reasonable to assume that leaders from the KMT and DPP hold different preferences about Taiwan's relations with China. More importantly, the conventional wisdom believes that Taiwan's deviation from the "one China" position leads to a conflictive or instable tendency in cross-strait relations. In this case, it is reasonable to hypothesize that Taiwan's pro-independent leadership leads to a conflictive development or the instability of cross-strait relations.

However, due to different backgrounds and personalities, the difference between Lee Teng-hui and Ma Ying-jeou is also obvious although they are both presidents from the KMT. Therefore, it is reasonable to use leadership change rather than partisanship as an indicator to

capture Taiwan's willingness to stay on the "one China" position recognized by the Three Communiqués and One Act framework in 1979. In sum, in this chapter, leadership change in Taiwan works as a proxy to know Taiwan's position on the "one China" issue, and this chapter aims to test the validity of the conventional wisdom that Taiwan's pro-independence preference leads to conflict.

On the other hand, this chapter also use leadership change in Taiwan as a proxy to understand the policy priorities in different periods. Based on the results in Chapter 5, it is clear that both international and domestic factors can influence cross-strait relations. Theoretically speaking, we need a method to deal with the "too many" variable problem in social science and figure out the priority among these factors from both international and domestic levels. In general, idea can plays an important role in foreign policymaking, which helps leaders to make choice among alternatives (J. Goldstein & Keohane 1993). In this case, it is reasonable to treat leadership change as a shift of policy priority in cross-strait relations, which means that leadership change helps answer which factor is more important in a certain period. In sum, this chapter takes a normative approach to synthesize factors influencing cross-strait relations, and leadership change in Taiwan works as a proxy to identify the priorities.

As to the research design of this chapter, this chapter plans to examine how the change of leadership in Taiwan influences cross-strait relations from 1990 to 2012 in two ways. The first way is to investigate the effect of a certain leader on negative-or-positive patterns and the stability of cross-strait relations. The second way is to compare the differences among the significant factors when different leadership dummies are included respectively into analysis.

As to the organization of this chapter, there are four sections. The first section summarize the relevant theories and facts about the effect of Taiwan's leadership change in cross-strait

relations. The second section is about methodology and research design. The third section examines the effect of a certain leader on negative-or-positive pattern and the stability of cross-strait relations. The fourth section compares the differences among the significant factors for Taiwan and China's behaviors when facing different Taiwanese leaders.

6.1 Theories and Hypotheses about Leadership Change

From the liberal perspective in IR theory, the leaders' ideas can work as a proxy to assess the priority of policy or guidelines of foreign behaviors. When introducing domestic factors into the analysis of international politics, an efficient way to synthesize all factors coming from both the international and domestic levels is critical to deal with the "too many variable" problem. In Goldstein and Keohane's (1993: 11-24) work, there are three causal pathways to explain the role of belief and idea in foreign policy-making. Ideas can serve as road maps which can limit policy-makers' choices. Ideas can serve as focal points when a unique equilibrium is not available. Ideas embedded in institutions can serve as innovations for new policies. In short, since ideas and beliefs help decision-makers identify an option among alternatives, it is reasonable to take ideas or beliefs as factors that cause shifts of foreign behavior. On the other hand, the outcomes of policymaking is also a function of perceptions or misperceptions based on Jervis' (1976: 117-203) theory, because policy-makers have to maintain their cognitive consistency between beliefs and reality. Perception is related to a process of reasoning in which actors formulate their beliefs, images about other actors, and other actors' intentions. In this light, the preexisting belief works as a gate-keeper to filter and process information for decision-makers. In both works, ideas and beliefs can work as proxies to understand decision-makers' priority and reasoning.⁵³ Therefore, when policy-makers face challenges and factors coming from both international and domestic

⁵³ For a more detailed psychological origin of these cognitive theories, see Larson (1989: 24-56)

levels, they may have different priorities because of their different ideas. In this case, when analyzing cross-strait relations, it is reasonable to take Taiwan's leadership change into account because the shift of leadership may denote a shift of policy preference or priority which leads to the change of negative-or-positive patterns of foreign behavior or the possibility of increasing uncertainty.

On the other hand, leadership change in Taiwan also implies the possibility for Taiwan to deviate from the "one China" position. Since 1949, the legacy of Chinese Civil War makes "one China" issue become the essential characteristic of cross-strait relations, and the "one China" position is further moved to favor the P.R.C. because of the normalization of the U.S.-China relations in 1979. However, the democratization process creates a momentum for Taiwan to deviate from the "one China" position because it provides an opportunity for the pro-independence actors, like the DPP, to influence cross-strait relations. In general, Taiwan's democratization has two political consequences which need a further analysis. First, in the last chapter, the statistical analysis has shown that the approach of Taiwan's presidential election creates uncertainty for both Taiwan and China and then makes cross-strait relations less stable.⁵⁴ Second, after democratization, the change of Taiwan's leadership also becomes a noteworthy variable in cross-strait relations because Taiwanese leaders may hold different positions on the "one China" issue, and this chapter aims to investigate its consequence. However, it is also worth noting that the difference about the "one China" position among the top leaders cannot be totally explained by partisanship. For example, both Lee Teng-hui and Ma Ying-jeou are the KMT presidents, but their "one China" positions are quite different. This is the main reason for this chapter to take leadership change rather than partisan alternation as a proxy to access the

⁵⁴ For a detailed analysis, please see Chapter 5.

preference deviating from the “one China” position. In sum, the goal of this chapter is to explore what the impact of leadership change is on cross-strait relations.⁵⁵

As to the hypotheses in this chapter, like the previous chapters, leadership change may influence negative-or-positive patterns and the stability of Taiwan and China’s behaviors. Regarding negative-or-positive patterns, any leader attempting to deviate from the “one China” position may lead to a negative development of Taiwan and China’s behaviors toward each other, while any leader maintaining the “one China” position may lead to a positive development of Taiwan and China’s behaviors toward each other. In this case, it is reasonable to assume that when the DPP leaders are in office, the actors in the U.S.-China-Taiwan triangle tend to expect Taiwan to deviate from the “one China” position recognized by the framework of 1979. As to the KMT leaders after 1990, it is obvious that Lee Teng-hui is defined as a supporter of Taiwan independence in China’s rhetoric, but Ma Ying-jeou is never criticized for any attempt to deviate from the “one China” position. Since the DPP leaders generally hold a pro-independence position, it is reasonable to hypothesize a more conflictive development of cross-strait relations when the DPP leaders are in office. As to the KMT leaders, considering China’s criticism on Lee Teng-hui, it is also reasonable to hypothesize that Lee Teng-hui has the same effect like the DPP leaders on cross-strait relations. In this case, two hypotheses about negative-or-positive patterns go as follows:

H1 Conflict Brought by the Independence Preference Hypothesis

When the DPP leaders (Chen Shui-bian) or Lee Teng-hui are in office, a negative development of cross-strait relations can be expected.

H2 Cooperation Brought by the Unification Preference Hypothesis

⁵⁵ Since there is no evidence of China’s deviation from the “one China” position, this chapter does not include leadership change of China into analysis.

When Ma Ying-Jeou is in office, a positive development of cross-strait relations can be expected.

As to the hypotheses about the stability of Taiwan and China's behaviors, any leader attempting to deviate from the "one China" position creates uncertainty for all decision-makers, and then causes the instability of Taiwan and China's behaviors. On the other hand, any leader maintaining the "one China" position makes Taiwan and China's behaviors more stable. Thus, two hypotheses about the stability of cross-strait relations go as follows:

H3 Instability Brought by the Independence Preference Hypothesis

When the DPP leaders (Chen Shui-bian) or Lee Teng-hui are in office, China and Taiwan's behaviors toward each other are less stable.

H4 Stability Brought by the Unification Preference Hypothesis

When Ma Ying-jeou is in office, China and Taiwan's behaviors toward each other are more stable.

To sum up, the change of leadership may represent a shift of policy preference, and it can work as a proxy to indicate Taiwan's preference to hold or deviate from the "one China" position in the US.-China-Taiwan triangle because of the independence-or-unification nature of Taiwan's domestic politics. In general, this chapter hypothesizes that any deviation from the "one China" position creates a conflictive development of cross-strait relations or produces uncertainty that causes instability for both Taiwan and China's behaviors. In the following sections, a set of statistical analyses will be conducted to test the validity of the hypotheses.

