

# **Peace or War in the Taiwan Strait**

## **A Game Theoretical Analysis of the Taiwan Issue**

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## Abstract

I define the Taiwan issue as the tense relationship between mainland China and Taiwan since 1949. The tension used to arise from the belligerency between the Kuomintang and the Chinese Communist Party. In the past decade, Taiwan increasingly sought to define its own national identity and international status, but faced diplomatic and military pressures from mainland China, which has insisted that Taiwan is part of China. The relationship between mainland China and Taiwan has been one of the most important issues regarding the peace and security in the Asia-Pacific region. In order to explore the Taiwan issue, this research will examine the interactions among the United States, Taiwan, and mainland China in the realist perspective of international relations. The main research questions are: What determines the costs and benefits of the security decisions of the United States, Taiwan, and mainland China regarding the Taiwan issue? What decisions should the players make based on their costs and benefits? How do these decisions form various scenarios leading to different outcomes? How have the relations among the United States, Taiwan, and mainland China evolved since 1949?

This thesis is organized as follows. First, an examination of the interactions among the three players---the United States, Taiwan and mainland China---in a game theoretical model explores the costs and benefits for their security decisions and the formation of various security scenarios in the Taiwan Strait. Second, the evolution of security in the Taiwan Strait is reviewed and analyzed by applying the game theoretical model to the history of the Taiwan issue. Third, based on the game theoretical model, I make some speculations and predictions on the future relations between mainland China and Taiwan.

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## Acknowledgements

I first learned game theory by teaching myself Weiyang Zhang's *Boyi Lun Yu Xinxi Jingjixue (Game Theory and Information Economics)* and Jean Tirole's *Theory of Industrial Organization* in the summer and fall of 1998. Later, Professor Pinliang Luo from Fudan University and Professor Huizhong Zhou from Western Michigan University helped me improve my game theoretical skills. The idea of using game theory to analyze the Taiwan issue came to my mind when I first learned game theory and has stayed ever since. In early 2001, in a discussion on the Taiwan issue with Tao Li and Yuanlei Zhang, my roommates at Western Michigan University, I claimed that I would use game theory to analyze the Taiwan issue someday. In spring 2002, in my paper for Professor Susan Snyder's course Collective Choice at Virginia Tech, I formulated the Taiwan issue in a simple two-stage game theoretical model. This thesis is based on the basic model in that paper.

In writing this thesis, I tried not to involve my own value into my analysis, though it is difficult, if not impossible. If a reader finds me biased towards certain ideology and political system, please do not further infer my political view. Actually, as a Chinese national, I feel sad to think about peace or war among my compatriots. I hope there will be no need for my children to think about these issues in the future. In the past one and a half centuries, Chinese people have struggled in sweats and tears to survive weakness and demolitions and to rebuild their motherland. The Taiwan issue is a heritage of tragedy that the nation has born. Deep in my heart, I wish perpetual peace for my people and for the world.

I am grateful to my advisor and committee chair, Professor Timothy Luke, for his advice. My original basic model mainly considers two players --- mainland China and Taiwan. Dr. Luke encouraged me to incorporate the United States as a player. The breadth of his knowledge often reminds me of a Chinese saying "*Hai kuo ping yu yue, tian gao ren niao fei* (The sea is so wide that a fish can leap about happily; the sky is so high that a bird can fly freely)." I also wish to thank my committee members --- Professor Deborah Milly, Professor Scott Nelson, and Professor Dennis Yang --- for their advices

and encouragements. They have helped me a lot through refining my research topic, revising this thesis and giving me many helpful comments. I have learned a lot from them on how to conduct in-depth research. I also thank Professor Karen Hult for her comments and revisions on my research proposal. Numerous other professors, staffs and students from the political science department at Virginia Tech have also lent great support to my research. Meanwhile, I thank Professor Y. A. Liu for his comments and revisions on this thesis. He has reminded me again and again of the significances of cross-strait economic integration and the U.S. commitment to protecting Taiwan. His work in both mainland China and Taiwan has set an example for many Chinese Christians. I thank many of my brothers, sisters, and friends for their prayers and helps. I am also grateful to my parents Xiujuan and Yonghua Wu, my fiancée Xiaoyan, and other family members for their love and support.

# Chapter 1. Introduction

In the past several decades, Asia-Pacific countries have experienced impressive economic and social developments. The geopolitical importance of the Asia-Pacific region, in turn, has dramatically increased. However, the Taiwan issue has generated many tensions over peace and security in this region, and it continues to be a potential source of conflict. In this thesis, I define the Taiwan issue as the tense relationship between mainland China and Taiwan since 1949. The tension used to arise from the belligerency between the Kuomintang and the Chinese Communist Party as a result of a civil war. In the past decade, Taiwan increasingly sought to define its own national identity and international status, but has faced diplomatic and military pressures from mainland China, which has insisted Taiwan is part of China. The tension between Taiwan and mainland China even resulted in a military blustering in 1995-1996. Mainland China conducted missile tests and military exercises in the Taiwan Strait, while the United States sent the USS Nimitz and six additional ships to the area. Since then, mainland China has placed hundreds of missiles in coastal provinces facing the Taiwan Strait and maintained the military pressure. It is noteworthy that the United States has played an important role in maintaining the balance of power in the Taiwan Strait since the outbreak of the Korean War in 1950. The Taiwan issue is a key issue regarding the relations between the United States, the only superpower in the world, and the People's Republic of China, an emerging regional power.

Now, as Taiwanese identity is increasingly asserted, as economic integration between mainland China and Taiwan progresses, and with the 2004 Taiwanese presidential election approaching, some questions increasingly deserve in-depth analysis. Should Taiwan declare independence? Should mainland China attack Taiwan if the latter declares independence? What can the United States do to maintain the peace and security in the Taiwan Strait? How will economic development in mainland China and economic integration across the Taiwan Strait affect the cross-strait relationship? We cannot adequately answer these questions without taking account of the interactions among the United States, Taiwan, and mainland China. In this thesis, to analyze the Taiwan issue

with a systematic framework, I formulate the interactions among the United States, Taiwan and mainland China in a three-stage dynamic game theoretical model with three players and yield various scenarios resulting from the interactions. Based on the game theoretical model, I review the history of the Taiwan issue and analyze the evolution of the security in the Taiwan Strait and the balance of power among the United States, Taiwan, and mainland China. Furthermore, I will discuss the future of the Taiwan issue based on the game-theoretical model and the history of the Taiwan issue.

The purpose of this study is to understand how the balance of power in the Taiwan Strait has evolved and where it will go in the future. The main research questions are: What determines the costs and benefits of security decisions of the United States, Taiwan, and mainland China regarding the Taiwan issue? What decisions should the players make based on their costs and benefits? How do these decisions form various scenarios leading to different outcomes? How have the relations among the United States, Taiwan, and mainland China evolved since 1949? The unit of analysis in this research is the State. However, in my analysis of the relations among these three players, I will also explore domestic reasons for the decisions and policies of the players involved.

The remainder of this thesis is organized as follows: Chapter 2 reviews literatures of the realist stream of international relations theory as well as relevant research on the Taiwan issue. Chapter 3 formulates the interactions among the United States, Taiwan and mainland China regarding the Taiwan issue in a game theoretical model. The model explores the costs and benefits of the security decisions of these players in various scenarios concerning security in the Taiwan Strait. I start from a dynamic game of perfect information, and then relax the conditions by introducing a mixed strategy. After applying the game theoretical model to the history of the Taiwan issue, Chapter 4 reviews and analyzes the evolution of the security in the Taiwan Strait. Chapter 5 concludes and explores the future of the Taiwan issue.

## Chapter 2. The Literature

There are mainly three dominant streams of theories in International Relations: realism, liberalism, and Marxism. This research is based on the theory of realism, which views world politics as a “jungle” characterized by a “state of war,” and views states as being self-interested, preparing to defend their national interests and calculating the relative balances. In particular, this research is based on structural realism and constitutional realism. On the one hand, I carry out a game theoretical analysis of the interactions among the United States, Taiwan, and mainland China and the various security scenarios in the Taiwan Strait based on structural realism. Structural realism assumes that state players are functionally similar units differing in capabilities, and that states’ preference for power and rational decisions derive from the structure among states (Waltz 1979: 96-97). While domestic factors affect the resources of the states, policy is mainly determined by the competitive structure of the international system (Doyle 1998: 128). Structural realism originates from the political philosophy of Hobbes (1651/1994). Many contemporary authors have also made contributions to this stream (e.g. Waltz 1979; Keohane 1986). Structural realism regards maintaining the balance of power as the essential strategy of world politics. Waltz (1979: 117) even presupposes that the structure of international system tends towards balance of power. On the other hand, while focusing on the balance of power, I also examine the domestic reasons for the security strategies of the United States, Taiwan, and mainland China based on constitutional realism, which emphasizes the effects of variations in social, economic, and political institutions (Doyle 1997: 48). Constitutional realism originates from the works of Rousseau (1756/1990; 1762/1950). Many contemporary constitutionalists such as Henry Kissinger, Stanley Hoffmann, Robert Gilpin, Stephen Krasner, and Peter Katzenstein, have also written in this stream. For constitutional realists, domestic factors also influence the stability or instability of the balance of power.

I classify the literature concerning the relations between mainland China and Taiwan into 3 groups. The first group of literature mainly focuses on the domestic

politics of mainland China and Taiwan and how it shapes their policies toward each other. Su (2002), former Chairman of Taiwan's Mainland Affairs Council, provides an insightful review of how Taiwan's domestic politics affects its mainland policy. He divides Taiwan's policy toward the Mainland into four stages:

1) From allowing some Taiwan residents to visit the mainland in 1987 to the pronouncement of the end of a state of war with mainland China;

2) From 1991 to Taiwanese President Lee Teng-hui's visit to Cornell University in 1995;

3) From 1995 to President Lee's remark about the "special state-to-state relationship" in 1999, which started a "new paradigm" for Taiwan's mainland policy;

4) The continuation of the "new paradigm" from President Lee Teng-hui to President Chen Shui-bian after 1999.

Moreover, he explores the change in Taiwanese government's self-identity and view of the mainland underlying the changes in its mainland policy. "The self-identity of the 'Republic of China' has been transformed from a sovereign country representing the entire China (1949-1991), to a sovereign country within the historical, geographical and cultural China (1991-1999), to merely a label for the sovereign Taiwan (1999- ). The identity of the 'People's Republic of China' was transformed from territory ruled by a rebel group (1949-1991) to a political entity, 'another part of China' more or less equal with Taiwan (1991-1999), to another sovereign country with special relationship with the sovereign Taiwan (1999- )...The self-identity of 'Taiwan' was transformed from a seat of the ROC Government and a model province (1949-1991) to the sovereign ROC, a political entity and also a part of China (1991-1999), to a sovereign country who still bears the name of the Republic of China (1999- )" (Su 2000). He also points out that "two ideas are essential to the understanding of Taiwan's Mainland policy: the Chinese/Taiwanese identity and the unification/independence issue." He labels the former issue as a "heart" issue and the later a "mind" issue. Hughes (1997) traces the nature of political change in Taiwan and explains how the basis of legitimacy for its government

has changed. He demonstrates how the initial link between Chinese identity and the legitimacy of the government in Taipei was broken by democratization in Taiwan. Chao (2002) examines the factional politics inside the Democratic Progressive Party (DDP) and its impact on the issue of Taiwan independence.

The second group examines international law problems concerning Taiwan's legal status. Yang (1999) discusses the relationship between mainland China and Taiwan by examining Taiwan's legal status through traditional international law and a new approach to democratic sovereignty. By employing his new approach to democratic sovereignty, both internal and external, he argues that, "though bilateral political and private law relations remain unique and special circumstances, China and Taiwan are, in political and legal reality, two separate states." Charney and Prescott (2000) examine aspects of the legal relationship between mainland China and Taiwan in light of the relevant historical facts and contemporary international law but do not give a conclusive answer regarding the issue of Taiwan's sovereignty. Tsang (2002) proposes a Chinese Union constituted by the two governments across the Taiwan Strait, with both upholding the one-China principle, having diplomatic representations overseas, and conducting relations with the rest of the world without violating the principle.

The third group focuses on the interaction between mainland and Taiwan. These groups usually analyze mainland China and Taiwan's reactions to their counterpart respectively while taking the U.S. involvement into account. Crane (1993) examines the economic exchange between mainland China and Taiwan and its effects on the political relationship. Garver (1997) investigates the interactions among mainland China, Taiwan, and the United States in the 1995 confrontation in the Taiwan Strait. Zhao (1999) collects a series of studies on the mainland China – Taiwan relations and, especially, on the 1995-1996 military crisis in Taiwan Strait. Sheng (2002) and Tsai (2002) focus on the relations between mainland China and Taiwan after the 2000 Taiwanese presidential election.

While game theory has been widely used to study international relations, especially the balance of power, I have found no articles using game theory to analyze the Taiwan issue except Niou (1998). Niou (1998) analyzes the Taiwan issue in a game

theoretical model that captures the strategic relations among mainland China, Taiwan, and the United States. He divides the evolution of the Taiwan independence issue into three periods: Taiwan independence as a domestic issue from 1986 to 1992, internationalization of the Taiwan independence issue from 1993 to 1996, and containment of the movement for Taiwan independence since 1997. Niou explains the strategic interactions among mainland China, Taiwan, and the United States in the first two periods by using two games of different structures and discusses some essential problems with the Taiwan independence issue in the third period. Distinct from his research, I use a game theoretical model to formulate the strategic interactions among the three players for all periods since the KMT's retreating from the mainland to Taiwan in 1949. To capture the uncertainty of the United States and mainland China in terms of their firmnesses of positions regarding the Taiwan issue, Niou introduces in the model the probability that China will be strong and the probability that the United States will be strong. In my model, the United States takes action first by deciding whether or not to promise to help Taiwan against mainland China. In this way, the firmness of positions is conceived to be an action that a player can take in accordance with its interest. Niou (1998) argues that a peaceful resolution of the Taiwan issue depends on whether China is willing to decouple pragmatic diplomacy from Taiwan independence. In my view, since recognition by the international community is the only condition that Taiwan lacks in order to be regarded as a sovereign state, it is very difficult for mainland China to decouple pragmatic diplomacy from Taiwan independence. In addition, distinct from Niou's study, I will elaborate the payoff functions and some specific variables, which enable me to discern the trajectory of the security in the Taiwan Strait in terms of scenarios in a single game theoretical model.

While the approach employed in this research creates a relatively rigorous framework for the analysis of the Taiwan issue, it also brings about some limitations to the research. The game theoretical model tends to over-simplify the relations among the United States, Taiwan, and mainland China and may neglect some very important factors. Moreover, while focusing on rational choices taken by the players involved, it does not

consider ethical issues. Yet, generally speaking, this study will contribute to the academic research of the Taiwan issue, especially to the rational choice analysis of the issue.

## Chapter 3. The Model

In order to explore the security in the Taiwan Strait, I pose the interactions among the United States, Taiwan, and mainland China that result in the balance of power into a three-stage, dynamic game theoretical model with three players. This is a game of perfect information with the structure shown in Figure 1. In the first stage, the United States chooses whether or not to promise to help Taiwan if a war breaks out between mainland China and Taiwan. In the second stage, after observing the U.S.'s action, Taiwan chooses whether or not to declare independence. In the third stage, after observing both the U.S. and Taiwan's actions, mainland China chooses whether or not to attack Taiwan.

In this thesis, I refer the United States' action of promising to help Taiwan defend itself against mainland China as a true commitment to joining the war to protect Taiwan if mainland China attacks Taiwan and a war breaks out. Section 3301(b)(3)-(6) of the Taiwan Relations Act states, "It is the policy of the United States...

(3) to make clear that the United States decision to establish diplomatic relations with the People's Republic of China rests upon the expectation that the future of Taiwan will be determined by peaceful means;

(4) to consider any effort to determine the future of Taiwan by other than peaceful means, including by boycotts or embargoes, a threat to the peace and security of the Western Pacific area and of grave concern to the United States;

(5) to provide Taiwan with arms of a defensive character; and

(6) to maintain the capacity of the United States to resist any resort to force or other forms of coercion that would jeopardize the security, or the social or economic system, of the people on Taiwan" (The Taiwan Relations Act, 1979).

If mainland China attacks Taiwan and a war breaks out in the Taiwan Strait, will the United States join the war to protect Taiwan against mainland China? Though the Taiwan

Relations Act legalizes an option of joining the war to protect Taiwan against mainland China, but it does not provide a clear-cut binding stipulation for the United States to go to war. Generally speaking, the United States has employed a so-called “ambiguous policy” towards the mainland China-Taiwan relations, not making clear whether it will help Taiwan defend itself against mainland China if a war breaks out. However, when a war breaks out between mainland China and Taiwan, the United States will have to take the benefit and cost of joining the war into consideration. Therefore, whether or not to promise to help Taiwan defend itself against mainland China can be viewed as a decision for the United States to make in its interactions with mainland China and Taiwan.

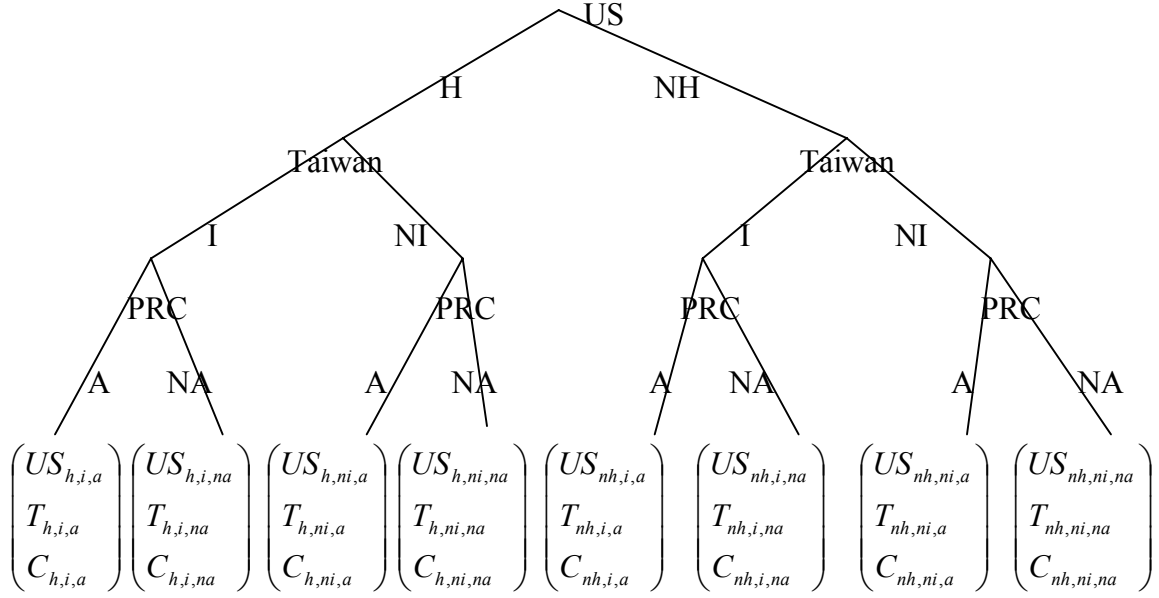
I assume that if a war breaks out between mainland China and Taiwan and no other country intervenes in the war, the probability that China wins the war is  $p$ ,  $p \in [0,1]$ , thus the probability that Taiwan wins the war is  $1-p$ .  $p$  is determined by the relative military strengths of mainland China and Taiwan. I also assume that if the United States joins the war and helps Taiwan defend itself against mainland China, the probability that mainland China will win the war decreases from  $p$  to  $p-h$  ( $0 < p-h < 1$ ), and correspondingly, the probability that Taiwan will win the war increases from  $1-p$  to  $1-p+h$  ( $0 < 1-p+h < 1$ ). Suppose that the United States, Taiwan, and mainland China derive utilities  $s_1$ ,  $s_2$ , and  $s_3$ , respectively, from the status quo of peaceful separation. If Taiwan succeeds in becoming an independent country, the United States, Taiwan, and mainland China will derive utilities  $i_1$ ,  $i_2$ ,  $i_3$ , respectively, from Taiwan’s independence. If mainland China unifies with Taiwan, the United States, Taiwan, and mainland China will derive utilities  $u_1$ ,  $u_2$ , and  $u_3$ , respectively, from the unification. If war breaks out between Taiwan and mainland China, it will cost Taiwan  $w_2$  and mainland China  $w_3$ . If the United States joins the war and helps Taiwan to defend itself against mainland China, the war will cost the United States  $w_1$  and bring an additional cost  $w_3^h$  to mainland China. Since the United States in the current phase warns that neither side of the Taiwan Strait should provoke tension and undermine the stability in the Taiwan Strait, I assume that either side who challenges the status quo of separation and leads to the outbreak of a war will incur a cost  $c$ .  $c$  depends on the domestic anti-

war pressure in Taiwan and mainland China and the diplomatic pressure from the United States and other foreign countries. At certain point of time, such variables as  $p$ ,  $h$ ,  $s_1$ ,  $s_2$ ,  $s_3$ ,  $i_1$ ,  $i_2$ ,  $i_3$ ,  $u_1$ ,  $u_2$ ,  $u_3$ ,  $w_1$ ,  $w_2$ ,  $w_3$ ,  $w_3^h$ , and  $c$  are all exogenous and determine the value of each player's payoff for each outcome. The players' actions are endogenous variables in the game theoretical model.