6.2 Method and Variables

This chapter applies an ARIMA(1,1,1)-GARCH (1,1) model to control the bias caused by the serial correlation, non-stationary and heteroscedasticity problems.⁵⁶ The GARCH model is designed to model both the mean and variance of time series data, so there are two equations in the GARCH model, which are the conditional mean equation and the conditional variance equation. The conditional mean equations in the following sections help explain how factors including state behaviors in the U.S.-China-Taiwan triangle, trade interdependence, electoral cycles, and leadership change impact the negative-or-positive patterns of Taiwan and China's behaviors. In other words, the conditional mean equations can be expressed as:

$$\begin{aligned}
 DTC_t = & DCT_{t-1} + DCU_{t-1} + DUC_{t-1} + DTU_{t-1} + DUT_{t-1} + Trade\ Dependence_{t-1} \\
 & + Taiwanese\ Electoral\ Cycle + CCP\ Party\ Congress\ Cycle + Leadership \\
 & + AR(1) + MA(1) + Constant
 \end{aligned}$$

$$\begin{aligned}
 DCT_t = & DTC_{t-1} + DCU_{t-1} + DUC_{t-1} + DTU_{t-1} + DUT_{t-1} + Trade\ Dependence_{t-1} \\
 & + Taiwanese\ Electoral\ Cycle + CCP\ Party\ Congress\ Cycle + Leadership \\
 & + AR(1) + MA(1) + Constant
 \end{aligned}$$

The conditional variance equations in the following sections help examine how the same variables change the variance of Taiwan and China's behaviors. A greater variance of a state behavior is defined as the instability of a state behavior. Thus, the conditional variance equations can be expressed as:

⁵⁶ Since the time period (1990-2012) is the same as the analysis in Chapter 5, so the model is the same as the models in Chapter 5.

The Varaince of DTC_t

$$\begin{aligned}
 &= DCT_{t-1} + DCU_{t-1} + DUC_{t-1} + DTU_{t-1} + DUT_{t-1} \\
 &+ Trade\ Dependence_{t-1} + Taiwanese\ Electoral\ Cycle \\
 &+ CCP\ Party\ Congress\ Cycle + Leadership + ARCH(1) + GARCH(1) \\
 &+ Constant
 \end{aligned}$$

The Varaince of DCT_t

$$\begin{aligned}
 &= DTC_{t-1} + DCU_{t-1} + DUC_{t-1} + DTU_{t-1} + DUT_{t-1} \\
 &+ Trade\ Dependence_{t-1} + Taiwanese\ Electoral\ Cycle \\
 &+ CCP\ Party\ Congress\ Cycle + Leadership + ARCH(1) + GARCH(1) \\
 &+ Constant
 \end{aligned}$$

In general, besides the leadership dummy variables, all variables are the same as the dependence model in Chapter 5.⁵⁷ The leadership dummies are the main objectives to observe in this chapter.⁵⁸ There are three top leaders in Taiwan after 1990, and they are Lee Teng-hui (Lee), Chen Shui-bian (Chen), Ma Ying-jeou (Ma).

6.3 The Impact of Leadership Change in the Dependence Model

In this section, the concept of economic interdependence is measured by Taiwan's trade dependence on China as the analysis in Chapter 5. The summarized results about the leadership dummies are shown as Table 6.1.

Table 6.1 Summarized Results about the Effect of Leadership Change in Taiwan

⁵⁷ In this chapter, the indicator of cross-strait economic interdependence is the level of Taiwan's trade dependence on China. Based on the analysis in Chapter 5, the results of the trade interdependence model and the dependence model are very similar. Thus, this chapter takes the dependence model as the main model for the reason of parsimony.

⁵⁸ Like the situation in Chapter 4, adding too many variables leads to the convergence problem easily for a GARCH model, and the problem really occurs when I add the interactive variables combing the leadership dummy and the right-hand-side variables in the dependence model (like Lee*DCT_{t-1}) or include the three leadership dummy variables at the same time. Therefore, I apply the same method in Chapter 4 to run the regression three times and add only one dummy variable each time to compare the effects of the three presidencies on the dependence model. The result in Table 6.1 is a comparison of the results when a certain leadership dummy is in the equations.

	DTC	Standard Error	DCT	Standard Error
Conditional mean				
Lee	11.56**	(3.22)	4.040	(3.41)
Chen	-4.333	(3.93)	2.783	(3.73)
Ma	-9.792	(7.34)	-12.29*	(5.46)
Conditional variance				
Lee	0.00595	(0.58)	1.164*	(0.59)
Chen	0.728+	(0.38)	-0.222	(0.41)
Ma	-3.251*	(1.48)	-3.347	(2.34)

Note: 1. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. 2. The rest part of this model is omitted and all tests on standardized residuals show no evidence of serial correlation and heteroscedasticity.

In general, the results in Table 6.1 show three points worth noting. First, the positive development of Taiwan's behavior toward China is a general trend in the Lee period before controlling the effect of the 1996 crisis, and China's behavior toward Taiwan is less stable in the Lee period. Second, the Chen presidency has no impact on both negative-or-positive patterns and the stability of cross-strait relations. Third, in general, the development of China's behavior toward Taiwan is negative in the Ma period, and Taiwan's behavior toward China is more stable in the Ma period. A detailed illustration goes as follows.

First, the Lee presidency has two effects. The first effect is that Taiwan's behavior toward China goes toward a more positive development and the second one is China's behavior is less stable in the Lee period. In Table 6.1, the coefficients of the Lee dummy are positive and significant in the conditional mean equation of Taiwan's behavior toward China (DTC) and in the conditional variance equation of China's behavior toward Taiwan (DCT). Based on the results, it is reasonable to reject the conflict brought by the independence preference hypothesis (H1), because of the wrong sign of the coefficients in the conditional mean equation of Taiwan's behavior toward China (DTC). On the other hand, the results in the conditional variance equations show that the instability brought by the independence preference (H3) is evident on the China side in the Lee period, because it only works on China's behavior toward Taiwan (DCT). However, the results still need to be further examined by controlling the effect of the 1996 crisis.

The summarized results after dividing the Lee period into the “before” and “after” the crisis dummies are shown in Table 6.2.

Table 6.2 Summarized Results of the Before-After Comparison in the Lee Period

	DTC	Standard Error	DCT	Standard Error
Conditional mean				
Before the 1996 Crisis	6.915*	(3.42)	0.390	(2.94)
After the 1996 Crisis	11.47*	(5.03)	6.469*	(2.84)
Conditional variance				
Before the 1996 Crisis	-1.116**	(0.42)	0.0300	(0.39)
After the 1996 Crisis	0.255	(0.43)	-0.0336	(0.45)

Note: 1. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. 2. The rest part of this model is omitted and all tests on standardized residuals show no evidence of serial correlation and heteroscedasticity.

The results in Table 6.2 further confirm that it is reasonable to reject the conflict brought by the independence preference hypothesis (H1), and it also shows that Taiwan’s behavior toward China is in fact more stable before the crisis in the Lee period. First of all, in Table 6.2, all coefficients in the conditional mean equations are positive, which contradict what the conflict brought by the independence preference hypothesis (H1) predicts. If the hypothesis is true, then the signs of all coefficients in the conditional mean equations should be negative. Thus, it is safe to reject the hypothesis about the conflict brought by the independence preference (H1). The results also indicate that the Lee presidency brings a positive development of cross-strait relations rather than a negative development to cross-strait relations. Second, as to the stability of cross-strait relations, the results in the conditional variance equations show the instable effect of the Lee presidency on China’s behavior is not significant in both periods. The result suggests that the instable effect of the Lee presidency on China is an average effect when taking the before and after periods of the 1996 crisis as a whole. The 1996 crisis may be the key to make China’s behavior to Taiwan have a greater variance in the Lee period because controlling for the 1996

crisis has a significant impact on the instable effect of the Lee presidency shown in Table 6.1. The only significant coefficient in the conditional variance equations of Table 6.2 is the before 1996 crisis dummy in the equation of Taiwan's behavior toward China (DTC), but the sign of the coefficient is different from what the instability brought by the independence preference hypothesis (H3) predicts. Therefore, after controlling the effect of the 1996 crisis, the results show that there is no evidence to support the conflict brought by the independence preference hypothesis (H1) and the instability brought by the independence preference hypothesis (H3) only works on China when taking the before and after periods of the 1996 crisis as a whole. In short, the effect of the Lee presidency is complicated in cross-strait relations, and the statistical analysis shows that the conventional wisdom about the negative development of cross-strait relations in the Lee period is wrong. However, China's uncertainty about Taiwan's behavior in the Lee period is also evident, because of China's behavioral instability as shown in Table 6.1, and the 1996 crisis may be the key for the greater variance of China's behavior.