Figure 1 demonstrates the structure of the game among the United States, Taiwan, and mainland China and the payoff that each player can derive from each outcome. Underlying these payoff functions is an assumption that all the three players---the United States, Taiwan, mainland China---are risk-neutral.

The three players have very different orders of preference for the three arrangements: unification, Taiwan independence, and the status quo of peaceful separation. Mainland China hopes to reunify with Taiwan because it will enhance China's comprehensive national power and realize one of its most important national goals. Actually, the Fifth Plenum of the Fifteenth National Congress for Communist Party of China proposed on October 9, 2000 that "accomplish the unification cause" was one of the three major tasks for the Chinese people in the 21<sup>st</sup> century. In the current phase, it is difficult for mainland China to persuade Taiwan to reunify because of the great gaps between the two sides in terms of economic and political developments. Consequently, mainland China prefers the status quo of peaceful separation to Taiwan independence. So we have  $u_3 > s_3 > i_3$ .

Figure 1



$$US_{h,i,a} = (p-h)u_1 + (1-p+h)i_1 - w_1, T_{h,i,a} = (p-h)u_2 + (1-p+h)i_2 - w_2 - c,$$

$$C_{h,i,a} = (p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h$$

$$US_{h,i,na} = i_1, T_{h,i,na} = i_2, C_{h,i,na} = i_3,$$

$$US_{h,ni,a} = (p-h)u_1 + (1-p+h)i_1 - w_1, T_{h,ni,a} = (p-h)u_2 + (1-p+h)i_2 - w_2,$$

$$C_{h,ni,a} = (p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h - c$$

$$US_{h,ni,na} = s_1, T_{h,ni,na} = s_2, C_{h,ni,na} = s_3,$$

$$US_{nh,i,a} = pu_1 + (1-p)i_1, T_{nh,i,a} = pu_2 + (1-p)i_2 - w_2 - c, C_{nh,i,a} = pu_3 + (1-p)i_3 - w_3,$$

$$US_{nh,i,na} = i_1, T_{nh,i,na} = i_2, C_{nh,i,na} = i_3,$$

$$US_{nh,ni,a} = pu_1 + (1-p)i_1, T_{nh,ni,a} = pu_2 + (1-p)i_2 - w_2, C_{nh,ni,a} = pu_3 + (1-p)i_3 - w_3 - c,$$

$$US_{nh,ni,na} = s_1, T_{nh,ni,na} = s_2, C_{nh,ni,na} = s_3.$$

While mainland China's preference order for the three arrangements has remained unchanged since the founding of the PRC, Taiwan's preference order for the three arrangements have changed dramatically in the past decade as a result of the evolution of Taiwanese self-identity. After retreating from the mainland in 1949, the KMT regime consolidated its power in Taiwan and held the off-shore islands of Kinmen and Matsu in order to recover the mainland. The KMT declared martial law in 1949 and continued its authoritarian ruling in Taiwan. Even though the KMT ruled only the islands of Taiwan, Penghu, Kinmen, and Matsu, it continued its national name as "Republic of China" (ROC) and claimed sovereignty over all of China including the mainland. Martial law did not end until 1987. In 1991, the ROC renounced its long-standing stance of using force to recover the mainland, officially ending a state of war with mainland China. Accordingly, Taiwan would no longer treat the mainland as a "rebel group," but as a "political entity" more or less on an equal footing with the ROC on Taiwan. For about four decades following its retreat from the mainland, the KMT relied on Chinese nationalism and the program of recovering the mainland for its legitimacy, and harshly suppressed the Taiwan independence movement. However, recovering the mainland increasingly became a myth as the CCP consolidated its rule on the mainland. In this thesis, I refer to unification as integrating Taiwan into the PRC, which, because of the size difference between mainland China and Taiwan, is to some extent to the advantage of mainland China. Therefore, it is reasonable to assume that for Taiwan,  $s_2 > u_2$ . Since for decades the KMT relied on Chinese nationalism to legitimize its authoritarian ruling, I assume that for Taiwan under the rulings of Chiang Kai-shek and Chiang Ching-kuo,  $s_2 > i_2$ . As the KMT gradually relaxed its political control over Taiwanese people and promoted democracy, people in Taiwan have increasingly sought their own identity distinct from that of people on the mainland, and more and more Taiwanese tolerated and supported Taiwan independence. Even though Taiwan has not formally declared independence because of mainland China's threat to attack if it did so, it prefers independence to the status quo of peaceful separation. Therefore, I assume that since Lee Teng-hui became the President of ROC in 1988, Taiwan's preference order has been  $i_2 > s_2 > u_2$ .

The United States benefits from the status quo of peaceful separation between mainland China and Taiwan.

1) The Taiwan issue is a leverage that the United States can use in diplomatic and military arenas when dealing with mainland China. The United States can adjust its relations with Taiwan to influence mainland China's actions.

2) Taiwan has been a very important link in the defensive string that the United States supported to contain the communist block in the Cold War. Today, keeping the status quo of peaceful separation is to maintain a security cushion against the emerging power, the PRC, by using the Taiwan issue as a measure for mainland China's aspiration of expansion.

3) The United States can benefit greatly from selling arms to Taiwan and helping Taiwan to maintain its advantage over mainland China in terms of military equipment.

4) Maintaining Taiwan's status quo of peaceful separation from the mainland is to protect Taiwan's democracy and set an example for mainland China, which is essential to encouraging domestic political change on the mainland. This seems to be very important to the U.S. long-term strategic interest.

5) Last but not least, the United States hopes to maintain the status quo of the Taiwan Strait because of its long-standing commitment to supporting and protecting democratic system, human right and freedom in the world<sup>1</sup>. Taiwan is the first Chinese democracy and has set a good example for developing countries. Failing to protecting Taiwan will harm the United States' central value.

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<sup>1</sup> The National Security Strategy of the United States of America (White House 2002b: 3) states, "When we see democratic processes take hold among our friends in Taiwan or in the Republic of Korea, and see elected leaders replace generals in Latin America and Africa, we see examples of how authoritarian systems can evolve, marrying local history and traditions with the principles we all cherish. Embodying lessons from our past and using the opportunity we have today, the national security strategy of the United States must start from these core beliefs and look outward for possibilities to expand liberty."

It is noteworthy that the United States prefers the status quo of peaceful separation to Taiwan's independence. If Taiwan becomes independent, the benefits that the United States can derive from the status quo will disappear. Yet, the tension will not. Even if Taiwan declares independence and mainland China does not attack it immediately, the possibility of war will persist as long as mainland China does not renounce its claim for sovereignty over Taiwan. If the status quo of separation cannot be maintained, the United States prefers Taiwan independence to being unified with mainland China. So we have  $s_1 > i_1 > u_1$ .

By backward induction, I derive the subgame perfect Nash equilibrium from the game. First, from the United States' point of view, its action in the game is to decide whether or not to promise to help Taiwan defend itself against mainland China. In this game, I assume that all players are rational and self-interested and do not make irrational decisions that bring about negative payoffs. Since all players have complete information about the values of the variables in all players' payoff functions, it will be irrational for the United States to commit itself to helping Taiwan if there are other viable choices that can yield more payoff. The United States' promise to help Taiwan defend itself against mainland China will be incredible if the United States can benefit more from taking other actions such as not promising to help Taiwan. As shown in the game structure and the players' payoff functions, I assume that, despite the United States' warning that neither mainland China or Taiwan should first breach the status quo of peaceful separation, as long as a war breaks out in the Taiwan Strait, the United States has to make a decision on whether or not to join the war and help Taiwan. Whether Taiwan declares independence before mainland China's attack or not has no effect on the United States' payoff and decision. In other words,  $US_{h,i,a} = US_{h,ni,a}$ , and  $US_{nh,i,a} = US_{nh,ni,a}$ . Moreover, as mentioned above, the condition of  $US_{h,i,a} > US_{nh,i,a}$  needs to be satisfied in order to make the U.S. promise to help Taiwan credible. This condition can be rewritten as  $(p-h)u_1 + (1-p+h)i_1 - w_1 > pu_1 + (1-p)i_1$ , which yields  $i_1 - u_1 > \frac{w_1}{h}$ . Therefore, for the United States' promise to help Taiwan defend itself against mainland China to be credible, there should be certain properties regarding the circumstance: the United States

should strongly prefer Taiwan independence to Taiwan's reunification with mainland China (large  $i_1 - u_1$ ), the cost of joining the war to help Taiwan should be relatively small (small  $w_1$ ), and the United States' joining the war should greatly increase the probability that Taiwan wins the war against mainland China (large  $h$ ). This condition explains why it is the United States, the most powerful country in the world, sharing great strategic interest in the Taiwan issue, that makes a firm commitment to defending Taiwan. In contrast, neither France, a country that has little strategic interest in the region today, nor the Philippines, located near the region but with no capacity to increase the probability of a Taiwan victory, makes such a promise.

As a result of mainland China's economic development, military modernization and loosening of political control, there is a possibility that the condition of  $i_1 - u_1 > w_1/h$  will be no longer satisfied in the future. As mainland China tries to modernize its military, the value of  $h$  tends to decrease and the value of  $w_1$  tends to increase. Meanwhile, while some factors might increase the utility difference ( $i_1 - u_1$ ), others tend to decrease it. After the end of the Cold War, and alongside mainland China's transition from a communist country to a bureaucratic authoritarian country, the ideological motivation to contain mainland China has weakened. However, as a result of Taiwan's democratization, protecting the new-born democracy tends to compensate for the weakening of ideological motivation. On the other hand, as mainland China's power grows, the United States also has more incentive to prevent mainland China from getting stronger by unifying with Taiwan. Taking account of all these factors, as time going on, there is a possibility that after a certain point of time in the future, the condition of  $i_1 - u_1 > w_1/h$  will be no longer satisfied. In this chapter, I first explore the situation in which the United States can make its promise to help Taiwan defend itself against mainland China credible ( $i_1 - u_1 > w_1/h$ ), and then explore the situation in which the United States can no longer make its promise to help Taiwan credible ( $i_1 - u_1 < w_1/h$ ). In the remainder of this chapter, before the discussion of the situation of  $i_1 - u_1 < w_1/h$ , I

assume  $i_1 - u_1 > \frac{w_1}{h}$ . However, that the United States can make promise to help Taiwan defend itself against mainland China does not mean the United States will necessarily make the promise. Whether or not to make the promise depends on the strategies of mainland China and Taiwan and the U.S.'s interest. The United States can use the choice of whether or not to make the promise or to adjust the strength of the promise to influence the decisions of mainland China and Taiwan, so as to attain the U.S.'s favorite outcome, the status quo of peaceful separation.

Second, from Taiwan's point of view, its decision on whether or not to declare independence depends on its preference order for the various arrangements--- independence, unification, and the status quo of peaceful separation, its anticipation of mainland China's strategy, and the United States' decision on whether or not to help. In this chapter, I first consider the situation in which Taiwan has preference order  $s_2 > u_2$  and  $s_2 > i_2$ , then consider the situation in which Taiwan has preference order  $s_1 > i_1 > u_1$ . Even for certain combination of mainland China and the United States' strategies, Taiwan has various strategies depending on the values of the variables in its payoff functions. In this game, I assume that each player has complete information about the values of the variables in all players' payoff functions. Therefore, in solving for the subgame perfect Nash equilibrium of this game, I follow the general principles of dynamic game of perfect information by assuming that Taiwan correctly anticipates mainland China's strategy when taking actions on its decision nodes.

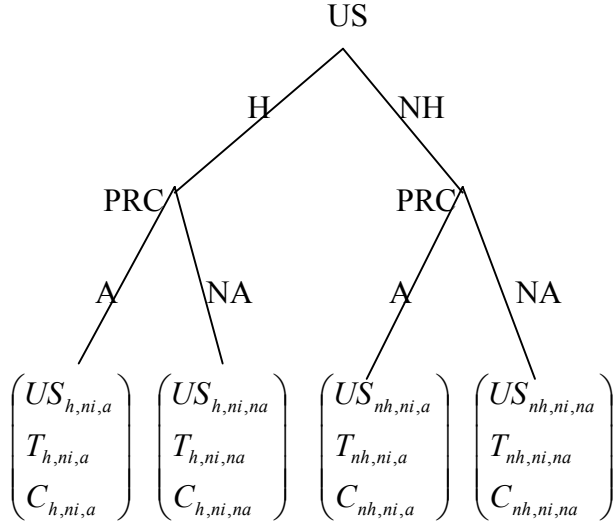
Third, because mainland China's preference order has been unchanged since the founding of the PRC, its decisions depend on its benefit-cost calculations of the various choices and on the decisions of the U.S. and Taiwan.

Let us consider the equilibrium under the condition of  $i_1 - u_1 > \frac{w_1}{h}$ , which means that if the United States promises to help Taiwan defend itself against mainland China, the promise is credible.

## ***1. When the status quo of peaceful separation is Taiwan's favorite choice***

Consider the situation in which Taiwan's preference order is  $s_2 > u_2$  and  $s_2 > i_2$ , which means Taiwan always prefers the status quo of separation to unification, and to Taiwan's independence. Taiwan's decisions depend on the United States' decision and mainland China's strategy. Based on Figure 1, we can first explore Taiwan's decisions. 1) When the United States promises to help Taiwan and mainland China prefers to attack Taiwan, since  $T_{h,ni,a} = (p-h)u_2 + (1-p+h)i_2 - w_2 > T_{h,i,a} = (p-h)u_2 + (1-p+h)i_2 - w_2 - c$ , Taiwan's payoff from not declaring independence is larger than that from declaring independence. Therefore, Taiwan prefers not to declare independence. 2) When the United States promises to help Taiwan and mainland China prefers not to attack Taiwan, since  $US_{h,ni,na} = s_1 > US_{h,i,na} = i_1$ , Taiwan's payoff from not declaring independence is larger than that from declaring independence. Therefore, Taiwan still prefers not to declare independence. 3) When the United States does not promise to help Taiwan and mainland China prefers to attack Taiwan, since  $T_{nh,ni,a} = pu_2 + (1-p)i_2 - w_2 > T_{nh,i,a} = pu_2 + (1-p)i_2 - w_2 - c$ , Taiwan's payoff from not declaring independence is still larger than that from declaring independence. Therefore, Taiwan still prefers not to declare independence. 4) When the United States does not promise to help Taiwan and mainland China prefers not to attack Taiwan, since  $US_{nh,ni,na} = s_1 > US_{nh,i,na} = i_1$ , Taiwan's payoff from not declaring independence is still larger than that from declaring independence. Therefore, Taiwan still prefers not to declare independence. The above observations indicate that when Taiwan's preference order is  $s_2 > u_2$ ,  $s_2 > i_2$ , which characterizes Taiwan under the rulings of Chiang Kai-shek and Chiang Ching-kuo, it is a dominant strategy for Taiwan not to declare independence. As a result, the strategy  $\alpha_2^1 =$  "Do not to declare independence if the United States promises to help Taiwan defend itself against mainland China; Do not declare independence if the United States does not promise to help Taiwan defend itself against mainland China" is always the optimal strategy. So we can reduce the game structure in Figure 1 to Figure 2.

Figure 2



$$US_{h,ni,a} = (p-h)u_1 + (1-p+h)i_1 - w_1, T_{h,ni,a} = (p-h)u_2 + (1-p+h)i_2 - w_2,$$

$$C_{h,ni,a} = (p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h - c$$

$$US_{h,ni,na} = s_1, T_{h,ni,na} = s_2, C_{h,ni,na} = s_3,$$

$$US_{nh,ni,a} = pu_1 + (1-p)i_1, T_{nh,ni,a} = pu_2 + (1-p)i_2 - w_2, C_{nh,ni,a} = pu_3 + (1-p)i_3 - w_3 - c,$$

$$US_{nh,ni,na} = s_1, T_{nh,ni,na} = s_2, C_{nh,ni,na} = s_3.$$

By backward induction, we can solve for the subgame perfect Nash equilibrium by first exploring mainland China's strategies and then the United States' strategies, which yield various security scenarios in the Taiwan Strait. Under the conditions that the United States' promise to help Taiwan defend itself against mainland China when a war breaks out is credible ( $i_1 - u_1 > \frac{w_1}{h}$ ) and Taiwan prefers the status quo of peaceful separation ( $s_2 > u_2, s_2 > i_2$ ), there can be the following scenarios.

Scenario 1: In this case, when  $C_{h,ni,a} = (p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h - c > C_{h,ni,na} = s_3$  (or rewritten as  $u_3 > i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$ ), mainland China's strategy is  $\alpha_3^1 =$  "Attack Taiwan if the United States promises to help Taiwan, Attack Taiwan if the United States does not promise to help Taiwan." Since the United States has  $i_1 - u_1 > \frac{w_1}{h}$ , which implies  $US_{h,ni,a} = (p-h)u_1 + (1-p+h)i_1 - w_1 > US_{nh,ni,a} = pu_1 + (1-p)i_1$ , the United States' strategy will be  $\alpha_1^1 =$  "Promise to help Taiwan." The outcome will be "Help, No Independence, Attack."

Scenario 2: When  $C_{h,ni,a} = (p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h - c < C_{h,ni,na} = s_3$  and  $C_{nh,ni,a} = pu_3 + (1-p)i_3 - w_3 - c > C_{nh,ni,na} = s_3$  (or rewritten as  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$ ), mainland China's strategy is  $\alpha_3^2 =$  "Do not attack Taiwan if the United States promises to help Taiwan; Attack Taiwan if the United States does not promise to help Taiwan." To prevent mainland China from attacking Taiwan, the United States' strategy should be  $\alpha_1^1 =$  "Promise to help Taiwan." The outcome will be "Help, No Independence, No Attack."