Second, as to the impact of the Chen presidency, the results in Table 6.1 show that the Chen presidency has no impact on both negative-or-positive patterns and the stability of cross-strait relations. Therefore, there is no evidence to support the conflict brought by the independence preference hypothesis (H1) in general. Based on the coefficients of the Chen and Lee dummies in the conditional mean equations of Table 6.1, it is reasonable to say that the negative-or-positive patterns of Taiwan and China's behaviors toward each other does not go as the hypothesis predicts or is not influenced by Taiwan's two pro-independence leaders.

As to the effect of Taiwan's pro-independence leaders on the stability of cross-strait relations, the results in Table 6.1 show some support for the instability brought by the independence preference hypothesis (H3). The Chen presidency has no impact on the stability of

cross-strait relations, but the Lee presidency has an instable effect on China's behavior toward Taiwan in general. Thus, the statistical evidence only support the instable effect of the Lee presidency when taking the Lee period as whole.

Third, as to the impact of the Ma presidency, the negative development of China's behavior toward Taiwan is evident in the Ma period, and Taiwan's behavior toward China is more stable in the Ma period. In Table 6.1, the results in the conditional mean equations reject the cooperation brought by the unification preference hypothesis (H2) because the negative development in the Ma period contradicts what the hypothesis predicts. As in Table 6.1, the coefficient related to the Ma presidency is negative and significant in the conditional mean equation of China's behavior toward Taiwan (DCT). On the other hand, the results in the conditional variance equations support the stability brought by the unification preference hypothesis (H4) only on the Taiwan side. As in Table 6.1, the coefficient of the Ma presidency is negative and significant in the conditional variance equation of Taiwan's behavior toward China (DTC), which indicates the stable effect of the Ma presidency on Taiwan's behavior to China.

Based on the analysis in this sections, the summarized result about the hypothesis testing is shown as Table 6.3. In general, it is reasonable to conclude that Taiwan's deviation from the "one China" position creates uncertainty rather than a conflictive tendency in cross-strait relations. Two note-worthy patterns go as follows.

Table 6.3 The Result about the Hypothesis Testing Related to Leadership Change

Dependence Model	DTC	DCT
Conflict Brought by the independence preference (H1)		
Cooperation Brought by the unification preference (H2)		
Instability Brought by the independence preference (H3)		Lee (whole)
Stability Brought by the unification preference (H4)	Ma	

Note: 1. The last names of Taiwan's presidents means that the effects of their presidencies are significant. 2. The instable effect of the Lee presidency is significant only when taking the Lee period as a whole without considering the effect of the 1996 crisis.

First, like previous chapters, the effect of Taiwan's leadership change mainly works on the stability rather than negative-or-positive patterns of cross-strait relations. The statistical evidence in this section does not support the two hypotheses about negative-or-positive patterns (H1 and H2). More importantly, the statistical analysis contradicts the conventional wisdom to formulate the two hypotheses. As shown in Table 6.1, both the positive development of Taiwan's behavior in the Lee period and the negative development of China's behavior in the Ma period contradict the conventional wisdom.

Second, the statistical results show some support for both hypotheses about the stability of cross-strait relations. In the first place, the instability caused by Lee is evident on the China side when taking the Lee period as a whole. However, the effect of the Lee presidency on the Taiwan side is mixed and not totally works as the hypothesis predicts. Before the crisis, the Lee presidency is a stable factor for Taiwan's behavior, which is different from what the hypothesis predicts. Therefore, the role of Lee Teng-hui in cross-strait relations is complicated and the instable effect only works on the China side. Next, the stability caused by the pro-unification leader is only significant on the Taiwan side. The Ma presidency has a stable effect on Taiwan's behavior toward China. Thus, it seems that the stable effect of the pro-unification preference (caused by Ma) only works on Taiwan while the instable effect of the pro-independence preference (caused by Lee) only works for China. The fact also denotes that only the Lee presidency has an impact on the stability of China's behavior, and the rest of Taiwanese leaders after 2000 do not cause any disturbance for the stability of China's behavior.

6.4 Priorities in Different Periods

In this section, the goal is to compare the significant factors influencing Taiwan and China's behaviors under different Taiwanese leaders. The summarized results are listed as Table 6.4.

Table 6.4 Significant Factors in cross-strait Relations in Different Periods

Dependence Model	DTC	DCT
Conditional mean equations		
Lee		DTC (+)
Chen		DTC (+)
Ma		DTC (+)
Conditional variance equations		
Lee	DDependency (-), Election (Pres., -), Election (Parl., +)	DTU (-), DUT (+), DDependency (-), Election (Pres., -)
Chen	DCT (-), DCU (-), DUC (+), Election (Pres., -), Election (Parl., +)	DUT (+), DDependency (-) , Election (Pres., -)
Ma	DCT (-), DCU (-), DUC (+), DDependency (-), Election (Pres., -), Election (Parl., +)	DDependency (-), Election (Pres., -)

Note: 1. The variables listed are the factors significant at 5% level when a certain leadership dummy is in the equation. 2. The signs in the parentheses indicate the sign of the coefficient of a certain variable in the equation.

First, regarding the negative-or-positive pattern of Taiwan's behavior, the results in the conditional mean equation show that no factor helps explain the negative-or-positive pattern of Taiwan's behavior in all periods, and are consistent with the results in the previous chapters. That is, the negative-or-positive pattern of Taiwan's behavior toward China is quite independent from most international and domestic factors, and there is no evidence to support any bilateral or triangular effects in influencing the negative-or-positive pattern of Taiwan's behavior.

Second, regarding the stability of Taiwan's behavior, in the results of the conditional variance equations, the two electoral cycles are the common factors in all periods, which suggests that all Taiwanese leaders are sensitive to electoral cycles. Besides the two electoral

cycles, Lee is additionally sensitive to Taiwan's economic dependence on China. On the other hand, Chen is additionally sensitive to the negative development of China's behaviors toward Taiwan (DCT) and China's behavior toward the United States (DCU) and the positive development of the U.S. behavior toward China (DUC). In other words, the strategic interactions in the U.S.-China-Taiwan triangle starts to play a role after 2000 in the stability of Taiwan's behavior toward China and this pattern is also evident in the Ma period. The fact suggests that the U.S.-China relations and China's policy to Taiwan start to create uncertainty for Taiwanese leaders after 2000. More importantly, Chen is the only one leader who is not sensitive to Taiwan's economic dependence on China. In other words, this suggests that Chen cares more about political factors than economic factors. Ma basically is concerned about the same issues as the previous two Taiwanese leaders: the U.S.-China relations, China's policy to Taiwan, and Taiwan's economic dependence. Thus, both international and domestic factors help explain the stability of Taiwan's behavior in all periods, and Taiwan's general elections are the common concerns of the three Taiwanese leaders. Besides elections, Lee concerns more about economic dependence, while Chen cares more about the U.S.-China interactions and China's policy toward Taiwan. Ma basically concerns both political and economic factors.

Third, as to the negative-or-positive pattern of China's behavior, it is obvious that the bilateral tit-for-tat response toward Taiwan is the most significant pattern for China and the pattern is not changed by Taiwan's leadership change. As shown in Table 6.4, Taiwan's behavior toward China (DTC) is always a significant factor for the negative-or-positive pattern of China's behavior no matter how the leadership in Taiwan changes. Again, this fact confirms the special status of Taiwan in China's policymaking. On the other hand, the results in Table 6.4 also show no sign of any triangularity in the negative-or-positive pattern of China's behavior. Again, as

previous models show, the indirect U.S. triangularity on China works only when the time period is from 1979 to 2012 without taking economic interdependence and Taiwan's domestic politics into account. However, Taiwan's behavior toward China (DTC) is always a significant factor influencing the negative-or-positive pattern of China's behavior, which indicates that the influence of the Chinese Civil War legacy on China is never changed by Taiwan's leadership change.

Fourth, as to the stability of China's behavior, cross-strait economic interdependence and Taiwan's presidential election are two common factors for China under different Taiwanese leaders. Compared with the stability of Taiwan's behavior, the cycle of Taiwan's parliamentary election does not disturb the stability of China's behavior. Besides the two common factors, China is sensitive to some additional factors in both the Lee and Chen periods. In the Lee period, China is additionally sensitive to the negative development of Taiwan's behavior toward the United States (DTU) and the positive development of the U.S. behavior toward Taiwan (DUT). In other words, China is uncertain about the implications of the negative development of Taiwan's behavior toward the United States and the positive development of the U.S. behavior toward Taiwan. In the Chen period, China is additionally sensitive to the positive development of the U.S. behavior toward Taiwan (DUT). Thus, in general, China feels uncertain about the positive development of the U.S. behavior toward Taiwan when the pro-independence leaders are in power, because it is the common factor in both the Lee and Chen periods. When Ma is in power, the interactions in the U.S.-China-Taiwan triangle is irrelevant because none of state behaviors in the U.S.-China-Taiwan triangle is significant in the conditional variance equation of China's behavior toward Taiwan in the Ma period. The result illustrates that there is no more surprise in China's expectation about the interactions of the U.S.-China-Taiwan triad in the Ma

period. Therefore, the stability of China's behavior is commonly influenced by economic interdependence and Taiwan's domestic politics, and China is additionally sensitive to some state behaviors in the U.S.-China-Taiwan triangle when facing the pro-independence leaders of Taiwan.

To sum up for this section, it is obvious that the significant factors that influence negative-or-positive patterns of cross-strait relations are identical throughout these periods. On the Taiwan side, no factor can influence the negative-or-positive pattern of Taiwan's behavior. On the China side, Taiwan's behavior toward China is always significant in all periods. As to the stability of Taiwan and China's behaviors to each other, it is evident that some factors are emphasized or sensitive in certain periods. Regarding the stability of Taiwan's behavior, besides the two cycles of Taiwanese election, Lee concerns more about economic dependence, while Chen cares more about the triangular politics, and Ma basically is concerned about the same issues as the previous two Taiwanese leaders. As to the stability of China's behavior, besides Taiwan's economic dependence and the cycle of Taiwan's presidential election, China is additionally sensitive to the positive development of the U.S. behavior toward Taiwan when the pro-independence leaders are in power. When Ma is in power, the interactions in the U.S.-China-Taiwan triangle becomes irrelevant for the stability of China's behavior.

6.5 Conclusion

To sum up for this chapter, it is clear that leadership in Taiwan is a factor to influence the stability of cross-strait relations under some conditions. When assuming the change of leadership in Taiwan as a proxy to indicate Taiwan's preference to deviate from the "one China" position in the US.-China-Taiwan triangle, the results in this chapter show that Taiwan's deviation from the "one China" position creates uncertainty rather than conflict in cross-strait relations. In the four

hypotheses developed according to the conventional wisdom about cross-strait relations, none of the hypotheses about negative-or-positive patterns is evident because of the wrong sign of the relevant coefficients. The results in Table 6.1 show that the development of Taiwan's behavior toward China is in fact more positive in the Lee period and the development of China's behavior toward Taiwan is more negative in the Ma period. Therefore, the conventional wisdom that the pro-independence preference leads to conflicts or the pro-unification preference leads to cooperation in cross-strait relations may not be the true mechanisms to depict the development of cross-strait relations. As to the stability of cross-strait, the results show some support for the relevant hypotheses. The results in Table 6.1 indicates that China's behavior is less stable in the Lee period and Taiwan's behavior is more stable in the Ma period.⁵⁹ Thus, it is evident that Taiwan's pro-independence preference of creates uncertainty for China because of the instable effect of Lee on China, and Taiwan's pro-unification preference only influences Taiwan because of the stable effect of Ma on Taiwan. More importantly, the statistical analysis shows that Chen in fact plays no role in both negative-or-positive patterns and the stability of cross-strait relations, which is quite different from what the conventional wisdom depicts. In sum, the statistical analysis suggests that leadership change in Taiwan influences the stability rather than negative-or-positive patterns of cross-strait relations. In other words, Taiwan's pro-independence preference creates uncertainty rather conflict for cross-strait relations, and the instable effect of Taiwan's pro-independence only works on the China side while the stable effect of Taiwan's pro-unification preference only works on Taiwan.

On the other hand, the analysis in this chapter also shows that the significant factors influencing the stability of cross-strait relations are different when different Taiwanese leaders

⁵⁹ The instable effect of the Lee presidency for China works when taking the Lee period as a whole without taking the 1996 crisis as a breaking point of the Lee presidency. See Table 6.1 and 6.2.

are in power. Regarding the stability of Taiwan's behavior, Lee concerns more about economic dependence, while Chen cares more about the triangular politics, and Ma is concerned about the same issue as the two previous presidents. As to the stability of China's behavior, China is additionally sensitive to the positive development of the U.S. behavior toward Taiwan when the pro-independence leaders are in power and when Ma is in power, the interactions in the U.S.-China-Taiwan triangle no longer create uncertainty for China.

CHAPTER 7. CONCLUSIONS

The goal of this dissertation is to clarify how the Cold War legacy, the Chinese Civil War legacy, economic interdependence, and Taiwan's domestic politics influence cross-strait relations. In the process of investigating this question, two trends are obvious. First, most factors have impacts on the stability rather than negative-or-positive patterns of cross-strait relations. The result suggests that the traditional war-and-peace aspect in IR is insufficient to analyze state behaviors and it is necessary to model uncertainty and instability when analyzing cooperation and conflict in the context of time. Second, the Chinese Civil War legacy is the only factor that can influence negative-or-positive patterns of cross-strait relations. China's tit-for-tat response to Taiwan is the only significant pattern presenting in the conditional mean equations of all models. The result represents Taiwan's active and special status in cross-strait relations. Based on the findings in the previous chapters, the causal relations confirmed by the statistical analyses are shown as Figure 7.1, and will be illustrated in the following section.

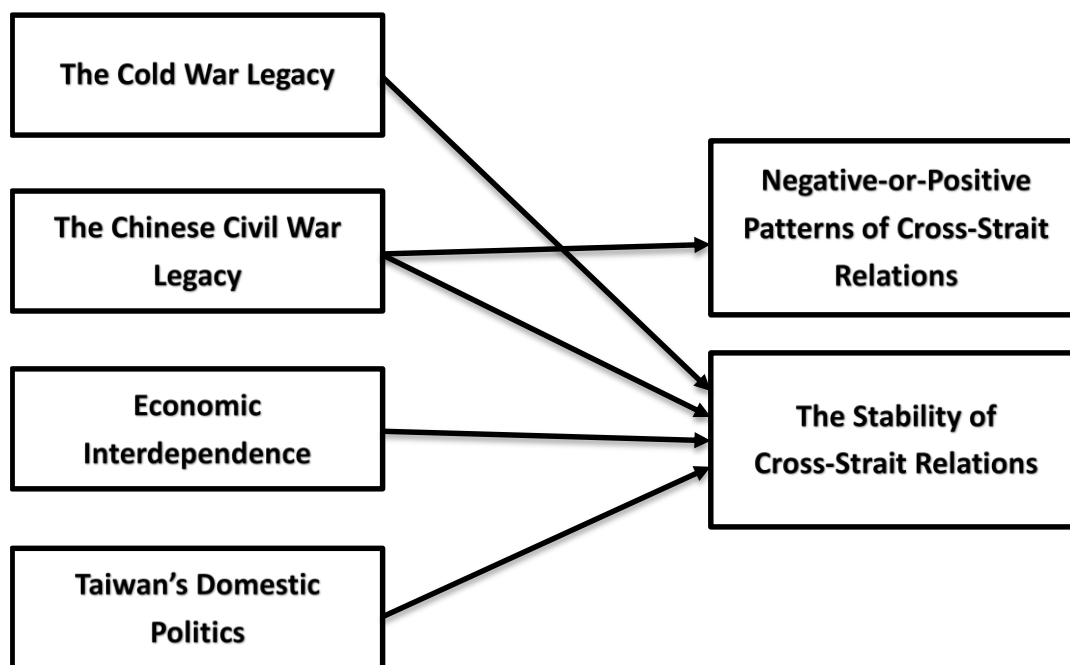


Figure 7.1 Causal Relations between Factors and Cross-Strait Relations

7.1 Findings

First, about the Cold War legacy, in this dissertation, the legacy is defined as the U.S. related behaviors, and in general, they can only influence the stability of cross-strait relations. Although the statistical analysis in Chapter 3 shows that the United States can influence China's negative-or-positive pattern toward Taiwan through manipulating its cooperative level toward Taiwan, when taking economic interdependence and Taiwan's domestic politics after 1990 into account, such influential pattern is no longer significant in the models of Chapter 5. More importantly, the U.S. influence never works in a direct way. In all models from Chapter 3 to Chapter 6, the variables of the U.S. direct triangularity in cross-strait relations are never significant.⁶⁰ Thus, it is reasonable to say that although the United States plays an important role

⁶⁰ For Taiwan's behavior toward China, the U.S. behavior toward Taiwan is the variable of the U.S. direct triangularity. For China's behavior toward Taiwan, the U.S. behavior toward China is the variable of the U.S. direct

in the formation of the U.S.-China-Taiwan triangle and the Three Communiques and One Act framework in the history after World War Two, the U.S. leverage in the interactions between Taiwan and China is in fact very limited, and does not directly alter negative-or-positive patterns of cross-strait relations. On the other hand, the statistical results in Chapter 4 show that the end of Cold War brings instability for some state behaviors, but there is no evidence to support a conflictive tendency in the post-Cold War era. In other words, both neo-realism and power transition theory fail to depict the development of the U.S.-China-Taiwan triangle after the Cold War. In sum, the Cold War legacy or the U.S. influence can only work on the stability of cross-strait relations in an indirect way.