Scenario 3: When  $C_{nh,ni,a} = pu_3 + (1-p)i_3 - w_3 - c < C_{nh,ni,na} = s_3$  (or rewritten as  $u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$ ), mainland China's strategy is  $\alpha_3^3 =$  "Do not attack Taiwan if the United States promises to help Taiwan; Do not attack Taiwan if the United States does not promise to help Taiwan." In this situation, both  $\alpha_1^1 =$  "Promise to help Taiwan" and  $\alpha_1^2 =$  "Do not promise to help Taiwan" can be the optimal strategy. The outcomes can be either "Help, No Independence, No Attack" or "No Help, No Independence, No Attack."

Actually, under the conditions of  $i_1 - u_1 > \frac{w_1}{h}$ ,  $s_2 > u_2$  and  $s_2 > i_2$ , strategy  $\alpha_1^2 =$  “Do not promise to help Taiwan” is a weakly dominated strategy for the United States. Therefore, when Taiwan was under the rulings of Chiang Kai-shek and Chiang Ching-kuo, the United States for most of the time strongly promised to help Taiwan defend itself against mainland China.

## ***II. When Independence becomes Taiwan’s favorite choice***

Over the past decade, the domestic politics in Taiwan has dramatically changed. After Chiang Ching-kuo died in 1988, Lee Teng-hui, a native Taiwanese, became the President of the ROC. Lee Teng-hui launched constitutional reforms and continued the programs of nativization and democratization started by Chiang Ching-kuo in his late years. Through nativization, Lee gradually eliminated the Chinese nationalist ideology and expelled the non-mainstream nationalists, who preferred to have closer relations with mainland China and suppress the Taiwan independence movement, out of the KMT. Taiwan declared in 1991 that the ROC on Taiwan is the government only for people in Taiwan, Penghu, Kinmen and Matsu. In 1996, Taiwan had the first free presidential election with universal suffrage. As the cause or result of these processes of nativization and democratization, Taiwan’s preference order became  $i_2 > s_2 > u_2$ . The following solution is for the pure strategy equilibrium of the game. In this section, I still only consider the situation of  $i_1 - u_1 > \frac{w_1}{h}$  in which the U.S. promises to help Taiwan defend itself against mainland China is credible.

Let us follow the principle of backward induction by first determining mainland China’s strategies and actions at the final decision nodes, and then Taiwan and the United States’ strategies and actions. From mainland China’s point of view, its decision on whether or not to attack Taiwan depends on whether Taiwan declares independence, whether the United States promised to help Taiwan, its benefit-cost calculations for its choices and the values of the variables in the three players’ payoff functions. Mainland China’s optimal strategies are as follows.

Given that the United States promises to help Taiwan defend itself against mainland China.

If  $C_{h,ni,a} > C_{h,ni,na}$ , that is,  $(p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h - c > s_3$  (or rewritten as  $u_3 > i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$ ), mainland China will attack Taiwan whatever decision Taiwan makes. If mainland China loses the war, Taiwan will succeed in achieving independence, and mainland China will lose even the benefit of the status quo of peaceful separation. So mainland China needs to compare between the expected utility of an offensive attack to Taiwan and the utility of the status quo of separation. Since the expected utility of offensively attacking Taiwan  $(p-h)u_3 + (1-p+h)i_3 - w_3 - c$  is greater than its opportunity cost, the utility of the status quo of separation  $s_3$ , mainland China chooses to attack Taiwan in this situation even if Taiwan does not declare independence. Meanwhile, under the condition of  $C_{h,ni,a} > C_{h,ni,na}$ , since  $(p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h - c < (p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h$  and  $s_3 > i_3$ , that is,  $C_{h,ni,a} < C_{h,i,a}$  and  $C_{h,ni,na} > C_{h,i,na}$ , we have  $C_{h,i,a} > C_{h,i,na}$ , which means that mainland China will attack Taiwan if Taiwan declares independence. Therefore, given that the United States promises to help Taiwan defend itself against mainland China, when  $u_3 > i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$ , mainland China will attack Taiwan for both the situations that Taiwan declares independence and Taiwan does not.

If  $C_{h,i,a} > C_{h,i,na}$  and  $C_{h,ni,a} < C_{h,ni,na}$ , that is,  $(p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h > i_3$  and  $(p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h - c < s_3$  (or rewritten as  $i_3 + \frac{(w_3 + w_3^h)}{(p-h)} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$ ), mainland China will attack Taiwan if Taiwan declares independence, but will not if Taiwan does not. In this situation, if Taiwan declares independence, the expected utility of attacking Taiwan is larger than the opportunity cost, tolerating Taiwan independence. Therefore, mainland China chooses to attack Taiwan. If Taiwan does not declare independence, the

opportunity cost of attacking Taiwan is the utility of the status quo of peaceful separation, which is larger than the expected utility of attacking Taiwan. Therefore, mainland China chooses not to attack Taiwan.

If  $C_{h,i,a} < C_{h,i,na}$ , that is,  $(p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h > i_3$  (or rewritten as  $u_3 < i_3 + \frac{(w_3 + w_3^h)}{(p-h)}$ ), mainland China will not attack Taiwan even if the latter declares independence. The reasons for this situation could be that mainland China does not strongly prefer unification to Taiwan independence, the probability that mainland China will win a war against Taiwan under the condition that the United States promises to help Taiwan is small, or the cost of waging a war is too large for mainland China. In this situation, since  $C_{h,ni,a} < C_{h,i,a}$  and  $C_{h,ni,na} > C_{h,i,na}$ , we have  $C_{h,ni,a} < C_{h,ni,na}$ , which implies that mainland China will not attack Taiwan if Taiwan does not declare independence. Therefore, under the conditions that the United States promises to help Taiwan and  $u_3 < i_3 + \frac{(w_3 + w_3^h)}{(p-h)}$ , mainland China will not attack Taiwan whatever decision Taiwan makes.

If the United States does not promise to help Taiwan defend itself against mainland China, mainland China does not need to take account of the relative strengths between mainland China and the U.S. captured by  $h$ . As a result, the probability that mainland China will win the war is  $p$  rather than  $p-h$ .

If  $C_{nh,ni,a} > C_{nh,ni,na}$ , that is,  $pu_3 + (1-p)i_3 - w_3 - c > s_3$  (or rewritten as  $u_3 > i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$ ), mainland China will attack Taiwan if Taiwan does not declare independence. In this situation, since  $pu_3 + (1-p)i_3 - w_3 - c < pu_3 + (1-p)i_3 - w_3$  and  $s_3 > i_3$ , that is,  $C_{nh,ni,a} < C_{nh,i,a}$  and  $C_{nh,ni,na} > C_{nh,i,na}$ , we have  $C_{nh,i,a} > C_{nh,i,na}$ , which means mainland China will attack Taiwan if Taiwan declares independence. Therefore, given that the United States does not

promise to help Taiwan, if  $u_3 > i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$ , mainland China will attack Taiwan whatever decision Taiwan makes.

If  $C_{nh,i,a} > C_{nh,i,na}$  and  $C_{nh,ni,a} < C_{nh,ni,na}$ , that is,  $pu_3 + (1-p)i_3 - w_3 > i_3$  and  $pu_3 + (1-p)i_3 - w_3 - c < s_3$  (or rewritten as  $i_3 + \frac{w_3}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$ ), mainland China will attack Taiwan if Taiwan declares independence, but will not if Taiwan does not.

If  $C_{nh,i,a} < C_{nh,i,na}$ , that is,  $pu_3 + (1-p)i_3 - w_3 < i_3$  (or rewritten as  $u_3 < i_3 + \frac{w_3}{p}$ ), mainland China will not attack Taiwan even if Taiwan declares independence. Since  $C_{nh,ni,a} < C_{nh,i,a}$  and  $C_{nh,ni,na} > C_{nh,i,na}$ , we have  $C_{nh,ni,a} < C_{nh,ni,na}$ , which implies that mainland China will not attack Taiwan if Taiwan does not declare independence. Therefore, under the conditions that the United States does not promise to help Taiwan and  $u_3 < i_3 + \frac{w_3}{p-h}$ , mainland China will not attack Taiwan whatever decision Taiwan makes.

Combining the above observations regarding mainland China's choices, we have the strategy set of mainland China. Moreover, given each combination of mainland China's strategy and the United States' decision, Taiwan also has its strategy. The following is a list of the strategies of mainland China and, as a response to them, Taiwan's strategies and, as a response to both mainland China and Taiwan's strategies, the United States' decisions under the conditions of  $i_2 > s_2 > u_2$  and  $i_1 - u_1 > \frac{w_1}{h}$ . Under the conditions that the United States can make its promise to help Taiwan defend itself against mainland China credible ( $i_1 - u_1 > \frac{w_1}{h}$ ) and Taiwan has preference order as  $i_2 > s_2 > u_2$ , we can derive the subgame perfect Nash equilibrium of the game based on the properties regarding the values of the variables in the players' payoff functions.

1) When  $u_3 > i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$ , mainland China's strategy is  $\theta_3^1 =$  "Attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence." Given mainland China's strategy, if the United States promises to help Taiwan, since  $T_{h,i,a} = (p-h)u_2 + (1-p+h)i_2 - w_2 - c < T_{h,ni,a} = (p-h)u_2 + (1-p+h)i_2 - w_2$ , Taiwan will not declare independence; if the United States does not promise to help Taiwan, since  $T_{nh,i,a} = pu_2 + (1-p)i_2 - w_2 - c < T_{nh,ni,a} = pu_2 + (1-p)i_2 - w_2$ , Taiwan will not declare independence either. In response to mainland China's strategy  $\theta_3^1$ , whatever decision the U.S. makes, "Do not declare independence" is the dominant strategy for Taiwan, and "No Independence" is always Taiwan's decision. Since it is assumed  $i_1 - u_1 > \frac{w_1}{h}$  in this section, anticipating correctly Taiwan and mainland China's decisions, the United States will promise to help Taiwan. However, because of mainland China's aggressive position, this promise has no effect of deterring mainland China's attack and preventing a war from breaking out in the Taiwan Strait.

Therefore we have:

Scenario 4: When  $u_3 > i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$ , mainland China's strategy is  $\theta_3^1 =$  "Attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence." Taiwan's strategy is  $\theta_2^1 =$  "Do not declare independence if the United States promises to help; Do not declare independence if the United States do not promise to help." The

United States' strategy is  $\theta_1^1 = \text{"Promise to help Taiwan."}$  The outcome is (Help, No Independence, Attack).

2) When  $u_3 < i_3 + \frac{w_3}{p}$ , mainland China's strategy is  $\theta_3^2 = \text{"Do not attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Do not attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence."}$  This strategy means that mainland China will not attack Taiwan whatever decisions the United States and Taiwan make. If the United States promises to help Taiwan, since  $T_{h,i,na} = i_2 > T_{h,ni,na} = s_2$ , Taiwan will declare independence. If the United States does not promise to help Taiwan, since  $T_{nh,i,na} = i_2 > T_{nh,ni,na} = s_2$ , Taiwan will still declare independence. So "Declare independence" is the dominant strategy for Taiwan. For the United States, both "Promise to help Taiwan defend itself against mainland China" and "Do not promise to help Taiwan defend itself against mainland China" can be its optimal decisions. Because of mainland China's weak position, it is impossible for war to break out, and the United States' decision has no effect on Taiwan and mainland China's decisions.

Therefore, we have:

Scenario 5: When  $u_3 < i_3 + \frac{w_3}{p}$ , mainland China's strategy is  $\theta_3^2 = \text{"Do not attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Do not attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence."}$  Taiwan's strategy is  $\theta_2^2 = \text{"Declare independence if the United States promises to help; Declare independence if the United States does not promise to help."}$  Both  $\theta_1^1 = \text{"Promise to help Taiwan"}$  and  $\theta_1^2 = \text{"Do not promise to help Taiwan"}$  are the

United States' optimal strategies. The outcome is "Help, Independence, No Attack" or "No Help, Independence, No Attack."

For the situations of  $i_3 + \frac{w_3}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$ , there are two types of situations:  $\frac{(w_3 + w_3^h)}{(p-h)} < \frac{(s_3 - i_3 + w_3 + c)}{p}$  and  $\frac{(w_3 + w_3^h)}{(p-h)} > \frac{(s_3 - i_3 + w_3 + c)}{p}$ .

A. For the situations of  $\frac{(w_3 + w_3^h)}{(p-h)} < \frac{(s_3 - i_3 + w_3 + c)}{p}$  which implies  $h < \frac{p(s_3 - i_3 - w_3^h + c)}{(s_3 - i_3 + w_3 + c)}$ .

3) When  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$ , mainland China's strategy is  $\theta_3^3 =$  "Attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence." Given that the United States promises to help Taiwan, mainland China will attack Taiwan if Taiwan declares independence and will not if Taiwan does not. In response to this strategy, if  $T_{h,i,a} = (p-h)u_2 + (1-p+h)i_2 - w_2 - c > T_{h,ni,na} = s_2$  (or rewritten as  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)}$ ), Taiwan will declare independence; if  $T_{h,i,a} = (p-h)u_2 + (1-p+h)i_2 - w_2 - c < T_{h,ni,na} = s_2$  (or rewritten as  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)}$ ), Taiwan will not declare independence. Given that the United States does not promise to help Taiwan, mainland China will attack Taiwan whatever decision Taiwan makes. Therefore, since  $T_{nh,i,a} = pu_2 + (1-p)i_2 - w_2 - c < T_{nh,ni,a} = pu_2 + (1-p)i_2 - w_2$ , Taiwan will not declare

independence. Anticipating Taiwan and mainland China's strategies, the United States should promise to help Taiwan defend itself against mainland China. This promise can effectively prevent war started by mainland China. However, given this promise, if Taiwan prefers independence ( $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1 - p + h)}$ ) and declares independence, war still breaks out; if Taiwan's preference for independence is not very strong ( $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1 - p + h)}$ ) and Taiwan does not declare independence, the U.S.'s promise does effectively maintain the balance of power and prevent the war. Actually, in this situation, if Taiwan has  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1 - p + h)}$ , even though the United States has no pure strategy to prevent war, it is possible that under certain conditions, the United States employs a mixed strategy by assigning certain probabilities to the two pure strategies respectively to prevent the war. We will introduce mixed strategy into the model in Section IV of this chapter.

Therefore, we have:

Scenario 6: When  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p - h)}$  and  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1 - p + h)}$ , mainland China's strategy is  $\theta_3^3 =$  "Attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence." Taiwan's strategy is  $\theta_2^3 =$  "Declare independence if the United States promises to help; Do not declare independence if the United States do not promise to help." The United States' strategy is  $\theta_1^1 =$  "Promise to help Taiwan." The outcome is "Help, Independence, Attack."

Scenario 7: When  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$  and  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)}$ , mainland China's strategy is  $\theta_3^3 =$  "Attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence." Taiwan's strategy is  $\theta_2^1 =$  "Do not declare independence if the United States promises to help; Do not declare independence if the United States do not promise to help." The United States' strategy is  $\theta_1^1 =$  "Promise to help Taiwan." The outcome is "Help, No Independence, No Attack."

4) When  $i_3 + \frac{(w_3 + w_3^h)}{(p-h)} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$ , mainland China's strategy is  $\theta_3^4 =$  "Attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence." Whatever decision the United States makes, mainland China will attack Taiwan if Taiwan declares independence and will not if Taiwan does not. In response to mainland China's strategy, when the United States promises to help, if  $T_{h,i,a} = (p-h)u_2 + (1-p+h)i_2 - w_2 - c > T_{h,ni,na} = s_2$  (or rewritten as  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)}$ ), Taiwan will declare independence; if  $T_{h,i,a} = (p-h)u_2 + (1-p+h)i_2 - w_2 - c < T_{h,ni,na} = s_2$  (or rewritten as  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)}$ ), Taiwan will not declare independence. When the United States does not promise to help, if  $T_{nh,i,a} = pu_2 + (1-p)i_2 - w_2 - c > T_{nh,ni,na} = s_2$  (or rewritten as  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ ), Taiwan will declare independence; if

$$T_{nh,i,a} = pu_2 + (1-p)i_2 - w_2 - c < T_{nh,ni,na} = s_2 \quad (\text{or rewritten as}$$

$i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ ), Taiwan will not declare independence. The United

States' decision is based on its anticipations of Taiwan and mainland China's strategies.

Given mainland China's strategy, when  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ , Taiwan will

declare independence regardless of the U.S.'s decision, and the United States will promise to help. But in this situation, the promise has no effect of preventing the war

from breaking out. When

$$u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)} < i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}, \quad \text{Taiwan will}$$

declare independence if the United States promises to help and will not if the United States does not, and the United States will not promise to help Taiwan. In this situation,

Taiwan's decision depends on the United States' promise to help, and the United States' strategy of not promising to help Taiwan effectively forces Taiwan not to declare

independence and prevents the war. When  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)}$ , Taiwan

will not declare independence regardless of whether the United States promises to help or not, and the United States will either "Promise to help Taiwan" or "Do not promise to help Taiwan."

Therefore, we have three scenarios:

$$\text{Scenario 8: When } i_3 + \frac{(w_3 + w_3^h)}{(p-h)} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p} \quad \text{and}$$

$i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ , mainland China's strategy is  $\theta_3^4 =$  "Attack Taiwan if

the United States promises to help Taiwan and Taiwan declares independence; Do not

attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare

independence; Attack Taiwan if the United States does not promise to help Taiwan and

Taiwan declares independence; Do not attack Taiwan if the United States does not

promise to help Taiwan and Taiwan does not declare independence." Taiwan's strategy is

$\theta_2^2 =$  "Declare independence if the United States promises to help; Declare independence

if the United States do not promise to help.” The United States’ strategy is  $\theta_1^1 =$  “Promise to help Taiwan.” The outcome is “Help, Independence, Attack.”

Scenario 9: When  $i_3 + \frac{(w_3 + w_3^h)}{(p-h)} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$  and  $u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)} < i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ , mainland China’s strategy is  $\theta_3^4 =$  “Attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence.” Taiwan’s strategy is  $\theta_2^3 =$  “Declare independence if the United States promises to help; Do not declare independence if the United States do not promise to help.” The United States’ strategy is  $\theta_1^2 =$  “Do not promise to help Taiwan.” The outcome is “No Help, No Independence, No Attack.”

Scenario 10: When  $i_3 + \frac{(w_3 + w_3^h)}{(p-h)} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$  and  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)}$ , mainland China’s strategy is  $\theta_3^4 =$  “Attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence.” Taiwan’s strategy is  $\theta_2^1 =$  “Do not declare independence if the United States promises to help; Do not declare independence if the United States do not promise to help.” Both  $\theta_1^1 =$  “Promise to help Taiwan” and  $\theta_1^2 =$  “Do not promise to help Taiwan” are the United States’ optimal strategies. The outcome is “Help, No Independence, No Attack” or “No Help, No Independence, No Attack.”