Second, about the Chinese Civil War legacy, the statistical analyses in this dissertation suggest that the legacy is the only factor that can influence both negative-or-positive patterns and the stability of cross-strait relations.⁶¹ On the one hand, based on the results in Chapter 5, the negative development of China's behaviors toward Taiwan leads to a greater volatility for Taiwan's behavior toward China. On the other hand, based on the results from Chapter 3 to Chapter 6, China's tit-for-tat response to Taiwan is always significant in the conditional mean equations, which denotes Taiwan's special status in China's decision-making process. More importantly, all results about negative-or-positive patterns of cross-strait relations suggest that only China responds to Taiwan's behavior but Taiwan does not respond to China's behavior, which means that Taiwan is in fact leading the negative-or-positive development of cross-strait relations. Thus, it is reasonable to believe that Taiwan's persistent cooperation toward China is the key to prevent future conflicts in cross-strait relations and the U.S.-China-Taiwan triangle,

triangularity. The related hypotheses about the U.S. direct triangularity, see Chapter 3.

⁶¹ In this dissertation, China's behavior to Taiwan is defined as the variable of the Chinese Civil War legacy for Taiwan's behavior to China. As to China's behavior to Taiwan, the variable of the Chinese Civil War legacy is defined as Taiwan's behavior to China.

and how to build an environment which can encourage Taiwan's persistent cooperation toward China is an important issue to reduce the tension in the Taiwan Strait. As to the effect of Taiwan's pro-independence preference, the results in Chapter 6 basically show that there is no evidence indicating a conflictive tendency in cross-strait relations when Taiwan's pro-independent leaders are in power.

Third, about economic interdependence, the statistical analyses in Chapter 5 and 6 show that economic interdependence only influence the stability of cross-strait relations. Based on the results, the two related variables, the level of economic interdependence and the level of Taiwan's dependence on China, are only significant in the conditional variance equations, and the negative development of economic interdependence or Taiwan's dependence on China creates uncertainty and instability for cross-strait relations. In other words, the results do not support the commercial peace hypothesis, and economic interdependence promote stability rather than a cooperative tendency in the case of cross-strait relations. More importantly, China's consistent concern on Taiwan's economic dependence on China is also evident based on the results of Chapter 6. No matter how Taiwan's leadership changes, Taiwan's dependence is always a sensitive factor in influencing China's behavior stability toward Taiwan. The results, again, show that the impact of economic interdependence works only on the stability of cross-strait relations.

Fourth, about Taiwan's domestic politics, in general, the impact of Taiwan's domestic politics mainly works on the stability of cross-strait relations, and Taiwan's presidential election cycle is an important factor for the stability of Taiwan and China's behaviors to each other. The results in Chapter 5 show that the approach of Taiwan's presidential elections creates instability rather than a conflictive tendency in cross-strait relations. The results in Chapter 6 also indicate

that Taiwan's presidential elections are the common factor to influence the stability of Taiwan and China's behaviors since 1990, which shows that Taiwan's presidential elections really generate great uncertainty for Taiwan and China's decision-makers. On the other hand, the results in Chapter 4 also indicate that Taiwan's democratic transition does not create a conflictive or instable tendency, and in fact, the partisan alternation in the consolidation period is the main source of uncertainty and instability in the U.S.-China-Taiwan triangle. All results suggest that Mansfield and Snyder's "election to fight" rationale may not work in cross-strait relations.

Although the effect of leadership change in Taiwan on negative-or-positive patterns is different from what the conventional wisdom predicts and the effect on the stability of cross-strait relations is conditional, leadership change in Taiwan still works well in identifying Taiwan and China's policy priorities under different Taiwanese leaders. From 1990 to 2012, regarding Taiwan's policy priorities, the results in Chapter 6 show that the triangular politics starts to a sensitive factor for all Taiwanese leaders after 2000 and the KMT leaders basically care more about economic interdependence. As to China's policy priorities, a trend is obvious that China's sensitivity on the U.S.-Taiwan relations keeps declining from 1990 to 2012. More importantly, China is no longer sensitive to the U.S.-Taiwan relations in the Ma period. The political implication is clear: Taiwan's policies and the effect of the U.S.-China-Taiwan interactions during the Ma period is quite predictable in China's decision-makers' minds. The results also supports the reasonability to apply the normative way to synthesize factors from both international and domestic levels and to understand the causal relationships of policymaking suggested by J. Goldstein and Keohane (1993).

Besides, the findings directly related to the variation to cross-strait relations, by controlling for China's domestic politics factor, the question about the relative importance of

international versus domestic factors in determining cross-strait relations can also be answered. It is clear that the answer is different for Taiwan and China based on the results in Chapter 5 and 6. On the China side, both the negative-or-positive pattern and stability of its behavior toward Taiwan are only influenced by the international factors. The result is quite reasonable because there is no reason for China to deviate from the “one China” position in the 1979 framework of the triad. In this case, there is no domestic force to alter its negative-or-positive pattern or to disturb the stability of China’s behavior toward Taiwan.

On the Taiwan side, it is evident that no factor can influence the negative-or-positive pattern of Taiwan’s behavior toward China, but factors from both international and domestic levels influence the stability of Taiwan’s behavior toward China. The result shows that although Taiwan’s deviation from the P.R.C.-favored “one China” position combining with the high level of economic interdependence with China is a general trend after 1990, to deal with Taiwan’s policy toward China rationally is still a consensus for all decision-makers in Taiwan, because there is no evidence to support the two factors significantly alter the negative-or-positive pattern of Taiwan’s policy toward China. However, decision-makers in Taiwan still have to face the uncertainty caused by the approach of elections and the negative development of China’s dependence on cross-strait trade flow. In sum, the results illustrate the insufficiency to make inference based on international factors only and the necessity to include domestic factors for searching the origins of different policy preferences at least in the case of Taiwan’s policy toward China.

7.2 Contribution

Based on the findings mentioned above, this dissertation contributes to the existing theories in two aspects. First, future IR studies may need considering to model uncertainty and

instability when analyzing cooperation and conflict. The war-and-peace perspective is not the only aspect of foreign behavior, and this dissertation have shown that “stable or not” is a new perspective worthy for further exploration. Uncertainty is a natural part of the real world, and it is also unreasonable to assume that states’ behavioral patterns are always constant. In this case, to understand what generates uncertainty and what leads to instability should also be a task for future IR studies. Second, the structural perspective of neo-realism is not comprehensive and sufficient enough to explain cross-strait relations. The logic of power does not explain the lack of direct leverage for the United States in cross-strait relations and China’s tit-for-tat response to Taiwan. Moreover, to stay at the international level only does not help see the whole picture of cross-strait relations. The results in Chapter 5 and 6 have shown the importance of domestic politics, especially Taiwan’s presidential election, in cross-strait relations. In short, in the case of cross-strait relations, it is necessary to model behavior instability when analyzing cooperation and conflict and the explanatory power of neo-realism may not be as powerful as its proponents claim.

First, when analyzing state behavior in the context of time, the behavioral stability should be a new aspect worth of further study. In other words, besides war and peace, foreign policy researchers should consider to take the stability of state behavior as the dependent variables for future studies. Traditional foreign policy studies only focus on the effects on negative-or-positive patterns of state behavior, which is the war-and-peace aspect of foreign behavior. However, the findings in this dissertation show that most conflictive factors suggested by the existing theories do not directly influence negative-or-positive patterns of state behavior but have a significant impact on the behavioral stability in general.