5) When  $i_3 + \frac{w_3}{p} < u_3 < i_3 + \frac{(w_3 + w_3^h)}{(p-h)}$ , mainland China's strategy is  $\theta_3^s =$  "Do not attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence." According to this strategy, when the United States promises to help Taiwan, mainland China will not attack Taiwan regardless of whether Taiwan declares independence or not. Therefore, since  $T_{h,i,na} = i_2 > T_{h,ni,na} = s_2$ , Taiwan will declare independence. When the United States does not promise to help Taiwan, mainland China will attack Taiwan if Taiwan declares independence and will not if Taiwan does not. Therefore, if  $T_{nh,i,a} = pu_2 + (1-p)i_2 - w_2 - c > T_{nh,ni,na} = s_2$  (or rewritten as  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ ), Taiwan will declare independence regardless of whether the United States promises to help or not; if  $T_{nh,i,a} = pu_2 + (1-p)i_2 - w_2 - c < T_{nh,ni,na} = s_2$  (or rewritten as  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ ), Taiwan will declare independence if the United States promises to help and will not if the United States does not. Anticipating Taiwan and mainland China's strategies, when Taiwan strongly prefers independence ( $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ ) and declares independence anyhow, the United States should promise to help Taiwan in order to deter mainland China from attacking Taiwan and prevent the war. In this situation, the Taiwan independence movement is so radical that it will not be affected by the United States' decision. Since the United States finds it impossible to deter Taiwan from declaring independence, it has to deter mainland China from attacking Taiwan by promising to help Taiwan, even though it prefers maintaining the status quo of peaceful separation to supporting Taiwan independence. This promise can prevent the war even though Taiwan declares independence. In contrast, when Taiwan has  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ , it will declare independence if the

United States promises to help and will not if the United States does not. Therefore, taking account of mainland China's strategy, in order to prevent Taiwan from declaring independence and maintain the status quo of peaceful separation, the United States should not promise to help Taiwan defend itself against mainland China.

Therefore, we have:

Scenario 11: When  $i_3 + \frac{w_3}{p} < u_3 < i_3 + \frac{(w_3 + w_3^h)}{(p-h)}$ ,  $\frac{(w_3 + w_3^h)}{(p-h)} < \frac{(s_3 - i_3 + w_3 + c)}{p}$  and  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ , mainland China's strategy is  $\theta_3^5 =$  "Do not attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence." Taiwan's strategy is  $\theta_2^2 =$  "Declare independence if the United States promises to help; Declare independence if the United States does not promise to help." The United States' strategy is  $\theta_1^1 =$  "Promise to help Taiwan." The outcome is "Help, Independence, No Attack."

Scenario 12: When  $i_3 + \frac{(w_3 + w_3^h)}{p} < u_3 < i_3 + \frac{(w_3 + w_3^h)}{(p-h)}$ ,  $\frac{(w_3 + w_3^h)}{(p-h)} < \frac{(s_3 - i_3 + w_3 + c)}{p}$  and  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ , mainland China's strategy is  $\theta_3^5 =$  "Do not attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence." Taiwan's strategy is  $\theta_2^3 =$  "Declare independence if the United States promises to help; Do not declare independence if the United States does not

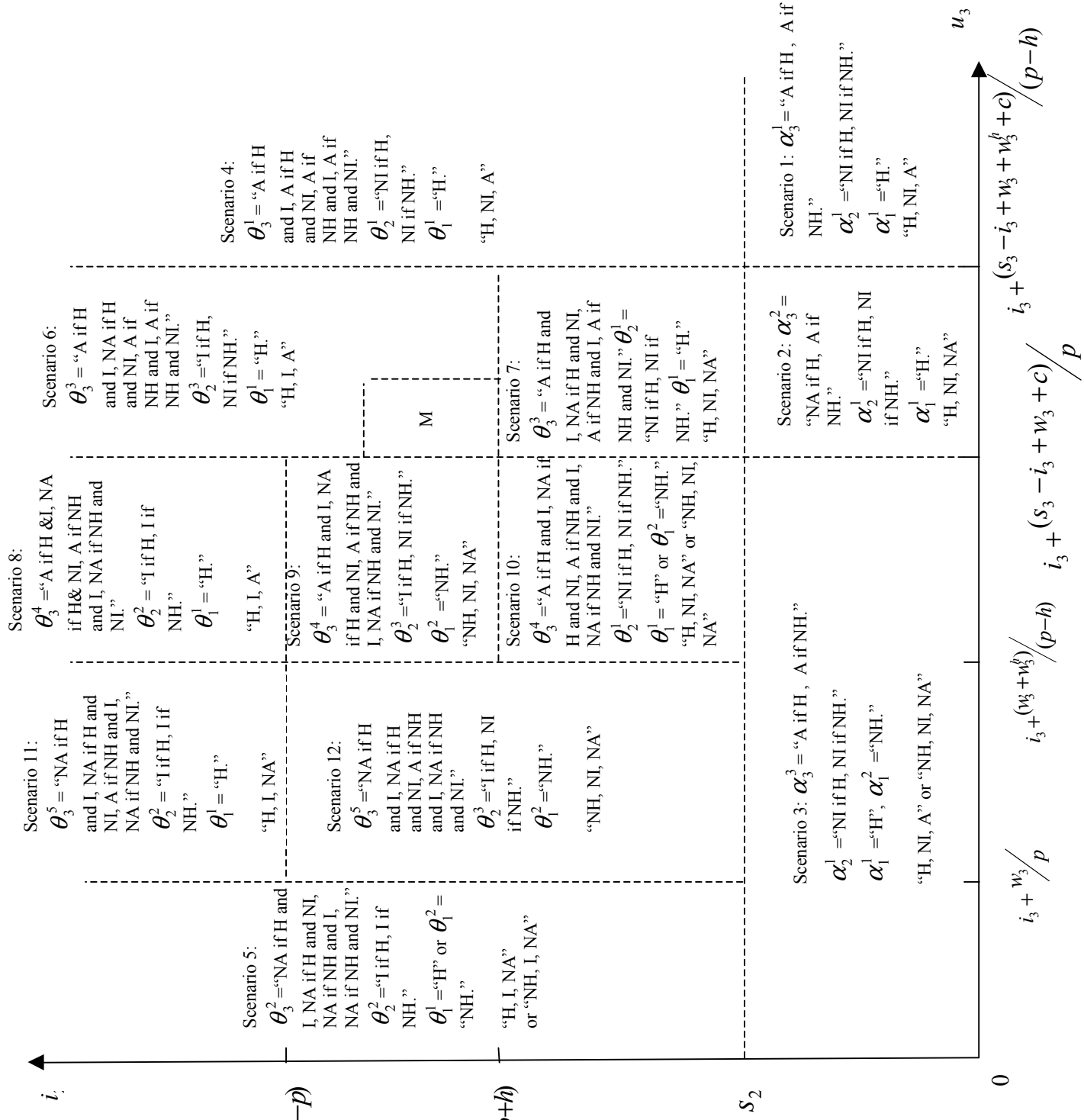
promise to help.” The United States’ strategy is  $\theta_1^2 =$  “Do not promise to help Taiwan.” The outcome is “No Help, No Independence, No Attack.”

Under the conditions of  $i_2 > s_2 > u_2$  ,  $i_1 - u_1 > \frac{w_1}{h}$  , and  $\frac{(w_3 + w_3^h)}{(p-h)} < \frac{(s_3 - i_3 + w_3 + c)}{p}$  , all the possible scenarios are summarized in Figure 3.

Figure 3

$$u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$$

$$u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)}$$



B. For the situations of  $(w_3 + w_3^h) / (p - h) > (s_3 - i_3 + w_3 + c) / p$  which implies  $h > p(s_3 - i_3 - w_3^h + c) / (s_3 - i_3 + w_3 + c)$ .

6) When  $i_3 + (w_3 + w_3^h) / (p - h) < u_3 < i_3 + (s_3 - i_3 + w_3 + w_3^h + c) / (p - h)$ , mainland China's strategy is  $\theta_3^2 =$  "Attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence." Given that the United States promises to help Taiwan, mainland China will attack Taiwan if Taiwan declares independence and will not if Taiwan does not. In response to this strategy, if  $T_{h,i,a} = (p - h)u_2 + (1 - p + h)i_2 - w_2 - c > T_{h,ni,na} = s_2$  (or rewritten as  $i_2 > u_2 + (s_2 - u_2 + w_2 + c) / (1 - p + h)$ ), Taiwan will declare independence; if  $T_{h,i,a} = (p - h)u_2 + (1 - p + h)i_2 - w_2 - c < T_{h,ni,na} = s_2$  (or rewritten as  $i_2 < u_2 + (s_2 - u_2 + w_2 + c) / (1 - p + h)$ ), Taiwan will not declare independence. Given that the United States does not promise to help Taiwan, mainland China will attack Taiwan whatever decision Taiwan makes. Therefore, since  $T_{nh,i,a} = pu_2 + (1 - p)i_2 - w_2 - c < T_{nh,ni,a} = pu_2 + (1 - p)i_2 - w_2$ , Taiwan will not declare independence. Anticipating Taiwan and mainland China's strategies, the United States should promise to help Taiwan defend itself against mainland China. This promise can effectively prevent any war started by mainland China. However, given this promise, if Taiwan prefers independence ( $i_2 > u_2 + (s_2 - u_2 + w_2 + c) / (1 - p + h)$ ) and declares independence, war still breaks out; if the Taiwan independence movement is not very radical ( $i_2 < u_2 + (s_2 - u_2 + w_2 + c) / (1 - p + h)$ ) and Taiwan does not declare independence, the U.S.'s promise does effectively maintain the balance of power and

prevent the war. As mentioned in 3), in this situation, when Taiwan has  $(p-h)u_2 + (1-p+h)i_2 - w_2 - c > s_2$ , even though the United States has no pure strategy to prevent war, it is possible that the United States can employ a mixed strategy to prevent the war.

Therefore, we have: When  

$$i_3 + \frac{(w_3 + w_3^h)}{(p-h)} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$$
 and  

$$i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)}$$
, the subgame perfect Nash equilibrium will be the same as in Scenario 6; When  

$$i_3 + \frac{(w_3 + w_3^h)}{(p-h)} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$$
 and  

$$i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)}$$
, the subgame perfect Nash equilibrium will be the same as in Scenario 7.

7) When  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p} < u_3 < i_3 + \frac{(w_3 + w_3^h)}{(p-h)}$ , mainland China's strategy is  $\theta_3^6 =$  "Do not attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence." Under this condition, if the United States promises to help Taiwan, mainland China will not attack Taiwan whatever decision Taiwan makes. Therefore, since  $T_{h,i,na} = i_2 > T_{h,ni,na} = s_2$ , Taiwan will declare independence. If the United States does not promise to help Taiwan, mainland China will attack Taiwan whatever decision Taiwan makes. Therefore, since  $T_{nh,i,a} = pu_2 + (1-p)i_2 - w_2 - c < T_{nh,ni,a} = pu_2 + (1-p)i_2 - w_2$ , Taiwan will not declare independence. Anticipating Taiwan and mainland China's strategies, since  $US_{h,i,na} = i_1 > US_{nh,ni,a} = pu_1 + (1-p)i_1$ , the United States will promise to help Taiwan.

The outcome will be that Taiwan declares independence and mainland China does not attack it. In this situation, the United States' promise to help Taiwan makes a big difference, not only deterring mainland China from offensively attacking Taiwan, but also helping Taiwan to safely declare independence. The reason for this is that, for the condition  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p} < u_3 < i_3 + \frac{(w_3 + w_3^h)}{(p-h)}$  (which implies  $\frac{(s_3 - i_3 + w_3 + c)}{p} < \frac{(w_3 + w_3^h)}{(p-h)}$ , or  $h > \frac{p(s_3 - i_3 - w_3^h + c)}{(s_3 - i_3 + w_3 + c)}$ ) to be satisfied,  $h$  has to be very large. The United States is so powerful compared to mainland China that when the United States promises to help Taiwan, Taiwan can take advantage of this promise and declare independence. What is more, the smaller  $p$  is and the larger  $w_3$  and  $w_3^h$  are, the more likely the above condition is satisfied. Under this condition, mainland China prefers unification so much that mainland China will definitely attack Taiwan if the United States does not promise to help Taiwan. Therefore, in order to prevent a war started by mainland China, the United States has to promise to help Taiwan and give Taiwan a free gift, independence. In this case, the United States is so powerful that its action tilts the balance of power to the other end.

Therefore, we have:

Scenario 13: When  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p} < u_3 < i_3 + \frac{(w_3 + w_3^h)}{(p-h)}$ , which implies  $\frac{(s_3 - i_3 + w_3 + c)}{p} < \frac{(w_3 + w_3^h)}{(p-h)}$ , mainland China's strategy is  $\theta_3^6 =$  "Do not attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence." Taiwan's strategy is  $\theta_2^3 =$  "Declare independence if the United States promises to help; Do not declare independence if the United States does not promise to help." The United

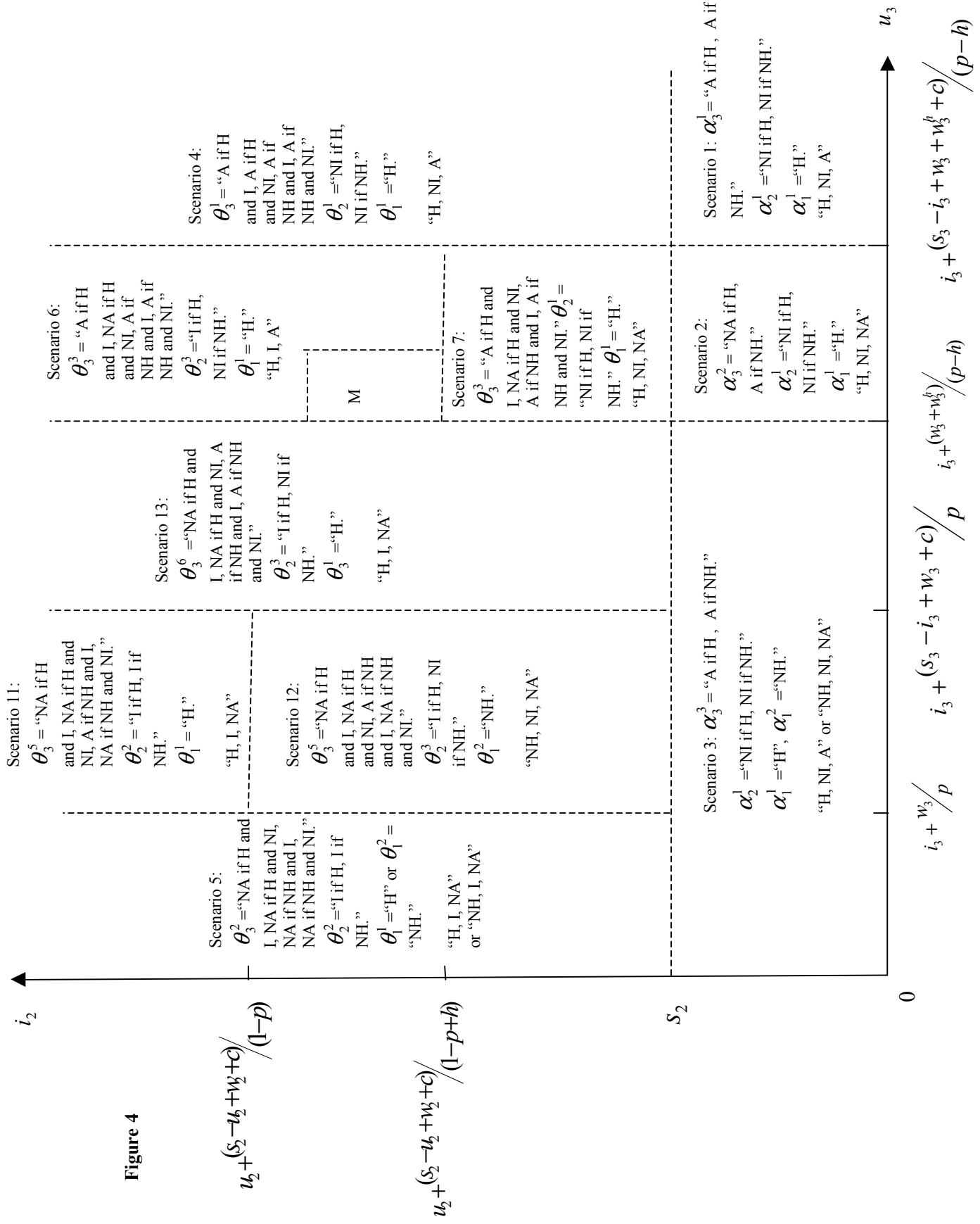
States' strategy is  $\theta_1^1 =$  "Promise to help Taiwan." The outcome is "Help, Independence, No Attack."

8) When  $i_3 + \frac{w_3}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$ , mainland China's strategy is  $\theta_3^5 =$  "Do not attack Taiwan if the United States promises to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States promises to help Taiwan and Taiwan does not declare independence; Attack Taiwan if the United States does not promise to help Taiwan and Taiwan declares independence; Do not attack Taiwan if the United States does not promise to help Taiwan and Taiwan does not declare independence." Under this condition, if the United States promises to help Taiwan, mainland China will not attack Taiwan regardless of whether Taiwan declares independence or not. Therefore, since  $T_{h,i,na} = i_2 > T_{h,ni,na} = s_2$ , Taiwan will declare independence. If the United States does not promise to help Taiwan, mainland China will attack Taiwan if Taiwan declares independence and will not if Taiwan does not. Therefore, if  $T_{nh,i,a} = pu_2 + (1-p)i_2 - w_2 - c > T_{nh,ni,na} = s_2$  (or rewritten as  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ ), Taiwan will declare independence regardless of whether the United States promises to help or not; if  $T_{nh,i,a} = pu_2 + (1-p)i_2 - w_2 - c < T_{nh,ni,na} = s_2$  (or rewritten as  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ ), Taiwan will declare independence if the United States promises to help and will not if the United States does not. Anticipating Taiwan and mainland China's strategies, when  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ , Taiwan declares independence anyhow, and the United States should promise to help Taiwan in order to deter mainland China from attacking Taiwan and prevent the war. In contrast, when Taiwan has  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ , Taiwan will declare independence if the United States promises to help and will not if the United States does not. Therefore, to prevent Taiwan from declaring independence and maintain the status quo of peaceful

separation, the United States should not promise to help Taiwan defend itself against mainland China.

Therefore, we have: When  $i_3 + \frac{w_3}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$  and  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ , the subgame perfect Nash equilibrium will be the same as in Scenario 11; When  $i_3 + \frac{w_3}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$  and  $\frac{w_3}{(p-h)} \leq \frac{(s_3 - i_3 + w_3 + c)}{p}$  and  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ , the subgame perfect Nash equilibrium will be the same as in Scenario 12.

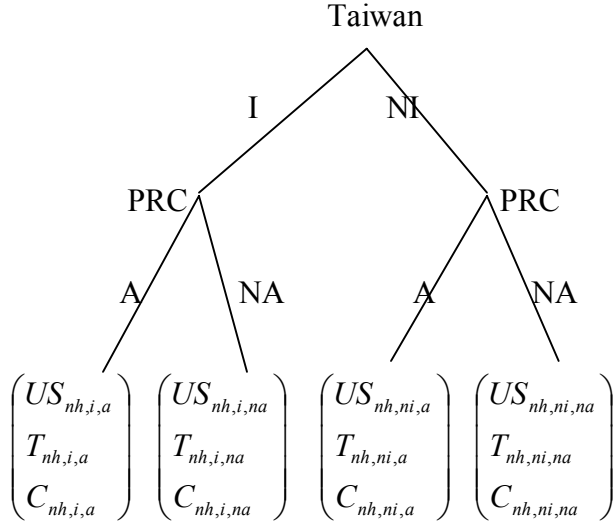
Under the conditions of  $i_2 > s_2 > u_2$ ,  $i_1 - u_1 > \frac{w_1}{h}$ , and  $\frac{(w_3 + w_3^h)}{(p-h)} > \frac{(s_3 - i_3 + w_3 + c)}{p}$ , all the possible scenarios are summarized in Figure 4.



### **III. When the United States' promise to help is no longer credible**

In the above analysis, I assume that  $i_1 - u_1 > w_1/h$ , which means that if the United States promises to help Taiwan defend itself against mainland China, the promise is credible. However, it is possible that this condition will be no longer satisfied some time in the future. In the past two decades, mainland China has experienced rapid economic development and social changes. Mainland China's trade relationships with the United States and the inflow of foreign direct investment to mainland China have contributed greatly to these changes. With these trends continuing, if Chinese government reforms its political system and channels its economic growth into military strength, there is a possibility that the power advantage that the United States enjoys over mainland China will decrease in the future. In other words, the increased probability that Taiwan will win the war against mainland China because of the United States' help ( $h$ ) will decrease in the future. On the other hand, as economic exchange between mainland China and the United States grows, the cost of having a war against mainland China ( $w_1$ ) also increases. Moreover, if mainland China can democratize itself in the future, which is highly likely, the ideological incentive to prevent the Chinese reunification will decrease. As a result, there is a possibility that after some point in the future, the condition for the United States to make a credible promise to help Taiwan defend itself against mainland China ( $i_1 - u_1 > w_1/h$ ) can no longer be satisfied. Since the values of all the variables in all players' payoff functions are common knowledge, the players taking actions first can correctly anticipate the actions of the players acting later, and the players taking actions later know the actions of the players acting before, the United States' promise to help Taiwan will be incredible under the condition of  $i_1 - u_1 < w_1/h$ . As a result, when  $i_1 - u_1 < w_1/h$ , the United States will not make a promise because it is incredible. Therefore, under the condition that the United States cannot make its promise to help Taiwan defend itself against mainland China credible, the game structure can be reduced to as illustrated in Figure 5.

Figure 5



$$US_{nh,i,a} = pu_1 + (1-p)i_1, T_{nh,i,a} = pu_2 + (1-p)i_2 - w_2 - c, C_{nh,i,a} = pu_3 + (1-p)i_3 - w_3,$$

$$US_{nh,i,na} = i_1, T_{nh,i,na} = i_2, C_{nh,i,na} = i_3,$$

$$US_{nh,ni,a} = pu_1 + (1-p)i_1, T_{nh,ni,a} = pu_2 + (1-p)i_2 - w_2, C_{nh,ni,a} = pu_3 + (1-p)i_3 - w_3 - c,$$

$$US_{nh,ni,na} = s_1, T_{nh,ni,na} = s_2, C_{nh,ni,na} = s_3.$$

Given that the U.S. does not promise to help Taiwan defend itself against mainland China when a war breaks out, the probability that mainland China will win the war against Taiwan is  $p$  rather than  $p-h$ . The equilibrium of the reduced game is as follows.

Scenario 14: When  $pu_3 + (1-p)i_3 - w_3 - c > s_3$  (or rewritten as  $u_3 > i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$ ), mainland China's strategy is  $\sigma_3^1 =$  "Attack Taiwan if Taiwan declares independence; Attack Taiwan if Taiwan does not declare independence." Since mainland China will attack Taiwan whatever decision Taiwan

makes, and  $T_{nh,i,a} = pu_2 + (1-p)i_2 - w_2 - c < T_{nh,ni,a} = pu_2 + (1-p)i_2 - w_2$ , Taiwan will not declare independence. Taiwan's strategy is  $\sigma_2^1 = \text{"Do not declare independence."}$  As a result, the outcome is "No Help, No Independence, Attack."

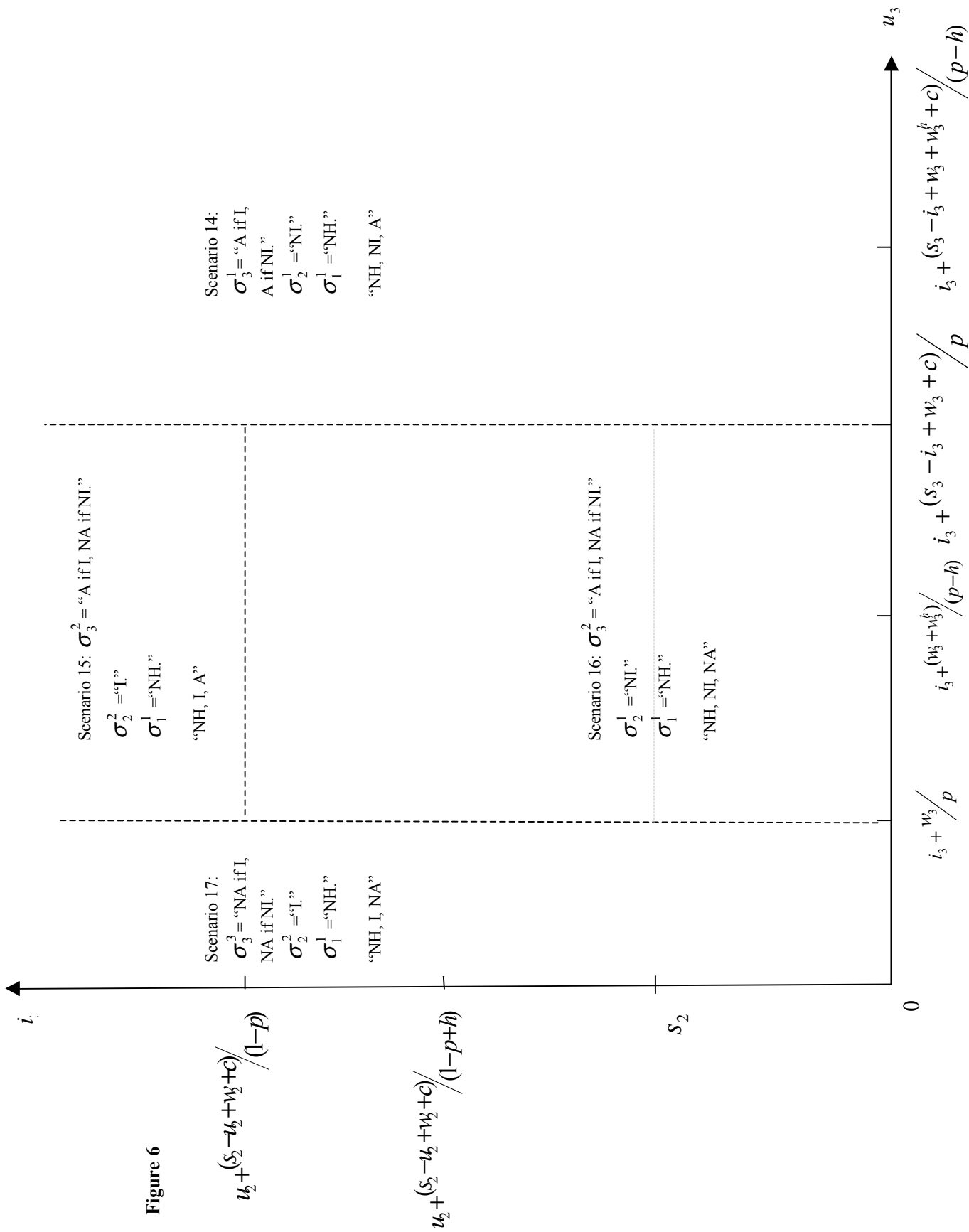
Scenario 15: When  $i_3 < pu_3 + (1-p)i_3 - w_3 - c < s_3$  (or rewritten as  $i_3 + \frac{w_3}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$ ) and  $pu_2 + (1-p)i_2 - w_2 - c > s_2$  (or rewritten as  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ ), mainland China's strategy is  $\sigma_3^2 = \text{"Attack Taiwan if Taiwan declares independence; Do not attack Taiwan if Taiwan does not declare independence."}$  Since  $T_{nh,i,a} > T_{nh,ni,na}$ , Taiwan's strategy is  $\sigma_2^2 = \text{"Declare independence."}$  As a result, the outcome is "No Help, Independence, Attack."

Scenario 16: When  $i_3 < pu_3 + (1-p)i_3 - w_3 - c < s_3$  (or rewritten as  $i_3 + \frac{w_3}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$ ) and  $pu_2 + (1-p)i_2 - w_2 - c < s_2$  (or rewritten as  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ ), mainland China's strategy is  $\sigma_3^2 = \text{"Attack Taiwan if Taiwan declares independence; Do not attack Taiwan if Taiwan does not declare independence."}$  Since  $T_{nh,i,a} < T_{nh,ni,na}$ , Taiwan's strategy is  $\sigma_2^1 = \text{"Do not declare independence."}$  As a result, the outcome is "No Help, No Independence, No Attack."

Scenario 17: When  $u_3 < i_3 + \frac{w_3}{p}$ , mainland China's strategy is  $\sigma_3^3 = \text{"Do not attack Taiwan if Taiwan declares independence; Do not attack Taiwan if Taiwan does not declare independence."}$  Since  $T_{nh,i,na} = i_2 > T_{nh,ni,na} = s_2$ , Taiwan's strategy is  $\sigma_2^2 = \text{"Declare independence."}$  As a result, the outcome is "No Help, Independence, No Attack."

Under the conditions of  $i_2 > s_2 > u_2$  and  $i_1 - u_1 < \frac{w_1}{h}$ , all possible scenarios are summarized in Figure 6. Since  $i_1 - u_1 < \frac{w_1}{h}$  implies  $h$  may be very small, it is reasonable to assume  $\frac{(w_3 + w_3^h)}{(p-h)} < \frac{(s_3 - i_3 + w_3 + c)}{p}$  in this case.

Comparing Figure 6 with Figure 3, we can find that: if the United States' promise to help Taiwan defend itself against mainland China is credible, when  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$  and  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)}$  (Scenario 7 and Scenario 2) or when  $i_3 + \frac{w_3}{p} < u_3 < i_3 + \frac{(w_3 + w_3^h)}{(p-h)}$  and  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$  (Scenario 11), the United States' promise can prevent the outbreak of war and maintain the status quo of peaceful separation. In Scenario 7 and Scenario 2, the United States' promise prevents mainland China from offensively attacking Taiwan. In Scenario 11, the United States' promise prevents mainland China from attacking Taiwan even when Taiwan declares independence. Therefore, we can see, by promising to help Taiwan defend itself against mainland China, the United States does play an important role in maintaining the balance of power and preventing war from breaking out in the Taiwan Strait. Certainly, in Scenario 7 and Scenario 2, even without the U.S. promise to help Taiwan defend itself against mainland China, the Taiwan issue can still result in peace, with Taiwan submitting to mainland China's pressures and accepting the offer of reunification.



#### IV. Mixed Strategy is allowed.

In reality, states sometimes use mixed strategy to achieve better outcome. In this section, we first consider that only the United States can use mixed strategy, then we consider the situation that both the United States and Taiwan can use mixed strategy.

##### A. When only the United States can use mixed strategy

Under the circumstance of Scenario 6 (when  $(w_3 + w_3^h)/(p-h) < (s_3 - i_3 + w_3 + c)/p$ , it has conditions

$$i_3 + (s_3 - i_3 + w_3 + c)/p < u_3 < i_3 + (s_3 - i_3 + w_3 + w_3^h + c)/(p-h) \quad \text{and}$$

$$i_2 > u_2 + (s_2 - u_2 + w_2 + c)/(1-p+h); \text{ and when } (w_3 + w_3^h)/(p-h) > (s_3 - i_3 + w_3 + c)/p,$$

it has conditions  $i_3 + (w_3 + w_3^h)/(p-h) < u_3 < i_3 + (s_3 - i_3 + w_3 + w_3^h + c)/(p-h)$  and

$$i_2 > u_2 + (s_2 - u_2 + w_2 + c)/(1-p+h), \text{ suppose that the United States can use mixed}$$

strategy, and the other two players, Taiwan and mainland China know the probability that the United States assigns to the two choices, but do not know exactly what decision the United States has made at certain point of time. Suppose the United States assigns probability  $x$  to strategy  $\theta_1^1 =$  “Promise to help Taiwan” and probability  $1-x$  to strategy  $\theta_1^2 =$  “Do not promise to help Taiwan.” In order to achieve peace, the United States has to decide the value of  $x$  to guarantee:

$$x[(p-h)u_2 + (1-p+h)i_2 - w_2 - c] + (1-x)[pu_2 + (1-p)i_2 - w_2 - c] < s_2 \quad (1)$$

$$\text{and } x[(p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h - c] + (1-x)[pu_3 + (1-p)i_3 - w_3 - c] < s_3 \quad (2).$$

$$\text{From (1), we have } [pu_2 + (1-p)i_2 - w_2 - c] + h(i_2 - u_2) \cdot x < s_2 \quad (3),$$

$$\text{And from (2), we have } [pu_3 + (1-p)i_3 - w_3 - c] - [h(u_3 - i_3) + w_3^h] \cdot x < s_3 \quad (4)$$

Thus,

$$\frac{\{[pu_3 + (1-p)i_3 - w_3 - c] - s_3\}}{[h(u_3 - i_3) + w_3^h]} < x < \frac{\{s_2 - [pu_2 + (1-p)i_2 - w_2 - c]\}}{h(i_2 - u_2)}$$

As long as the United States can find an  $x$  to satisfy this condition, it can avoid the war and maintain the status quo of peaceful separation by using a mixed strategy.

Actually, (3) can be rewritten as  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+x \cdot h)}$ , and (4) can be rewritten as  $u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h \cdot x + c)}{(p-x \cdot h)}$ . In Figure 3, given a certain  $x$ , the area denominating the situation in which the United States can use a mixed strategy to maintain the status quo of peaceful separation is area M. The area of M is

$$S_M = \left[ \frac{(s_3 - i_3 + w_3 + w_3^h \cdot x + c)}{(p-x \cdot h)} - \frac{(s_3 - i_3 + w_3 + c)}{p} \right] \cdot \left[ \frac{(s_2 - u_2 + w_2 + c)}{(1-p+x \cdot h)} - \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)} \right]$$

Given  $x=0$  which means the United States definitely does not promise to help Taiwan, the conditions will be  $u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$  and  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ , the area of M will become 0. Given  $x=1$  which means the United States definitely promises to help Taiwan, the conditions will be  $u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$  and  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)}$ , the area of M will also become 0.

B. When both the United States and Taiwan can use mixed strategies

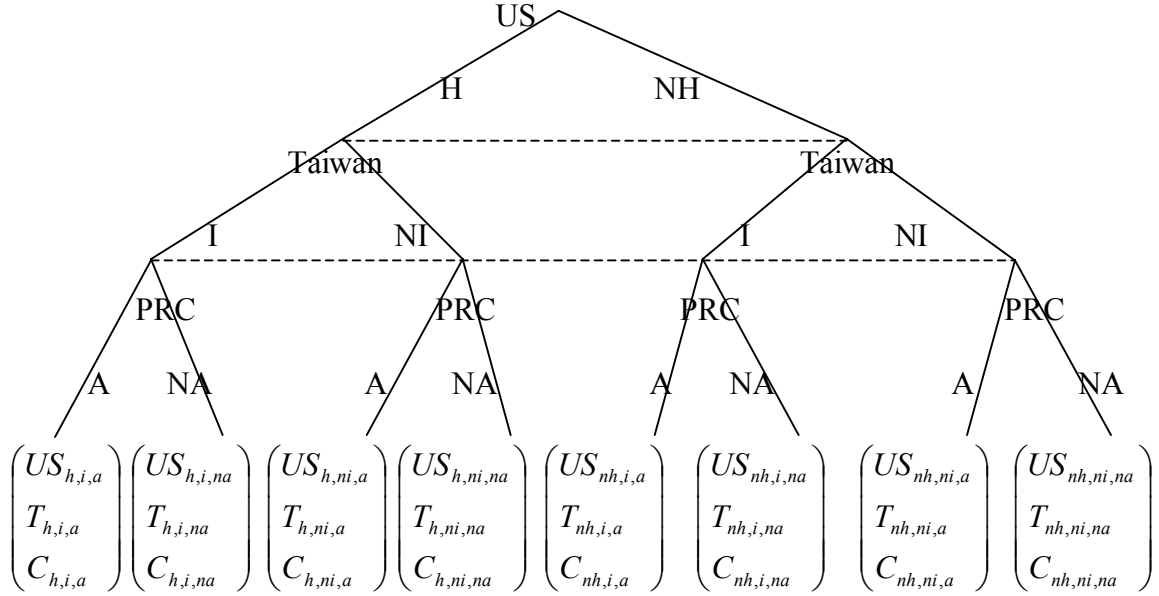
Suppose the United States assigns probability  $x$  to strategy  $\lambda_1^1 =$  “Promise to help Taiwan” and probability  $1 - x$  to strategy  $\lambda_1^2 =$  “Do not promise to help Taiwan.” Taiwan can know the value of  $x$  but does not know which action the United States takes at a particular point of time. As a result, as shown in Figure 7, when Taiwan makes a decision, it has only one information set and does not know which decision node it has come to. Suppose Taiwan assigns probability  $y$  to strategy  $\lambda_2^1 =$  “Declare independence” and probability  $1 - y$  to strategy  $\lambda_2^2 =$  “Do not declare independence.”

Mainland China can only observe the probabilities that the United States and Taiwan assign to their pure strategies. As a result, mainland China also has only one information set and does not know which decision node it has reached. In this game, taking the U.S.’s mixed strategy into consideration, Taiwan sets its mixed strategy based on the United States’ mixed strategy in order to keep mainland China from offensively attacking Taiwan. As a result, the probability that Taiwan assigns to the strategy of “Declare independence” depends on the probability that the United States assigns to “Promise to help Taiwan.”