This finding has two implications. On the one hand, this implies that the cooperative game

approach may need to reconsider its research design and hypotheses. In the previous studies applying this approach, researchers tend to apply a series of stability tests to make sure that the behavioral patterns are stable in a certain period.⁶² However, this process often excludes a large number of data points and extremely limits the generalizability of the conclusion. The non-constant variance across time periods is quite common in the real world, so to model and figure out how factors influence the stability of state behavior may be a better way to further our understanding about state behaviors rather than to exclude the non-constant part of data. This dissertation suggests applying the GARCH model to deal with negative-or-positive patterns and the stability of state behavior at the same time. As shown in the results of the previous chapters, it is clear that state behaviors in the triangle mainly influence the stability of other state behaviors in the triangle, and this dissertation suggests using uncertainty to explain the origin of instability. However, this dissertation still has its limitation, and a further research to formulate hypotheses about the relationship between cooperative behaviors and behavioral stability is needed to make up the gap in the cooperative game approach.

On the other hand, the effect of economic interdependence and election cycle in the democratization process on conflictive behavior may need to be reconsidered. The analyses in this dissertation show that in fact the two factors lead to instability rather than conflict in cross-strait relations. For dealing with the stability of state behavior, this dissertation suggests assuming that uncertainty leads to instability or a greater variance of state behavior, and the negative change of economic interdependence and the approach of election both generate uncertainty for decision-makers. This is only a first step for further research, and based on the findings in this dissertation, at least in cross-strait relations, to disrupt an economic

⁶² See J. S. Goldstein and Freeman (1990); J. S. Goldstein and Pevehouse (1997).

interdependent relationship or the approach of Taiwan's presidential election only leads to uncertainty for decision-makers or instability of Taiwan and China's behaviors rather than incentives to conflict. In sum, the findings in this dissertation suggest that behavioral stability is an important aspect when analyzing state behavior in a context of time. More importantly, in the future, when applying the hypotheses of the cooperative game, commercial peace and democratic transition in cross-strait relations, the inference will be more comprehensive if the stability of cross-strait relation is considered.

Second, the structural perspective of neo-realism may not be as powerful and elegant as its proponents claim. On the one hand, there is no evidence to support the claim that the power structure at the international level is the most salient factor to explain the variation of state behaviors in the U.S.-China-Taiwan triangle. First of all, there is no evidence of the presence of the U.S. direct leverage in negative-or-positive patterns of cross-strait relations. More importantly, the only U.S. indirect leverage, which is to manipulate the U.S. cooperation toward Taiwan to change China's calculation of utility toward Taiwan, is no longer significant after 1990 when cross-strait economic interdependence and the domestic politics in Taiwan start influencing the stability of cross-strait relations. In other words, it is clear that the U.S.-China struggle can only partially explain cross-strait relations, and Taiwan's domestic politics and cross-strait economic interdependence also play an important role in cross-strait relations. Second, the shift of polarity from a bipolar system to a multi-polar system after 1989 does not necessarily leads to a conflictive tendency in the triad. Both neo-realism and power transition theory suggest a more conflictive U.S.-China relationship and cross-strait relations in the post-Cold War period, but the results in Chapter 4 do not show any sign to support the conflictive development. However, the

stable effect of the bipolar system does work on some state behaviors as neo-realists predict.⁶³

On the other hand, as to the role of Taiwan, the wisdom of Thucydides (1972: 402) that “the strong do what they can and the weak suffer what they must” does not accurately depict Taiwan’s behavioral patterns and characterize its importance in the triad. As shown in all models, only China responds to Taiwan in a tit-for-tat way, but there is no sign of Taiwan’s response toward China’s behavior in negative-or-positive patterns of cross-strait relations. The result suggests that in fact Taiwan is leading the negative-or-positive development of cross-strait relation, not the powerful China. More importantly, Taiwan’s negative-or-positive pattern to China is not influenced by the triangular interactions at all and this pattern remains even with the addition of new factors. The result shows that although it is the weakest state in the triad, Taiwan’s negative-or-positive pattern is quite independent from the two great powers.

Finally, to stay at the international level can only explain China’s behavior toward Taiwan, but not Taiwan’s behavior toward China. Although the negative-or-positive pattern and stability of China’s behavior to Taiwan are only influenced by international factors, the stability of Taiwan’s behavior to China is influenced by both international and domestic factors. Thus, it is clear that to stay at the international level does not get the whole picture of cross-strait relations. Moreover, Taiwan’s domestic politics is an important factor to influence the behavioral stability of Taiwan and China. The approach of Taiwan’s presidential election is a factor that creates uncertainty and instability for both sides of Taiwan Strait. In short, to stay at the international level may risk for omitting important variables in cross-strait relations. Thus, the structural perspective of neo-realism is not salient enough to fully explain the patterns in cross-strait

⁶³ Taiwan’s behavior toward China, China’s behavior toward the United States and the U.S. behavior toward Taiwan are more stable in the Cold War period. In other words, the three behaviors are less stable in the post-Cold War period. However, the 1996 crisis seems to have a more comprehensive influence on the stability of the U.S.-China-Taiwan triad. See Chapter 4 for details.

relations, and the neo-realist hypotheses and predictions are not fully supported by the statistical evidence in this dissertation.

To sum up, there are two main contributions in this dissertation. First, the stability of state behavior is a new aspect worth of further study, because all important factors in this dissertation mainly have impacts on the stability of state behavior rather than on negative-or-positive patterns of state behavior like war and peace. Second, the development of cross-strait relations and the interactions in the U.S.-China-Taiwan triangle both reveal the insufficiency of the structural perspective in neo-realism.

To conclude for the whole dissertation, the formation of the U.S.-China-Taiwan triangle is a product of both the Cold War and Chinese Civil War legacies. The framework of the U.S.-China-Taiwan triangle established in 1979 still holds and is not severely challenged by Taiwan's democratization or the end of the Cold War, because the two factors mainly influence the stability rather negative-or-positive patterns of state behaviors in the triad. In other words, Taiwan's deviation from the "one China" position and the changing nature of the U.S.-China relationship only create instability or uncertainty for the U.S.-China-Taiwan triangle, not necessarily conflict.

However, it is also evident that the U.S. leverage in cross-strait relations is declining based on the analyses in the previous chapters. Since 1979, the U.S. direct leverage in cross-strait relations is never significant, and after 1990 the U.S. indirect leverage to influence China's negative-or-positive pattern toward Taiwan also loses its significance when cross-strait economic interdependence and Taiwan's election start to influence the stability of cross-strait relations. Thus, it can be expected that the decline of the U.S. leverage will be a clear pattern in the foreseeable future, but it is still too early to claim that cross-strait relations are pure bilateral

affairs between Taiwan and China because the U.S.-related behaviors still play a role in the stability of cross-strait relations in general. However, the U.S. influence on the stability of cross-strait relations is also in a declining process, because China is no longer sensitive to any U.S.-China-Taiwan triangular interaction since Ma is in power. What the development of the declining U.S. influence in cross-strait relations after the Ma period is an interesting topic for further investigation.

Finally, Taiwan in fact plays a special role in the U.S.-China-Taiwan triangle. Taiwan's negative-or-positive pattern toward China is independent from any factor suggested by the existing theories and Taiwan can also trigger China's tit-for-tat response while Taiwan does not respond to China's behavior. Both suggest that Taiwan has the ability to play a more active role in cross-strait relations. On the other hand, Taiwan's electoral cycle also works as an instable factor that creates uncertainty for both sides of the Taiwan Strait. Taiwan's ability to influence and disturb cross-strait relation mainly comes from its incentive to deviate from the current P.R.C.-favored "One China" position. Furthermore, after democratization, Taiwan's electoral cycle has become a periodic opportunity to examine Taiwan's willingness to stay on the "one China" position formed in 1979. In sum, it is safe to assume that Taiwan is an independent and important actor in the triad and not a pure recipient of the result of the U.S.-China struggle. More importantly, Taiwan' domestic politics including its electoral competition and leadership change is an important factor to disturb the stability of cross-strait relations.