In this game, in order to prevent mainland China from attacking Taiwan, the United States and Taiwan have the following conditions to be satisfied.

$$\begin{aligned}
 & xy[(p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h] + x(1-y)[(p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h - c] + \\
 & (1-x)y[pu_3 + (1-p)i_3 - w_3] + (1-x)(1-y)[pu_3 + (1-p)i_3 - w_3 - c] < \\
 & xy \cdot i_3 + x(1-y) \cdot s_3 + (1-x)y \cdot i_3 + (1-x)(1-y) \cdot s_3 \quad (5)
 \end{aligned}$$

Figure 7



$$US_{h,i,a} = (p-h)u_1 + (1-p+h)i_1 - w_1, T_{h,i,a} = (p-h)u_2 + (1-p+h)i_2 - w_2 - c,$$

$$C_{h,i,a} = (p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h$$

$$US_{h,i,na} = i_1, T_{h,i,na} = i_2, C_{h,i,na} = i_3,$$

$$US_{h,ni,a} = (p-h)u_1 + (1-p+h)i_1 - w_1, T_{h,ni,a} = (p-h)u_2 + (1-p+h)i_2 - w_2,$$

$$C_{h,ni,a} = (p-h)u_3 + (1-p+h)i_3 - w_3 - w_3^h - c$$

$$US_{h,ni,na} = s_1, T_{h,ni,na} = s_2, C_{h,ni,na} = s_3,$$

$$US_{nh,i,a} = pu_1 + (1-p)i_1, T_{nh,i,a} = pu_2 + (1-p)i_2 - w_2 - c, C_{nh,i,a} = pu_3 + (1-p)i_3 - w_3,$$

$$US_{nh,i,na} = i_1, T_{nh,i,na} = i_2, C_{nh,i,na} = i_3,$$

$$US_{nh,ni,a} = pu_1 + (1-p)i_1, T_{nh,ni,a} = pu_2 + (1-p)i_2 - w_2, C_{nh,ni,a} = pu_3 + (1-p)i_3 - w_3 - c,$$

$$US_{nh,ni,na} = s_1, T_{nh,ni,na} = s_2, C_{nh,ni,na} = s_3.$$

Since Taiwan prefers independence and can derive great utility from taking the action of independence, I assume that Taiwan will try to assign the largest probability to the strategy of “Declare independence” as long as it does not stimulate mainland China’s attack. Thus, we can find the boundary of Taiwan’s mixed strategy, the maximum probability that Taiwan can assign to the pure strategy of “Declare independence” without entailing mainland China’s attack. The boundary can be derived from (5), which yields

$$y < \frac{h(u_3 - i_3) + w_3^h}{s_3 - i_3 + c} \cdot x - \frac{pu_3 + (1 - p)i_3 - w_3 - c - s_3}{s_3 - i_3 + c} \quad (6).$$

So we have the upper boundary of  $y$  as

$$y_{\max} = \frac{h(u_3 - i_3) + w_3^h}{s_3 - i_3 + c} \cdot x - \frac{pu_3 + (1 - p)i_3 - w_3 - c - s_3}{s_3 - i_3 + c} \quad . \quad \text{From (6),}$$

$$\frac{dy_{\max}}{dx} = \frac{h(u_3 - i_3) + w_3^h}{s_3 - i_3 + c} > 0 .$$

So we can see, the higher the probability that the United States assigns to “Promise to help Taiwan,” the higher the probability that Taiwan can assign to “Declare independence.” In order to restrain Taiwan’s tendency to declare independence, the United States should lower its probability to promise to help Taiwan.

## Chapter 4. The History of the Taiwan Issue

Figure 4 describes the situation of  $\frac{(w_3 + w_3^h)}{(p-h)} > \frac{(s_3 - i_3 + w_3 + c)}{p}$  (which implies  $h > \frac{p(s_3 - i_3 - w_3^h + c)}{(s_3 - i_3 + w_3 + c)}$ ). In this situation, the United States relative to mainland China has such an advantage over mainland China in terms of military strength ( $h$  is very large) that under certain conditions, it can even help Taiwan to declare independence and deter mainland China's attack (as shown in Scenario 13). However, this situation does not fit the reality of the balance of power in the Taiwan Strait because in reality the United States' power advantage over mainland China has not been that large ( $h$  is not large enough)<sup>2</sup>. As a result, even if the United States promises to help Taiwan defend itself against mainland China, mainland China's threat to attack Taiwan if it declares independence is not a bluff. Figure 3 describes the situation of  $\frac{(w_3 + w_3^h)}{(p-h)} < \frac{(s_3 - i_3 + w_3 + c)}{p}$  which implies  $h < \frac{p(s_3 - i_3 - w_3^h + c)}{(s_3 - i_3 + w_3 + c)}$ . In this situation, the United States has an advantage over mainland China, but the advantage is not large enough to allow the United States to dictate the situation. I believe this situation fits the Taiwan issue very well.

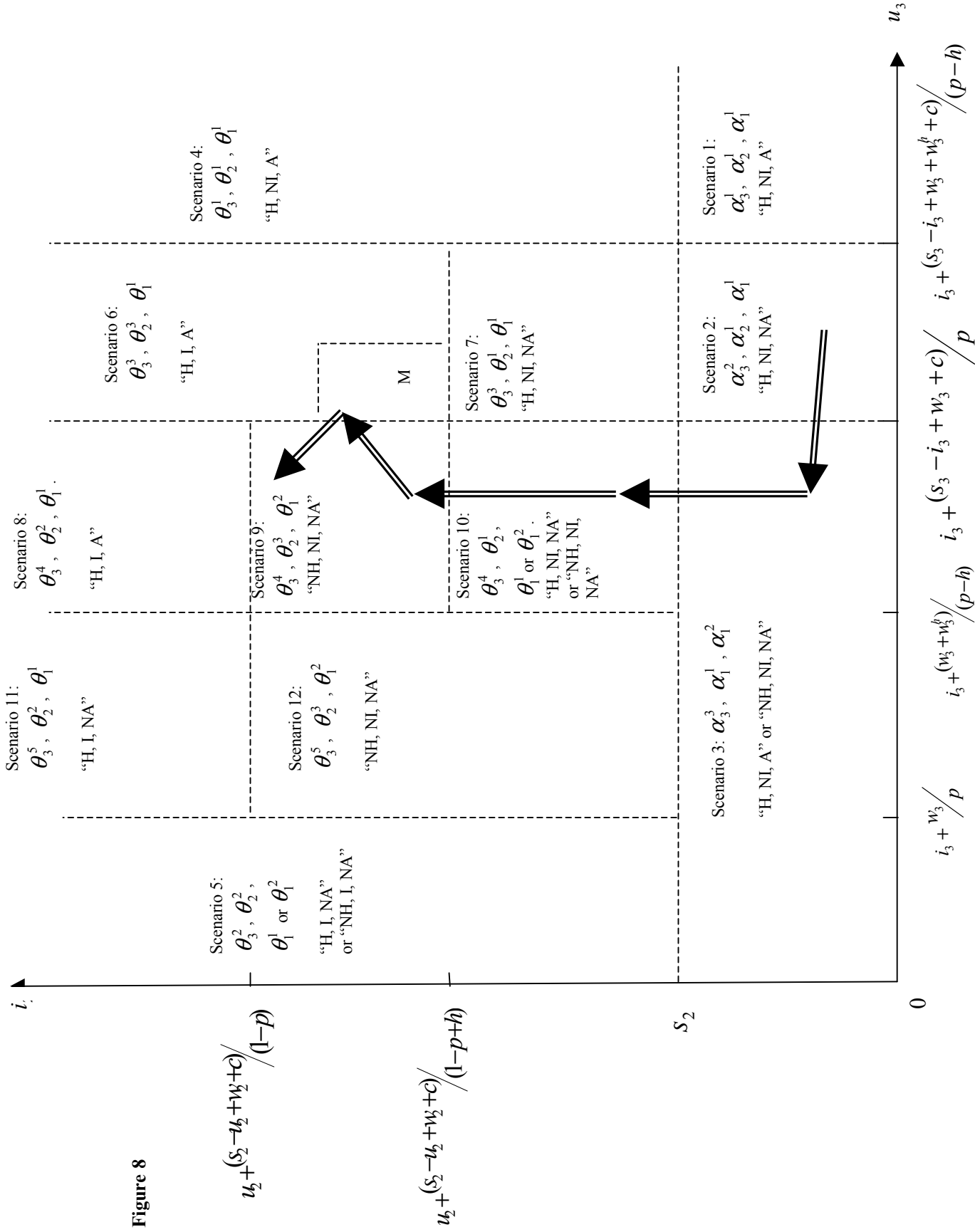
Chapter 3 yields various scenarios concerning the interactions among the United States, Taiwan, and mainland China. Which scenario the situation of the Taiwan issue falls into at a certain point of time depends on the values of the variables in the players' payoff functions. These variables include utility of unification between mainland China

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<sup>2</sup> It seems that the situation of  $\frac{(w_3 + w_3^h)}{(p-h)} > \frac{(s_3 - i_3 + w_3 + c)}{p}$  can capture the relationship among the United States, South Korea and North Korean. In this case, the United States' military advantage over North Korea is very large ( $h$  is very large), and South Korea's military advantage over North Korea is quite large ( $p$  is small). As a result, North Korea cannot attack South Korea even if South Korea has declared itself as an independent country and joined the United Nations as a member state.

and Taiwan ( $u_i, i = 1, 2, 3$ ), utility of Taiwan independence ( $i_i, i = 1, 2, 3$ ), utility of the status quo of peaceful separation ( $s_i, i = 1, 2, 3$ ), the cost of war ( $w_3^h$  and  $w_i, i = 1, 2, 3$ ), the probability that mainland China will win a war against Taiwan without other countries' intervention ( $p$ ), the increased probability that Taiwan will win a war against mainland China because of the United States' joining the war to help ( $h$ ), and the cost that mainland China or Taiwan incurs when either of them challenges the status quo and leads to the outbreak of a war ( $c$ ). These variables measures certain major factors that affect the Taiwan issue such as divergence of political system, cross-strait economic integration, assertion of nationalism, domestic cleavage concerning national identities, domestic and international anti-war pressures, the U.S. interest, etc. The variations of these factors lead to the evolution of relations among the United States, Taiwan, and mainland China, which results in various outcomes concerning the security in the Taiwan Strait. The scenarios yielded in Chapter 3 capture the various outcomes of interactions among the United States, Taiwan, and mainland China and relate the values of these major factors to the strategies of the players, and the strategies of the players to the outcomes of interactions. Moreover, the evolution of the security in the Taiwan Strait can be captured by the trajectory in the model in terms of transitions from one scenario to another. Figure 8 demonstrates the general trajectory of the Taiwan issue over the past five decades. The transitions from one scenario to another can be caused not only by changes in Taiwan's utility of independence ( $i_2$ ) and mainland China's utility of unification ( $u_3$ ), but also by changes in the probability that mainland China can win a war against Taiwan without the United States' intervention ( $p$ ) and the increased probability that Taiwan will win a war against mainland China because of the United States' joining the war to help ( $h$ ), the costs of war for all the three players ( $w_1, w_2, w_3$ ), and the cost that mainland China or Taiwan incurs when either of them challenges the status quo and leads to the outbreak of a war ( $c$ ). In Figure 8, changes in  $i_2$  and  $u_3$  form the trajectory, and changes in  $p, h, w_1, w_2, w_3$  and  $c$  lead to the moving of the dotted lines. The changes in all these variables lead to the transitions from one scenario to another.

Based on Figure 8, we can divide the history of the Taiwan issue into 5 periods, with each period corresponding to a certain mode of interactions among the United States, Taiwan, and mainland China.



## ***I. Period 1. 1949-1950***

After the KMT was defeated by the CCP on the mainland in 1949, it retreated to the islands of Taiwan and Penghu, and controlled some islands off the mainland's coast such as Kinmen and Matsu. Even though the United States had such an overwhelming advantage over mainland China in terms of military strength that it could help to greatly increase the probability that Taiwan would win a war against mainland China ( $h$  was very large), the Truman administration was frustrated by the KMT's failure on the mainland and meant to withdraw support for the corrupt KMT regime. The civil war had revealed how corrupt and incompetent the KMT regime was, and the KMT was seen as "untrustworthy." Moreover, the KMT regime at that time was eager to fight with the CCP to recover the mainland, and the United States' continued support for the KMT would mean persistent war. What was at stake was a war to recover the mainland rather than to defend the island of Taiwan. On the other hand, the United States did not want to eliminate all possibility of having a constructive relationship with the newly founded PRC government. In this period, the CCP had controlled nearly all of the mainland and most of the Chinese population, and it was consolidating its power. It was not clear what path the new China would choose for itself. Because of the uncertainty about the PRC and the possibility of having a constructive relationship with it, the cost of helping Taiwan to fight against mainland China was very high ( $w_1$  is large). What is more, in this period, the geopolitical importance of Taiwan had not been clear or fully realized, and the United States had not found a strategic interest in preventing Taiwan from unifying with mainland China. Though the United States derived a negative utility from mainland China's unification with Taiwan ( $u_1 < 0$ ), the absolute value of  $u_1$  was not large. As a result of all these facts, though the United States had enormous military advantage over mainland China in this period, it did not have enough incentive to help the KMT to defend itself against mainland China. This situation was characterized by  $i_1 - u_1 < \frac{w_1}{h}$ .

Actually, even back in the Chinese civil war, by 1948, it was assumed by most foreign governments, including the Truman administration, that the fall of Taiwan was imminent (Chang 1990: 13; Laster 1989: 12; MacFarquhar 1972: 70-71; Hughes 1997:

16). Most foreign governments hoped to develop relations with the new government. In April 1949, Mao had rejected overtures from both the USA and Britain to develop relations with the new government, unless they first of all cut relations with the KMT regime (Hughes 1997: 16). On January 5, 1950, President Harry Truman announced that "the United States will not involve in the dispute of Taiwan Strait," which meant America would not intervene if the Chinese communists were to attack Taiwan (Federation of American Scientists Military Analysis Network, 1999).

In this period, though the CCP was eager to attack the islands held by the KMT in order to "liberate" people living under the KMT regime, it was not strong enough to do so. However, taking the fact that the CCP was very nationalistic and seldom afraid of its disadvantage in terms of military power, it was reasonable to believe that if Taiwan declared independence at that time, the People's Liberation Army (PLA) would attack Taiwan regardless of any loss. Therefore, in this period, mainland China had  $i_3 < pu_3 + (1-p)i_3 - w_3 - c < s_3$  (or rewritten as  $i_3 + \frac{w_3}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$ ). Mainland China's strategy was "Attack Taiwan if Taiwan declares independence; Do not attack Taiwan if Taiwan does not declare independence."

Since the KMT also embraced Chinese nationalism and preferred unification and the status quo of separation to independence, there was little possibility that Taiwan would declare independence. At that time, most of the positions in the ROC government were held by mainlanders dominated by the goal of reclaiming the mainland. Therefore, the ROC government in the period had  $pu_2 + (1-p)i_2 - w_2 - c < s_2$  (or rewritten as  $i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ ), which implied that Taiwan would not declare independence whatever decisions the United States made. As a result, the mainland China-Taiwan relations in this period were characterized by the lower part ( $i_2 < s_2$ ) of Scenario 16. The outcome was "No Help, No Independence, and No Attack."

## **II. Period 2. 1950- 1970s**

It was the outbreak of the Korean War on June 25, 1950 that pushed the Truman administration into taking military action to defend the KMT regime (Hughes 1997: 16). On June 27, Harry Truman, who had already been criticized for having “lost China,” changed his previous position on Taiwan’s status and believed that the island was essential to the security of the Asia-Pacific region and the U.S. forces in that area (Truman 1950: 83). He declared the “neutralization of the Straits of Formosa” and sent the Seventh Fleet into the Taiwan Strait to prevent any attack on the island of Taiwan and the KMT forces’ attack on China (Federation of American Scientists Military Analysis Network 1999). From Truman’s point of view, in the U.S. confrontation with the Soviet Union, supporting the KMT regime could maintain pressure on the PRC and forced Beijing to make increasingly high demands on its Soviet ally, thereby straining the Sino-Soviet alliance (Chang 1990). In the Cold War between the communist and capitalist blocs, the U.S. incorporated Taiwan and its offshore islands into a defensive string stretching from Japan south to the Philippines. As a result of the U.S. confrontation in Asia-Pacific region with the communist bloc, which was reinforced by the Korean War, the utility that the United States derived from Taiwan’s unification with the mainland decreased dramatically. In this period,  $u_1$  not only was negative, but also had a very large absolute value. Because of the change in the United States’ utility for unification between the two sides of the Taiwan Strait ( $u_1$ ), even though the value of  $w_1/h$  did not change much, the situation in the Taiwan Strait changed from  $i_1 - u_1 < w_1/h$  in Period 1 to  $i_1 - u_1 > w_1/h$  in Period 2 and persisted afterwards for over two decades.

In this period, the KMT regime continued to rely on the ideologies of Chinese nationalism and anti-communism for legitimacy, claiming to be the sole legal government for all of China and to recover the mainland. Actually, the legitimacy of the KMT regime derived from the ROC constitution promulgated on January 1, 1947 and devised for all of China, with the addition of a number of emergency measures justified by the Chinese nationalist revolution (Hughes 1997: 26). In April 1948, the first meeting of the ROC National Assembly passed the “Temporary Provisions Effective during the

Period of Communist Rebellion,” which suspended most of the constitutional constraints on the president and maintained the KMT party dictatorship. It was claimed that because the civil war had not ended and the nationalist revolution had not been completed, maintaining the party dictatorship was necessary. In December 1949, the Legislative Yuan issued an administrative order declaring Taiwan as a combat zone, which further enhanced the ROC president’s power. It allowed Chiang Kai-shek to activate martial law on the island by emergency decree (Tien 1989: 110). Over the following decades, Chiang Kai-shek continued its dictatorial ruling and legitimized its dictatorship in terms of constitutional measures justified by the Chinese nationalist project.

Hughes (1997: 26-27) explains the reasons why the KMT dictatorship could be legitimized by the Chinese nationalist project. First, the elections of 1947 and 1948 enabled the KMT to claim that the source of its legitimacy to rule lay in the sovereign will of the Chinese nation. As only elections in mainland constituencies could express the will of the Chinese nation, the representatives elected on Taiwan in 1947 and 1948 could be frozen in office until unification could occur. Second, when retreating to Taiwan, the KMT had brought with it 2.5 million people, who were called “mainlanders” distinct from native Taiwanese. Adherence to Chinese nationalism and a narrative of return would provide the mainlanders with encouragement and hope in the present predicament. In short, Chinese nationalism became the soul of the KMT party-state, and a myth that common mainlanders embraced to endure decades of separation from their homes. Therefore, in this period, Taiwan always preferred the status quo of peaceful separation to Taiwan independence and harshly suppressed the Taiwan independence movement advocated by some native Taiwanese. For example, Peng Mingmin, a spiritual leader for Taiwan independence movement, was arrested in 1964, while preparing his manifesto, “Declaration of Formosans,” calling for a new democratic constitution and Taiwanese independence. He escaped out of Taiwan in 1970 and was not allowed to return until 1992.

In this period, both mainland China and Taiwan preferred unification to Taiwanese independence. Neither Beijing nor Taipei accepted recognition by any state that also recognized the other side of the Taiwan Strait. However, in the background of

the Cold War, historical hostilities and ideological differences made it extremely difficult for Beijing and Taipei to reach a win-win agreement of peaceful unification. In this period, unification was a zero-sum game. The KMT regime hoped to unify with mainland China with the ideology of “Three Principles of the People” (*san min zhu yi*, referred to nationalism, democracy, livelihood) advocated by Dr. Sun Yat-sen, while Beijing hoped to unify with Taiwan under its communist program. Actually, since both sides of the Taiwan Strait were modeled along the lines of a Leninist party-state, which ideology would prevail could determine what party would rule all of China. Because mainland China had a dictatorial government led by Mao Zedong and Taiwan a dictatorial government led by Chiang Kai-shek, unification would have required a vast change in political power and a reshuffling of governmental positions among enemies of decades of hostility. As the CCP consolidated its power on the mainland, it was increasingly impossible for the KMT to recover the mainland by military means. Based on the above observation, since unification in this thesis denotes unification to mainland China’s advantage, it was reasonable to conclude that for Taiwan in this period,  $s_2 > u_2$  and  $s_2 > i_2$ .

In this period, the CCP ruling mainland China embraced radical Maoism and often called for liberating Taiwan by force. As in many other communist countries, the Communist ideology was often a cover for nationalism. In this period, people in mainland China were eager to attack Taiwan to liberate their compatriots. Meanwhile, as the CCP consolidated its power on the mainland and invested a large amount of resource in military, its military strength has also enhanced. As a result, in this period  $p$  increases. Had not been for the U.S. military blockade in the Taiwan Strait, mainland China would have launched military attack on the island of Taiwan. However, because of the U.S.’s action to protect Taiwan, mainland China had never attacked the island of Taiwan, even though the PLA had bombarded the offshore islands of Kinmen and Matsu. It was reasonable to believe that in this period, mainland China preferred unification so much that it would have attacked Taiwan if the United States did not protect it. Taking account of the United States’ promise and action to protect Taiwan and the advantage that the United States enjoyed over mainland China in terms of military strength ( $h$  was very

large, so  $p - h$  was very small), mainland China's preference for unification had not been large enough to motivate it to attack Taiwan. Generally speaking, mainland China had  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p - h)}$  in Period 2, and its strategy became "Do not attack Taiwan if the United States promises to help Taiwan; Attack Taiwan if the United States does not promise to help Taiwan."

Generally speaking, Scenario 2 captured the situation in the Taiwan Strait in this period. The United States changed from  $i_1 - u_1 < \frac{w_1}{h}$  in Period 1 to  $i_1 - u_1 > \frac{w_1}{h}$  in Period 2, and mainland China changed from  $i_3 + \frac{w_3}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$  in Period 1 to  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p - h)}$  in Period 2. For the United States,  $u_1$  was negative and had a very large absolute value, which meant unification between mainland China and Taiwan would greatly undermine the U.S. strategic interest. In this period, preventing mainland China from conquering Taiwan by force was one of the most important strategic goals for the United States. Therefore, the United States made it clear that it was determined to protect Taiwan against mainland China's invasion, which was captured by  $i_1 - u_1 > \frac{w_1}{h}$ . However, despite the U.S.'s strong commitment to protect Taiwan, Taiwan itself did not want to declare independence but rather preferred to maintain the status quo of peaceful separation. Taiwan's preference order remained  $s_2 > u_2$  and  $s_2 > i_2$ . In this period, Mao Zedong and the radical communist ideology ruled mainland China. Relying on its so-called revolutionary spirit and its enhanced military strength, the People's Liberation Army would have attacked Taiwan if the United States did not protect Taiwan. However, because of the invincible gap between the United States and mainland China in terms of military strength, mainland China had  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p - h)}$  and refrained from attacking Taiwan by force. As a result, in this period, the general situation in the Taiwan Strait was that Taiwan would not declare independence, but mainland China would not

attack Taiwan because of the United States' protection of it. Nevertheless, the U.S.'s "neutralization" of the Taiwan Strait was sometimes challenged either by mainland China and or by Taiwan, which resulted in one crisis after another. The two military crises in the Taiwan Strait in 1950s were two cases that demonstrate the strategies that the three players employed and the balance of power in the Taiwan Strait. Federation of American Scientists Military Analysis Network (1999; 2000a) provides a detailed description of the First Taiwan Strait Crisis and the Second Taiwan Strait Crisis. The following description of the two military crises is based on Federation of American Scientists Military Analysis Network's description.

### **The First Taiwan Strait Crisis (August 11, 1954 – May 1, 1955)**

In the Korean War, the United States blockaded the Taiwan Strait preventing mainland China from attacking Taiwan and preventing Taiwan from attacking the mainland. On February 1953, President Eisenhower lifted the U.S. Navy blockade of Taiwan and made possible KMT army's attack on mainland China. In August 1954, Chiang Kai-shek provoked mainland China by moving 58,000 troops to Kinmen and 15,000 to Matsu. Zhou Enlai declared on August 11, 1954 that Taiwan must be liberated, and on September 3, 1954 the PLA began an artillery bombardment of Kinmen. On September 12, 1954, the U.S. Joint Chiefs of Staff (JCS) recommended the possibility of using nuclear weapons. On November 23, 1954, Beijing sentenced 13 U.S. airmen shot down over mainland China in the Korean War to long jail terms, prompting the U.S.'s further consideration of using nuclear weapons. On December 2, 1954, the United States signed the Mutual Defense Treaty with the KMT government.

On January 18, 1955, the PLA seized Yijiangshan Island, 210 miles north of Taiwan Island. The two sides continued fighting on Kinmen and Matsu, and along the mainland Chinese coast. The United States Senate ratified the U.S.-Nationalist Chinese Mutual Security Pact on February 9, 1955. The Taiwan Resolution passed both houses of Congress on January 29, 1955. The Resolution pledged the U.S. should defend Taiwan, authorizing the president to employ American forces to defend Taiwan and the Penghu Island against armed attack, including such other territories as appropriate to defend them.

On March 10, 1955 U.S. Secretary of State stated at a National Security Council (NSC) meeting that the American people had to be prepared for possible nuclear strikes against mainland China. Five days later and afterwards, both Secretary of State Dulles and President Eisenhower publicly stated that the U.S. was seriously considering using atomic weapons in the Kinmen-Matsu area. On March 25, 1955, U.S. Chief of Naval Operations Admiral Robert B. Carney predicted that war would break out by mid-April.

On May 1, 1955, mainland China ceased shelling Kinmen and Matsu, and the crisis ended. On August 1, 1955, China released the 11 captured U.S. airmen previously sentenced to jail terms.

### **The Second Taiwan Strait Crisis (August 23, 1958 – January 1, 1959)**

The military situation in the strait began to be more favorable to Taiwan in 1956 and 1957, as the U.S. military assistance improved the KMT forces. Moreover, in early 1958, the United States reduced its representation to the US-PRC Geneva talks from ambassador to charge d'affaires. Meanwhile, Beijing was not sure about the reliability of the Soviet deterrent. Along with the Great Leap Forward, the "soft" foreign policy based on the Five Principles of Peaceful Coexistence<sup>3</sup> gave way to a "hard" line in 1958. Between 31 July and 3 August, 1958, Khrushchev visited Beijing. Shortly after he left, from August 23 through October 1958, the PLA started a massive artillery bombardment of Kinmen and Matsu and threatened an invasion. Chinese patrol boats blockaded Kinmen and Matsu against the KMT army's resupply efforts. After the shelling began, the United States clearly stated its support for the ROC and deployed forces including a large naval contingent to the region. Ships escorted by U.S. naval vessels supplied the defenders of Kinmen and Matsu. As tension mounted between the United States and China, the U.S. Joint Chiefs of Staff developed plans for nuclear strikes at the Chinese cities of Shanghai, Guangzhou and Nanjing. Not until Beijing indicated that it intended to limit the level of military actions to the strait did the Soviet Union make an unambiguous statement in support of China. In a letter to President Eisenhower, Khrushchev wrote that

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<sup>3</sup> The Five Principles are: mutual respect for sovereignty and territorial integrity, mutual non-aggression, non-interference in each other's internal affairs, equality and mutual benefit, and peaceful coexistence. They are still the foundation of the PRC's foreign policy.

an American attack on China would be viewed as an attack on the USSR. On October 5, 1958, Khrushchev reiterated this position. However, it was evident that Khrushchev was not ready to fight the United States. Despite the Soviet support, the PRC's bombardment abated, then virtually ceased after President Eisenhower warned that the United States would not retreat "in the face of an armed aggression." On September 6, 1958, Zhou Enlai proposed a resumption of ambassadorial-level talks with the United States to end the crisis. The crisis ended on October 6, 1958, when the PLA ended the bombardment.

We can see in both crises mainland China was very aggressive. It declared its intention to "liberate" Taiwan and bombarded the KMT-held offshore islands. However, as long as the United States stated that it would protect Taiwan, mainland China did not attack Taiwan. Shelling the offshore islands was only a show of determination. There were no indications that either of the military actions at the offshore islands would escalate into an attack on the island of Taiwan. In both crises, Chiang Kai-shek provoked mainland China by moving large numbers of troops to the islands of Kinmen and Matsu, and both times, the United States responded with military actions including nuclear threats to support Chiang. Both crises showed that mainland China could not rely on the Soviet Union's deterrents. In the first Taiwan Strait crisis of 1954-55, the Soviet Union's attitude was ambiguous; in the second crisis, the Soviet Union was not ready to be involved in the crisis. This justifies excluding the Soviet Union as one of the players in my model. Both crises demonstrated that, in the period, mainland China's strategy was "Do not attack Taiwan if the United States promises to help Taiwan; Attack Taiwan if the United States does not promise to help Taiwan." Taiwan's strategy was always "Do not declare independence" because of its preference order. The United States in this period always clearly employed the strategy of "Promise to help Taiwan."

### ***III. Period 3: early 1970s-late 1980s***

From February 21 to February 28, 1972, U.S. President Richard Nixon visited the PRC, marking the beginning of the normalization process for relations between the two countries. The Sino-U.S. Shanghai Communiqué signed at the end of the visit stated, "The United States acknowledges that all Chinese on either side of the Taiwan Strait

maintain there is but one China and that Taiwan is a part of China. The United States Government does not challenge that position” (China Internet Information Center, N.D.a). Following President Nixon’s visit, the relations between the United States and mainland China were greatly enhanced, and the two countries became strategic partners to counter the Soviet threat. As a result of the absolution of hostilities, the United States gradually reduced its military confrontation with mainland China in the Taiwan Strait. In 1974, the United States removed from Taiwan the two squadrons of F-4 Phantoms as well as the U-2 planes and all nuclear weapons that were deployed there (Federation of American Scientists Military Analysis Network 2000a). On December 16, 1978, the PRC and the U.S. governments signed the joint communiqué to officially recognize each other beginning January 1, 1979. The Joint Communiqué on the Establishment of Diplomatic Relations between the PRC and the USA stated, “The United States of America recognizes the Government of the People’s Republic of China as the sole legal Government of China. Within this context, the people of the United States will maintain cultural, commercial, and other unofficial relations with the people of Taiwan...The Government of the United States of America acknowledges the Chinese position that there is but one China and Taiwan is part of China”(China Internet Information Center, N.D.b). In this period, the probability of peace and security in the Taiwan Strait had been greatly increased.

Though the United States had enhanced its relations with mainland China, it could not accept mainland China’s unification with Taiwan. The strategic partnership relations between mainland China and the United States were mainly because of the threat from the Soviet Union. The ideological and interest conflicts between the two countries still existed. Compared to the preceding periods, the relative strengths between the United States and mainland China captured by  $h$  had not changed much. Because of the partnership between the two countries to counter the Soviet threat, if a war broke out between mainland China and Taiwan and the United States joined the war to help to defend Taiwan, the war would be very costly to the United States, probably leading to changes in the balance of power between the United States, the Soviet Union, and mainland China. As a result, compared to previous periods,  $w_1$  had increased. However,

the value of  $u_1$  had not changed much. It still had a negative sign and a large absolute value. As the result, the United States still had  $i_1 - u_1 > \frac{w_1}{h}$ . The United States still stood firmly to protect Taiwan and promised to defend Taiwan against mainland China if a war broke out.

In 1970s, as relations between mainland China and the United States improved, mainland China gradually changed its Taiwan policy from “reunifying by force” to a more moderate one. In January, 1979, Deng Xiaoping proposed the concept of “one country, two systems”( *yi guo liang zhi*) and stated that “so long as Taiwan returns to the embrace of the motherland, we will respect the realities and the existing system there” (Ministry of Foreign Affairs of the PRC 2000). On September 30, 1981, Ye Jianying, Chairman of the Standing Committee of China’s National People’s Congress, officially put forward a nine-point proposal for bringing about the peaceful reunification of the mainland and Taiwan. He said, “After China is reunified, Taiwan may become a special administrative region. It may enjoy a high degree of autonomy and may keep its military forces. The national government will not intervene in the local affairs of Taiwan...Taiwan’s current social and economic systems will remain unchanged, its way of life will not change, and its economic and cultural ties with foreign countries will not change” (Ministry of Foreign Affairs of the PRC 2000). A provision on setting up special administrative region was introduced to the Constitution of the People’s Republic of China in 1982, providing legal basis for accomplishing “one country, two systems.” Meanwhile, Deng Xiaoping and Ye Jianying also proposed party-to-party talks “between the Communist Party of China [CCP] and the KMT of China [KMT] on a reciprocal basis so that the two parties will cooperate for the third time to accomplish the great task of national reunification” (Ministry of Foreign Affairs of the PRC 2000). Generally speaking, in this period, mainland China employed the policy of peaceful unification and would not attack Taiwan as long as Taiwan did not declare independence.

Several reasons led to mainland China’s change in its policy toward Taiwan. First, by the 1980s, Taiwan had achieved remarkable economic success and become one of the “Asian Tigers.” Unification with Taiwan by force would result in an economic tragedy

with capital and human resources escaping the island, which would greatly undermine the value of unification. Second, with the radical Maoist ideology being phased away, while unification was still one of the most important tasks for the government, it was not the foremost priority. Since Deng Xiaoping gained power in the CCP in the late 1970s, the party has been gradually transformed from a proletarian revolutionary party to an authoritarian party. The CCP has set economic construction as the central task and launched the long-term project of economic development and opening China to the West. Since mainland China had lagged behind in terms of economy and military, it had to set aside the agenda of unifying Taiwan by force and employ the policy of peaceful unification. Third, after mainland China supplanted Taiwan as the representative of China, especially after the normalization of Sino-U.S. relationship in 1979, mainland China was in a much better position in diplomacy compared to in 1950s and 1960s. It became more confident about solving the Taiwan issue by peaceful diplomatic means.

Generally speaking, because of the changes in domestic politics in the PRC, the utility of unification  $u_3$  decreased in this period. As economic development became the priority, the PRC was more ready to postpone the unification. Meanwhile, after mainland China launched the “economic reform and opening” (*gaige kaifang*) program, which needed a peaceful international environment, mainland China’s utility of the status quo of peaceful separation  $s_3$  increased. A war in the Taiwan Strait would make the modernization program abortive, which implied an increase in the cost of war  $w_3$ . All these changes led to a decrease in  $u_3$  and an increase in  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$ . As a result, mainland China’s situation changed from  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p} < u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$  in Period 2 to  $u_3 < i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$  in Period 3, which led to its strategy change from “Do not attack Taiwan if the United States promises to help Taiwan; Attack Taiwan if the United States does not promise to help Taiwan” to “Do not attack Taiwan if the United States promises to help Taiwan; Do not attack Taiwan if the United States does not promise to

help Taiwan.” Regardless of whether the United States promises to help Taiwan defend itself against mainland China or not, as long as Taiwan does not declare independence, mainland China will not attack Taiwan.

In this period, Taiwan experienced a serious decline in terms of international status. Many countries that once had recognized Taipei as the sole legitimate government of all China switched. By recognizing Beijing, they meant to de-recognize the ROC. As a precondition to normalize relations with the PRC, these countries had to accept or at least acknowledge the Chinese position that “there is but one China, Taiwan is part of China, and the Government of the People’s Republic of China is the sole legal Government of China.” Their relationships with Taiwan had to be kept on commercial and cultural levels. Despite the diplomatic setback, Taiwan continued its economic growth and greatly enhanced its people’s standard of living.

In this period, Taiwan was still under the authoritarian ruling of the KMT. Chiang Ching-kuo, Chiang Kai-shek’s son, led Taiwan to accomplish remarkable industrialization and economic growth. Politically, the KMT regime still stuck to its ideology of Chinese nationalism and claimed sovereignty over all of China. While Chiang Ching-kuo still repressed the Taiwan independence movement harshly, he pushed the “Taiwanization” of the KMT regime in order to repackage its legitimacy. Many native Taiwanese were appointed as high-level officials in the KMT and the government. In response to mainland China’s proposal to negotiate and reunify under the arrangement of “One Country, Two Systems,” Chiang Ching-kuo employed the policy of “Three No’s”--- no contact, no compromise, and no negotiation. Actually in early 1980s, considering the gap between the two sides in terms of economic development, we would find that peaceful unification between mainland China and Taiwan was very difficult, if not impossible. At that time, Taiwan enjoyed an economic advantage over mainland China and had little need to unify with mainland China. Taiwan’s utility of unification  $u_2$  was smaller than its utility of the status quo of peaceful separation  $s_2$ . Nevertheless, though Taiwan would not accept unification to the PRC’s advantage, it did not intend to declare independence in this period. Instead, the Chiang Ching-kuo government

continued to repress the Taiwan independence movement. Generally speaking, in this period, Taiwan still had the preference order  $s_2 > u_2$  and  $s_2 > i_2$ , and Taiwan's strategy was still "Do not declare independence." The "Three No's" policy was the embodiment of the strategy.

In short, in this period, since the United States was still committed to protecting Taiwan, Taiwan preferred to maintain the status quo of peaceful separation, and mainland China had no incentive to launch any attack on Taiwan, peace prevailed in the Taiwan Strait in this period. Scenario 3 could capture the whole situation in the Taiwan Strait. In this period, the major source of change regarding the Taiwan issue was from mainland China, which changed its priority from class struggle to economic construction and became less aggressive. As a result of the domestic political change in the mainland and the enhancement of the Sino-U.S. relationship, the situation in the Taiwan Strait moved from Scenario 2 to Scenario 3.

Actually, in this period, the United States' promise to help Taiwan defend itself against mainland China was to some extent unnecessary. Given mainland China's policy of peaceful unification, Taiwan employed the strategy of "Do not declare independence" and the policy of "Three No's," to maintain the status quo of peaceful separation in the Taiwan Strait, the United States could have employed either of the strategies "Promise to help Taiwan defend itself against mainland China" and "Do not promise to help Taiwan defend itself against mainland China." It is often said that the United States used an "ambiguous strategy" since its normalization of relationship with the PRC in 1979. In my view, the U.S. policy regarding the Taiwan issue consists of two parts, security policy and diplomatic policy. The U.S. security policy concerning the Taiwan issue hinges on its answer to the question of whether the U.S. will help Taiwan defend itself against mainland China if a war breaks out between mainland China and Taiwan. The U.S. diplomatic policy concerning the Taiwan issue rests on the U.S.'s expressions of its views on the definition of China, China's sovereignty and territory, which government is legal, etc. I understand the "ambiguous policy" as: the United States does not make clear whether or not it will help Taiwan defend itself against mainland China if mainland China attacks Taiwan. The security policy was masked by the diplomatic policy, and

these two policies work together in accordance with the U.S. strategic interest. As a result, we can only infer the U.S. security policy concerning the Taiwan issue by generally assessing the balance of power in the Taiwan Strait and examining the U.S.'s reactions towards tension in the Taiwan Strait.

When the United States normalized its relationship with the PRC, it adopted the one-China policy, acknowledged "Taiwan is part of China", and respected the PRC's sovereignty and territorial integrity. But, after Washington severed its diplomatic relations with the ROC, the Taiwan Relations Act was enacted in 1979. Section 2(b) (6) of the act asserts that it is the U.S. policy to maintain Taiwan's capability "to resist any resort to force or other forms of coercion that would jeopardize the security, or the social or economic system, of the people on Taiwan." (Taiwan Relations Act 1979). It seemed to be contradictory with the one-China policy, and the United States has refrained from clarify whether it would help Taiwan defend itself against mainland China if a war broke out. This ambiguous policy has been a contrast to the U.S. postwar security policy in Europe, which was clearly expressed and credibly maintained. During the Cold War, the United States made it clear to the Soviet Union that "any assault on Western Europe would lead to war with the United States"<sup>4</sup> (Cox 1996). Usually, a country's security policy should be clearly stated in order to prevent any misconception that might lead to serious result. Both the outbreaks of the Korean War in 1950 and the Gulf War in 1990 were partly attributed to ambiguities in the pre-war commitments (Federation of American Scientists Military Analysis Network, N.D.). However, the U.S.'s ambiguous policy regarding the Taiwan issue did work very well in the 1980s. In my view, it was because neither mainland China nor Taiwan intended to provoke tension in this period: mainland China proposed for peaceful unification; and Taiwan, on the one hand, continued to suppress the Taiwan independence movement, and, on the other hand, employed the policy of "Three No's." The U.S. could use either the strategy of "Promise to help Taiwan defend itself against mainland China" or "Do not promise to help Taiwan defend itself against mainland China," because neither policy would have a direct effect

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<sup>4</sup> The North Atlantic Treaty Organization (NATO) was established by treaty signed in April 1949. The key principle of the treaty was that an attack on one member would be treated as an attack on all. This treaty enshrined the American commitment to defending Western Europe against the Soviet Union.

on the ultimate situation in the Taiwan Strait. Actually, it was not the U.S.'s ambiguous policy that had maintained peace between the two sides of the Taiwan Strait in this period. In contrast, it was the peace between the two sides of the Taiwan Strait that allowed the U.S. to employ an ambiguous policy.