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APPENDICES

Appendix A The Goldstein Scale and the CAMEO Event Scheme

CAMEO EVENT CODE	EVENT DESCRIPTION	GOLDSTEIN SCALE
01	MAKE PUBLIC STATEMENT	0
010	Make statement, not specified below	0
011	Decline comment	-0.1
012	Make pessimistic comment	-0.4
013	Make optimistic comment	0.4
014	Consider policy option	0
015	Acknowledge or claim responsibility	0
16	Deny responsibility	0
17	Engage in symbolic act	-2
18	Make empathetic comment	0
19	Express accord	3.4
02	APPEAL	3.4
020	Appeal, not specified below	3
21	Appeal for material cooperation, not specified below	3
211	Appeal for economic cooperation	3.4
212	Appeal for military cooperation	3.4
213	Appeal for judicial cooperation	3.4
214	Appeal for intelligence	3.4
22	Appeal for diplomatic cooperation, such as policy support	3.4
23	Appeal for aid, not specified below	3.2
231	Appeal for economic aid	3.4
232	Appeal for military aid	3.4
233	Appeal for humanitarian aid	3.4
234	Appeal for military protection or peacekeeping	3.4
24	Appeal for political reform, not specified below	3.4
241	Appeal for change in leadership	-0.3
242	Appeal for policy change	-0.3
243	Appeal for rights	-0.3
244	Appeal for change in institutions, regime	-0.3
25	Appeal to yield	-0.3
251	Appeal for easing of administrative sanctions	-0.3
252	Appeal for easing of popular dissent	-0.3
253	Appeal for release of persons or property	-0.3

254	Appeal for easing of economic sanctions, boycott, or embargo	-0.3
255	Appeal for target to allow international involvement (non-mediation)	-0.3
256	Appeal for de-escalation of military engagement	-0.3
26	Appeal to others to meet or negotiate	-0.3
27	Appeal to others to settle dispute	4
28	Appeal to others to engage in or accept mediation	4
03	EXPRESS INTENT TO COOPERATE	4
30	Express intent to cooperate, not specified below	4
31	Express intent to engage in material cooperation, not specified below	4
311	Express intent to cooperate economically	5.2
312	Express intent to cooperate militarily	5.2
313	Express intent to cooperate on judicial matters	5.2
314	Express intent to cooperate on intelligence	5.2
32	Express intent to provide diplomatic cooperation such as policy support	5.2
33	Express intent to provide material aid, not specified below	4.5
331	Express intent to provide economic aid	5.2
332	Express intent to provide military aid	5.2
333	Express intent to provide humanitarian aid	5.2
334	Express intent to provide military protection or peacekeeping	5.2
34	Express intent to institute political reform, not specified below	6
341	Express intent to change leadership	7
342	Express intent to change policy	7
343	Express intent to provide rights	7
344	Express intent to change institutions, regime	7
35	Express intent to yield, not specified below	7
351	Express intent to ease administrative sanctions	7
352	Express intent to ease popular dissent	7
353	Express intent to release persons or property	7
354	Express intent to ease economic sanctions, boycott, or embargo	7
355	Express intent allow international	7

	involvement (not mediation)	
356	Express intent to de-escalate military engagement	7
36	Express intent to meet or negotiate	7
37	Express intent to settle dispute	4
38	Express intent to accept mediation	5
39	Express intent to mediate	7
3	EXPRESS INTENT TO COOPERATE	5
30	Express intent to cooperate, not specified below	1
31	Express intent to engage in material cooperation, not specified below	1
311	Express intent to cooperate economically	1
312	Express intent to cooperate militarily	1.9
313	Express intent to cooperate on judicial matters	2.8
314	Express intent to cooperate on intelligence	2.5
32	Express intent to provide diplomatic cooperation such as policy support	5
33	Express intent to provide material aid, not specified below	7
331	Express intent to provide economic aid	3.5
332	Express intent to provide military aid	3.5
333	Express intent to provide humanitarian aid	3.4
334	Express intent to provide military protection or peacekeeping	3.5
34	Express intent to institute political reform, not specified below	3.8
341	Express intent to change leadership	6
342	Express intent to change policy	7
343	Express intent to provide rights	7
344	Express intent to change institutions, regime	8
35	Express intent to yield, not specified below	6
351	Express intent to ease administrative sanctions	6
352	Express intent to ease popular dissent	6.4
353	Express intent to release persons or property	7.4
354	Express intent to ease economic sanctions, boycott, or embargo	7.4
355	Express intent allow international involvement (not mediation)	7
356	Express intent to de-escalate military engagement	7

36	Express intent to meet or negotiate	7
37	Express intent to settle dispute	7.4
38	Express intent to accept mediation	8.3
04	CONSULT	7.4
40	Consult, not specified below	8.5
41	Discuss by telephone	7
42	Make a visit	5
43	Host a visit	5
44	Meet at a “third” location	5
45	Mediate	5
46	Engage in negotiation	5
05	ENGAGE IN DIPLOMATIC COOPERATION	5
50	Engage in diplomatic cooperation, not specified below	5
51	Praise or endorse	5
52	Defend verbally	5
53	Rally support on behalf of	5
54	Grant diplomatic recognition	5
55	Apologize	5
56	Forgive	5
57	Sign formal agreement	7
06	ENGAGE IN MATERIAL COOPERATION	7
60	Engage in material cooperation, not specified below	7
61	Cooperate economically	7
62	Cooperate militarily	9
63	Engage in judicial cooperation	9
64	Share intelligence or information	9
07	PROVIDE AID	9
70	Provide aid, not specified below	9
71	Provide economic aid	9
72	Provide military aid	9
73	Provide humanitarian aid	9
74	Provide military protection or peacekeeping	10
75	Grant asylum	-2
08	YIELD	-2
80	Yield, not specified below	-2
81	Ease administrative sanctions, not specified below	-2
811	Ease restrictions on political freedoms	-2
812	Ease ban on political parties or politicians	-2
813	Ease curfew	-5
814	Ease state of emergency or martial law	-5

82	Ease political dissent	-5
83	Accede to requests or demands for political reform not specified below	-5
831	Accede to demands for change in leadership	-5
832	Accede to demands for change in policy	-5
833	Accede to demands for rights	-5
834	Accede to demands for change in institutions, regime	-5
84	Return, release, not specified below	-5
841	Return, release person(s)	-5
842	Return, release property	-5
85	Ease economic sanctions, boycott, embargo	-5
86	Allow international involvement not specified below	-5
861	Receive deployment of peacekeepers	-5
862	Receive inspectors	-5
863	Allow delivery of humanitarian aid	-5
87	De-escalate military engagement	-5
871	Declare truce, ceasefire	-5
872	Ease military blockade	-5
873	Demobilize armed forces	-5
874	Retreat or surrender militarily	-5
09	INVESTIGATE	-5
90	Investigate, not specified below	-5
91	Investigate crime, corruption	-5
92	Investigate human rights abuses	-5
93	Investigate military action	-5
94	Investigate war crimes	-5
10	DEMAND	-5
100	Demand, not specified below	-2
101	Demand information, investigation	-2
1011	Demand economic cooperation	-2
1012	Demand military cooperation	-2
1013	Demand judicial cooperation	-2
1014	Demand intelligence cooperation	-2
102	Demand policy support	-2
103	Demand aid, protection, or peacekeeping	-2
1031	Demand economic aid	-2
1032	Demand military aid	-2
1033	Demand humanitarian aid	-2
1034	Demand military protection or peacekeeping	-2
104	Demand political reform, not specified below	-2

1041	Demand change in leadership	-4
1042	Demand policy change	-4
1043	Demand rights	-4
1044	Demand change in institutions, regime	-4
105	Demand mediation	-4
1051	Demand easing of administrative sanctions	-4
1052	Demand easing of political dissent	-4
1053	Demand release of persons or property	-4
1054	Demand easing of economic sanctions, boycott, or embargo	-4
1055	Demand that target allows international involvement (non-mediation)	-4
1056	Demand de-escalation of military engagement	-4
106	Demand withdrawal	-4
107	Demand ceasefire	-4
108	Demand meeting, negotiation	-4
11	DISAPPROVE	-4
110	Disapprove, not specified below	-4
111	Criticize or denounce	-4
112	Accuse, not specified below	-4
1121	Accuse of crime, corruption	-4
1122	Accuse of human rights abuses	-4
1123	Accuse of aggression	-4
1124	Accuse of war crimes	-4
1125	Accuse of espionage, treason	-5
113	Rally opposition against	-5
114	Complain officially	-5
115	Bring lawsuit against	-5
116	Find guilty or liable (legally)	-5
12	REJECT	-6
120	Reject, not specified below	-4.4
121	Reject material cooperation	-5.8
1211	Reject economic cooperation	-5.8
1212	Reject military cooperation	-5.8
122	Reject request or demand for material aid, not specified below	-5.8
1221	Reject request for economic aid	-5.8
1222	Reject request for military aid	-5.8
1223	Reject request for humanitarian aid	-5.8
1224	Reject request for military protection or peacekeeping	-5.8
1245	Refuse to allow international involvement (non mediation)	-5.8
1246	Refuse to de-escalate military engagement	-5.8
125	Reject proposal to meet, discuss, or	-5.8

	negotiate	
126	Reject mediation	-5.8
127	Reject plan, agreement to settle dispute	-7
128	Defy norms, law	-7
129	Veto	-7
13	THREATEN	-7
130	Threaten, not specified below	-7
131	Threaten non-force, not specified below	-7
1311	Threaten to reduce or stop aid	-7
1312	Threaten to boycott, embargo, or sanction	-7
1313	Threaten to reduce or break relations	-7
132	Threaten with administrative sanctions, not specified below	-6.5
1321	Threaten to impose restrictions on political freedoms	-6.5
1322	Threaten to ban political parties or politicians	-6.5
1323	Threaten to impose curfew	-6.5
1324	Threaten to impose state of emergency or martial law	-6.5
133	Threaten political dissent, protest	-6.5
134	Threaten to halt negotiations	-6.5
135	Threaten to halt mediation	-6.5
136	Threaten to halt international involvement (non-mediation)	-6.5
137	Threaten with violent repression	-6.5
138	Threaten to use military force, not specified below	-6.5
1381	Threaten blockade	-6.5
1382	Threaten occupation	-6.5
1383	Threaten unconventional violence	-6.5
1384	Threaten conventional attack	-6.5
1385	Threaten attack with WMD	-6.5
139	Give ultimatum	-6.5
14	PROTEST	-7.5
140	Engage in political dissent, not specified below	-7.5
141	Demonstrate or rally	-7.5
1411	Demonstrate for leadership change	-7.5
1412	Demonstrate for policy change	-7.5
1413	Demonstrate for rights	-7.5
1414	Demonstrate for change in institutions, regime	-7.5
142	Conduct hunger strike, not specified below	-7.5
1421	Conduct hunger strike for leadership change	-7.5

1422	Conduct hunger strike for policy change	-7.5
1423	Conduct hunger strike for rights	-7.2
1424	Conduct hunger strike for change in institutions, regime	-7.2
143	Conduct strike or boycott, not specified below	-7.2
1431	Conduct strike or boycott for leadership change	-7.2
1432	Conduct strike or boycott for policy change	-7.2
1433	Conduct strike or boycott for rights	-7.2
1434	Conduct strike or boycott for change in institutions, regime	-4
144	Obstruct passage, block	-4
1441	Obstruct passage to demand leadership change	-4
1442	Obstruct passage to demand policy change	-5.6
1443	Obstruct passage to demand rights	-5.6
1444	Obstruct passage to demand change in institutions, regime	-5.6
145	Protest violently, riot	-5.6
1451	Engage in violent protest for leadership change	-8
1452	Engage in violent protest for policy change	-7
1453	Engage in violent protest for rights	-6.5
1454	Engage in violent protest for change in institutions, regime	-7
15	EXHIBIT FORCE POSTURE	-7
150	Demonstrate military or police power, not specified below	-7
151	Increase police alert status	-7
152	Increase military alert status	-7
153	Mobilize or increase police power	-7
154	Mobilize or increase armed forces	-9.2
16	REDUCE RELATIONS	-9.2
160	Reduce relations, not specified below	-9.2
161	Reduce or break diplomatic relations	-5
162	Reduce or stop aid, not specified below	-5
1621	Reduce or stop economic assistance	-5
1622	Reduce or stop military assistance	-5
1623	Reduce or stop humanitarian assistance	-5
163	Impose embargo, boycott, or sanctions	-5
164	Halt negotiations	-5
165	Halt mediation	-9
166	Expel or withdraw, not specified below	-9
1661	Expel or withdraw peacekeepers	-9

1662	Expel or withdraw inspectors, observers	-9
1663	Expel or withdraw aid agencies	-9.5
17	COERCE	-9
170	Coerce, not specified below	-9
171	Seize or damage property, not specified below	-10
1711	Confiscate property	-10
1712	Destroy property	-10
172	Impose administrative sanctions, not specified below	-10
1721	Impose restrictions on political freedoms	-10
1722	Ban political parties or politicians	-8
1723	Impose curfew	-8
1724	Impose state of emergency or martial law	-10
173	Arrest, detain, or charge with legal action	-10
174	Expel or deport individuals	-10
175	Use tactics of violent repression	-9.5
18	ASSAULT	-9.5
180	Use unconventional violence, not specified below	-10
181	Abduct, hijack, or take hostage	-10
182	Physically assault, not specified below	-10
1821	Sexually assault	-9.5
1822	Torture	-10
1823	Kill by physical assault	-10
183	Conduct suicide, car, or other non-military bombing, not spec below	-9.5
1831	Carry out suicide bombing	-10
1832	Carry out car bombing	-10
1833	Carry out roadside bombing	-10
184	Use as human shield	-10
185	Attempt to assassinate	-10
186	Assassinate	0
19	FIGHT	0
190	Use conventional military force, not specified below	-0.1
191	Impose blockade, restrict movement	-0.4
192	Occupy territory	0.4
193	Fight with small arms and light weapons	0
194	Fight with artillery and tanks	0
195	Employ aerial weapons	-2
196	Violate ceasefire	0
20	USE UNCONVENTIONAL MASS VIOLENCE	3.4
200	Use unconventional mass violence, not specified below	3.4

201	Engage in mass expulsion	3
202	Engage in mass killings	3
203	Engage in ethnic cleansing	3.4
204	Use weapons of mass destruction, not specified below	3.4
2041	Use chemical, biological, or radiological weapons	3.4
2042	Detonate nuclear weapons	3.4

Source: Gerner et al. (2002).

Appendix B Tests on the Time Series Variables in Chapter 5

Results of ADF Test for All Time Series Variables (1990-2012)

Variable	ADF	ADF with trend	ADF (first difference)	ADF with trend (first difference)
TC	-1.760540 (5)	-2.427688 (5)	-12.86618 (4)**	-12.84303 (4)**
CT	-1.988068 (5)	-2.789971 (5)	-11.37649 (4)**	-11.35489 (4)**
CU	-0.380454 (11)	-3.734307 (3)*	-7.731664 (10)**	-7.49717 (12)**
UC	0.036988 (15)	-3.653114 (3)*	-7.04909 (14)**	-7.12278 (14)**
TU	-2.423167 (4)	-3.725991 (4)*	-8.260103 (9)**	-8.247364 (9)**
UT	-1.406231 (10)	-2.583783 (10)	-8.384191 (9)**	-8.371194 (9)**
Ttrade	0.483155 (3)	-1.765883 (3)	-12.06402 (2)**	-12.12504 (2)**
Ctrade	-1.319744 (13)	-0.903673 (13)	-3.95733 (15)**	-4.118231(15)**
Dependency	0.202639 (13)	-1.925889 (13)	-3.33594 (12)*	-3.450042 (12)*

Note: 1. $+p < 0.10$, $*p < 0.05$, $**p < 0.01$. 2. The optimal lag length is in the parentheses and is selected based on the Akaike information criteria (AIC). 3. The null hypothesis is that the variable is not stationary. 4. The test is performed by Eviews (ver. 7.2).

Results of the Ljung–Box Test for All Time series Variables (1990-2012)

Variable	Lags(3)	Lags(6)	Lags(12)	Lags(18)
DTC	36.31**	49.631**	57.949**	65.49**
DCT	41.525**	43.327**	53.42**	59.035**
DCU	34.113**	35.404**	44.409**	46.146**
DUC	50.725**	52.831**	65.049**	75.886**
DTU	27.511**	33.718**	43.034**	55.013**
DUT	39.627**	40.788**	54.759**	62.692**
Dtrade	32.155**	37.445**	46.124**	52.724**
Dctrade	98.551**	108.88**	169.07**	245.11**
DTCDepedecy	36.818**	42.389**	62.851**	68.635**

Note: 1. $+p < 0.10$, $*p < 0.05$, $**p < 0.01$. 2. The null hypothesis is that there is no serial correlation at the certain lag. 3. This table reports the Q statistics at a certain lag. 4. The test is performed by STATA (ver. 12).

Results of LM test for All Time series Variables (1990-2012)

Variable	Lags(3)	Lags(6)	Lags(12)	Lags(18)
DTC	54.935**	67.721**	69.884**	70.513**
DCT	24.218**	24.367**	25.801**	25.984**
DCU	12.434**	30.952**	40.893**	53.430**
DUC	20.581**	35.992**	54.043**	59.119**
DTU	51.261**	70.329**	73.385**	77.030**
DUT	27.471**	29.813**	31.685**	38.315**
Dtrade	33.887**	38.649**	59.601**	69.129**
Dctrade	3.962	7.266	35.203**	36.721**
DTCDepedecy	24.294**	25.880**	28.514**	29.040*

Note: 1. $+p < 0.10$, $*p < 0.05$, $**p < 0.01$. 2. This table reports Engle's LM test statistic. 3. The null hypothesis is that the variable has no ARCH effect. 4. The test is performed by STATA (ver. 12).