However, why did the United States employ the ambiguous policy? The main reason for the ambiguous policy in this period was the complicated diplomatic situation among the United States, Taiwan and mainland China. Because the United States could officially recognize only one side of the Taiwan Strait, either Beijing or Taipei, stating clearly the strategy of protecting Taiwan against mainland China would have generated some awkward diplomatic disputes between the United States and mainland China. As the situation in the Taiwan Strait changed over the last decade, the "ambiguous policy" has faced more and more challenges.

#### ***IV. Period 4: late 1980s-1999***

While the most significant change regarding the Taiwan issue came from mainland China in Period 3, it was mainly from Taiwan in Period 4. Nativization and democratization in Taiwan dramatically changed the situation of the Taiwan issue. In addition, the end of the Cold War also had an important impact on the Sino-U.S. relationship and the Taiwan issue. Because of the nativization and democratization in Taiwan, Taiwan's preference order changed from  $s_2 > u_2$  and  $s_2 > i_2$  to  $i_2 > s_2 > u_2$ . Because of the end of the Cold War, the relations between mainland China and the United States changed from strategic partners to counter the Soviet threat to competitors with conflicting ideologies.

In 1986, under pressure from the increasingly strong opposition, Chiang Ching-kuo started a process of liberalization. The founding of the oppositional Democratic Progressive Party (DDP) on September 1986 was tolerated. In July 1987, Chiang Ching-kuo lifted the martial law. In November, 1987, restrictions on contact with the mainland were lifted and visits to relatives in mainland China were permitted. In 1988, Chiang

Ching-kuo died, marking the end of nearly four decades' ruling of the Chiangs on Taiwan. Lee Teng-hui, a native Taiwanese, became the President of ROC.

Lee's work mainly consisted of three categories: First, he continued the liberalization process started by Chiang Ching-kuo and launched the process of democratization. In January 1989, establishment of new party was officially permitted. In May 1992, after the revision of the penal code, most imprisoned dissidents were released, and peaceful advocating of Taiwan independence was no longer persecuted. In 1996, Taiwan held its first direct presidential election, and Lee Teng-hui was elected as the president. Second, he propelled the process of nativization in which the Taiwanese identity was increasingly asserted. In November 1988, Taiwan began its "flexible foreign policy" (*tanxing waijiao*) and tolerated foreign countries to have dual recognitions for both the ROC and the PRC, which was *de facto* abandonment of the claim to be the sole representation of China. In November 1989, during the election, campaign slogans demanding Taiwan independence were tolerated for the first time. As the party president of the KMT, Lee struggled with the non-mainstream KMT nationalists, who preferred closer relations with mainland China and unification as soon as possible. As a result of the factional struggle, some non-mainstream KMT members left the KMT and formed the New Party in 1993. Third, Lee Teng-hui spread Taiwan's economic and political exchanges with mainland China. In April 1991, the Temporary Provisions Effective during the Period of Communist Rebellion were lifted, and mainland China would no longer be treated as a "rebel group," but as a "political entity" more or less on an equal footing with the ROC on Taiwan. In 1992, mainland China and Taiwan held a semi-official talk in Singapore, haggled over the issue of "One China," and reached "the 1992 Consensus": there is only "one China" and each side would state its own definition of "one China," which was called "one China, with respective interpretations" (*yi zhong ge biao*). In 1990s, economic exchange across the Taiwan Strait had increased dramatically.

In Taiwan, a combination of the Taiwan independence movement and the democratic movement characterized the opposition movement. While, with the exception of 300,000 aborigines, most people in Taiwan are Han Chinese, they can be mainly divided into three groups: (1) the so-called "native Taiwanese" whose ancestors migrated

to Taiwan from southern Fujian Province and have lived in Taiwan for several generations; (2) the Hakkas whose ancestors migrated to Taiwan from the mountain areas of Guangdong Province and have also lived in Taiwan for several generations; and (3) the so-called “mainlanders” who themselves or whose parents immigrated with the collapse of the KMT regime on the mainland. The first two groups, totally taking up about 85 percent of the population in Taiwan, usually have a stronger sympathy with the Taiwanese identity. The Hakkas often also identify themselves as native Taiwanese.

The assertion of the Taiwanese identity was a natural result of democratization. When Chiang Kai-shek and Chiang Ching-kuo ruled Taiwan, they relied on Chinese nationalism for legitimacy and repressed the Taiwan independence movement. After the oppositional DDP was formed, advocating for independence and reminding native Taiwanese of the history of the KMT suppression became an effective measure to gain popular support. Meanwhile, the process of liberalization helped to tolerate the Taiwan independence movement. As a result, compared to the previous periods, democratization tended to let the native Taiwanese have more of a say. Democratization enhanced the status of the Taiwanese identity and gave pro-independence politicians a leverage to win votes. So nativization and democratization were intertwined. Though the majority of Taiwanese did not support immediate declaration of independence, as a result of nativization and democratization, more and more Taiwanese sought a Taiwanese identity and preferred independence. From its founding on, the DDP has advocated the proclamation of independence. In 1992, the DDP passed a platform proposed by Chen Shui-bian, who later became the President of ROC. The platform advocated a proclamation of Taiwan independence. Since an immediate declaration of independence was too radical for many Taiwanese, the DDP has advocated for entry of the United Nations.

Generally speaking, since the late 1980s, Taiwan’s utility of independence  $i_2$  increased dramatically. On the other hand, the CCP’s crackdown of the student protest in Tiananmen Square in June 1989 further undermined Taiwanese’s trust in mainland China, which had been weak as a result of decades of confrontation. Taiwanese’s resentment to mainland China was greatly increased by the PLA’s missile tests and

military exercises in 1995-1996. As a result, in Period 4, Taiwan's utility of unification  $u_2$  decreased dramatically. Therefore, along with nativization and democratization, Taiwan's preference order changed from  $s_2 > u_2$  and  $s_2 > i_2$  to  $i_2 > s_2 > u_2$ , and in Period 4 it had  $s_2 < i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1 - p + h)}$ . Moreover, in this period, Taiwan channeled its economic strength into military strength by purchasing arms from the United States and other countries as well. As a result, Taiwan's military power had been greatly enhanced, which was captured by a decrease in the value of  $p$ . For example, in September 1992, U.S. President George Bush decided to sell 150 F-16 aircraft to Taiwan. In this period, on the one hand, the values of  $u_2$  and  $p$  decreased, which led to an decrease in the value of  $u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1 - p + h)}$ , and on the other hand, the value of  $i_2$  increased from less than  $s_2$  to larger than  $s_2$ . Even though the increase in exchanges between the two sides of the Taiwan Strait increased the cost of war for Taiwan  $w_2$ , it could not offset the effect of the assertion of the Taiwanese identity and the rise of Taiwanese military power. As a result, with its domestic politics evolving, Taiwan even passed from  $s_2 < i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1 - p + h)}$  to  $u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1 - p + h)} < i_2 < u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1 - p)}$ . Correspondingly, Taiwan's strategy changed from "Do not declare independence if the United States promises to help; Do not declare independence if the United States does not promise to help" in Period 3 to "Declare independence if the United States promises to help; Do not declare independence if the United States does not promise to help" in Period 4.

On the side of mainland China, as a result of economic reform, the fading of communism, and the legitimacy crisis after the 1989 Tiananmen crackdown, the CCP had to resort to nationalism for legitimacy. It tended to justify its ruling by its commitment to modernizing China and protecting the sovereignty and territorial integrity. Beijing did expect a promising future when the PRC's Wang Daohan, chairman of the Association for Relations across the Taiwan Straits (ARATS) met Dr. Koo Chen-fu, chairman of the Taipei-based Straits Exchange Foundation (SEF), in Singapore in September 1992. In

January 1995, Jiang Zemin made public his eight-point proposals and showed good will, listing eight proposals for developing cross-strait relations under the one-China and “One Country, Two Systems” framework. However, because of the assertion of the Taiwanese identity and the increase in Taiwan’s utility of independence, it was very difficult for mainland China to unify with Taiwan by peaceful means under current conditions.

With the increasing assertion of nationalism in Taiwanese domestic politics and the increasing assertion of nationalism in the mainland Chinese politics, if the United States could adjust its role to prevent provocation from either side, the situation in the Taiwan Strait would have been stable. However, in this period, conflicts and troubles characterize the relationship between the United States and mainland China. In 1989, the CCP cracked down the student protest in the Tiananmen Square, which entailed economic sanctions by Western countries. Moreover, with the ending of the Cold War, the United States no longer needed mainland China as a strategic partner to help to contain the Soviet Union. As the communist ideology was phased out, the CCP resorted to nationalism to legitimate its ruling. Some differences and conflicts between the United States and mainland China were touted by both the Chinese state-controlled propaganda machines and the Western mass media.

Meanwhile, the United States was in the midst of readjusting its China policy. Despite some conflicts with the PRC in his first term, Clinton had employed an engagement policy, following the general direction started by President Nixon. “Over time the rationale for engagement has shifted from a strategic partnership to contain the Soviet Union to one of the encouraging Chinese support for American security policies in areas such as nonproliferation, while simultaneously encouraging the restructuring of Chinese domestic institutions towards the democratic and market-oriented New World Order norms” (Federation of American Scientists Military Analysis Network, N.D.). However, the American critics of engagement had found many reasons to blame the PRC: human rights record, nuclear proliferation, and trade deficit, etc. The Clinton engagement policy rested largely on the premise that over time, the structural transformation of China would lead to integration into the New World Order and elimination of the material basis for future military conflict. However, whether this premise worked was based only on

belief. So in this period, the Sino-U.S. relations were often challenged by incidents. In some occasions, by mismanaging the balance of power, the United States had even been a factor to increase the tension in the Taiwan Strait. The following description of the 1995-1996 Taiwan Strait Crisis is based on Federation of American Scientists Military Analysis Network (2000b).

### **1995-1996 Taiwan Strait Crisis**

On June 9-10, 1995, ROC President Lee Teng-hui paid a private visit to his alma mater, Cornell University. Before the visit, in September 1994, the U.S. State Department announced the ban on visits by Taiwan's top leadership to the United States. In 1994-1995, Senior U.S. officials assured the PRC that permitting an American sojourn by President Lee would be inconsistent with the U.S. policy. However, in the beginning of May, the U.S. Congress passed two concurrent resolutions with 97 votes to 1 in the Senate and 396 votes to 0 in the House. The resolutions urged the Clinton Administration to grant President Lee a visa for a "private visit." On May 22, 1995, the U.S. government decided to grant President Lee Teng-hui permission to visit the United States to attend a reunion at Cornell University.

Beijing believed that Lee Teng-hui's repeated use of the term "Republic of China on Taiwan" during his visit was a challenge to the One-China formulation; and, if it did not react strongly, Lee would visit other major Western countries. In response, along with verbal assault on Lee through its state-run media, the PRC conducted tests of six missiles from July 21 to 26 in an area only 60 kilometers north of Taiwan's Pengchiayu Island. Tension increased in the Taiwan Strait after the PRC announced a new series of guided missile tests in the East China Sea between August 15 and 25, 1995. By early 1996, Beijing had deployed forces from other parts of the country to the coastal areas facing Taiwan and set up new command structures for various kinds of military action against Taiwan. In early March 1996, China began a week-long series of ballistic missile tests and announced it would conduct an additional set of live fire military maneuvers as well. On March 5, 1996, the Xinhua News Agency announced that the PRC would conduct missile tests from March 8 through March 15, 1996, within 25 to 35 miles of the 2 major

northern and southern ports of Taiwan, Keelung and Kaohsiung. On March 9, China announced plans to conduct live-ammunition war exercises in the Strait of Taiwan until March 20. The PRC ended the missile tests as scheduled on March 15 and one of its naval exercises on March 20. Beijing indicated that it did not plan to attack Taiwan.

These missile tests and military exercises were intended to intimidate and thereby influence voters in the Taiwanese presidential election. On March 23, 1996, the people of the ROC on Taiwan elected Lee Teng-hui as their first directly elected President with 54 percent of the vote.

In the crisis, the United States showed its support for Taiwan, but in a manner different than what it did in the first two Taiwan Strait Crises in 1950s. On December 19, 1995, the U.S. sent the USS Nimitz from the Eastern Pacific to the Taiwan Strait. This marked the first time American ships had patrolled the strait since 1976. The U.S. Seventh Fleet monitored Chinese military live-fire exercises off the coast of Taiwan in March and April 1996. The forward-deployed Independence carrier battle group took station off the eastern coast of Taiwan. The Nimitz and six additional ships arrived near Taiwan before the March 23 presidential election. Chinese Premier Li Peng warned Washington not to make a show of force by sending its navy through the Taiwan Strait. Secretary of Defense William Perry had a hard-line response, but the U.S. Navy kept away from the strait.

After the 1995-1996, tensions in the Taiwan Strait decreased and relations between the United States and China improved. Chinese President Jiang Zemin visited the United States in the fall of 1997, the first state visit to the United States by a Chinese president since 1985. President Clinton visited China in June 1998. Most importantly, after the crisis, the United States accepted the Chinese position of “Three No’s” in dealing with Taiwan issue.

The PLA conducted missile tests and military exercises in the Taiwan Strait to send a message that mainland China would attack Taiwan if it declared independence. It was to restate the military threat overshadowed by years of peace and by political and economic exchanges. On the other hand, it was a reaction to the abrupt change that the

United States had made. Actually, the 1995-1996 Taiwan Strait Crisis was not only stimulated by Lee Teng-hui's visit to Cornell University, but also by Clinton administration's way to handle Lee Teng-hui's visit, which undermined the administration's credibility. The Clinton administration first labeled Lee Teng-hui's visit to the United States as official and inconsistent with the U.S. policy towards the two sides of the Taiwan Strait, then abruptly changed without any warning or preparation on the side of Beijing. Chang (2000: 70-71) describes some diplomatic activities between mainland China and Taiwan before Lee's visit.

In September 1994 the State Department announced the ban on visits by Taiwan's top leadership. Beijing argued that if someone called "President" should visit, in whatever capacity, that visit would ipso facto be "official." Unfortunately, the Clinton administration accepted Beijing's position. In 1994-95, senior U.S. officials assured the PRC that permitting an American sojourn by President Lee would be inconsistent with U.S. policy. Secretary of State Warren Christopher then iterated the administration's position on April 17, 1995, at a meeting in New York with Foreign Minister Qian Qichen. To be sure, Christopher indirectly warned Qian that "many people in Congress, including good friends of Beijing, do not understand why a visit to the *alma mater* to pick up an honorary degree would have to be seen as official in nature...The mood in the country was such that the administration position was not receiving overwhelming accolades." But this veiled hint of a possible policy reversal was lost on Qian and a crisis ensued.

From mainland China's point of view, if the United States could change its interpretation of an agreement carelessly, it would be very dangerous. Actually, the United States changed so abruptly that Beijing flew into rage. President Jiang Zemin complained in an interview:

After we got information that Lee Teng-hui was going to visit Cornell University, we raised this issue officially before the State Department of the United States. Secretary of State Christopher firmly replied that if Lee Teng-hui's visit took place, it would represent [a] violation of the Joint U.S.-Sino communiqué.

However, after seven or eight days, all of a sudden, the White House announced the decision allowing Lee Teng-hui to make the visit, and they said that it was consistent with the principles enshrined in the communiqués. According to a Chinese proverb, with one turn of the hand, you can produce clouds; with another turn of the hand, you can produce rain. What I mean is, they always have a justification. They think they are always right. ...This is a hegemonic act. This is not the right way to treat others as equals (Strasser et al, 1995).

The Clinton administration had mishandled Lee Teng-hui's visit to Cornell University. It first linked the visit to the U.S.'s one-China policy and added political meaning to it, then changed abruptly its promise to Beijing. It would have been more appropriate if the United States first clarified that this visit was a private visit, then explained to Beijing and changed smoothly when it was difficult to insist its decision under the Congress pressure. Given the sensitivities of these Taiwan issues, the clarity of major powers' positions and their credibility are very important. In the First Taiwan Strait Crisis in 1954, the purpose of the PRC's action was to test whether the United States was serious about protecting Taiwan and what the Soviet Union's position was. In the Second Taiwan Strait Crisis in 1958, the purpose of the PRC's action was to test the positions of the United States and the Soviet Union and to show the PRC's independence from the Soviet Union. In the 1995-1996 Taiwan Strait Crisis, the PRC's purposes were: 1. to send a message to the United States: as a superpower to maintain the balance of power in the Taiwan Strait, it should maintain its credibility and policy consistency regarding the Taiwan issue; 2. to test the seriousness of Washington: would the U.S. take actions to protect Taiwan and what its bottom line was; 3. to punish Taiwan: if Taiwan pushed its provocative seeking for international space, it would pay a price. To some extent, the PRC did successfully send the messages that it wanted to transmit, and got the feedback information it hoped to see.

Mainland China's angry reaction to the United States' allowing Lee Teng-hui to visit Cornell United States was also related to the domestic politics of mainland China. As a result of the student movement in Tiananmen Square, the CCP experienced a reshuffling of its leadership team in 1989. Jiang Zemin was appointed as the General

Secretary of the CCP, substituting for Zhao Ziyang. However, in the first few years following his step-up, Jiang Zemin often faced challenges from such factions as the military and the Beijing municipal leaders. There was a possibility that the internal power struggles led to mainland China's hard-line reactions in the 1995-1996 Taiwan Strait Crisis. It was either because the hard-liners controlled the power of decision making for the military or because Jiang Zemin had to take hard-line actions such as a military exercise to show his determination and capability to lead the military and win its support.

However, the actions that the PRC took also demonstrated that Beijing lacked full understanding of democratic politics. While nativization and democratization in Taiwan has led to the assertion of Taiwanese identity and laid potential for conflicts across the Taiwan Strait, Beijing had not expected it because its authoritarian system had prevented it from paying an appropriate amount of attention to the evolution of the Taiwanese self-identity, which was rooted among the common Taiwanese people. As an authoritarian regime, Beijing tended to presume that a government could always suppress its opponents and neglect domestic public opinion in order to attain the good that the public was not aware of. However, this presumption had proved erroneous not only for the United States, a mature democracy, but also for Taiwan, a young democracy. Officials in Beijing believed that all states' foreign policies should be consistent because states were unitary players. Frictions between the legislative and executive branches of the government were internal affairs and should not have affected states' foreign policies. The view has been reconfirmed by the fact that in China, the Congress was a rubber stamp and never challenged the executive branch's decision makings. However, in a democracy like the United States, when the Congress overwhelmingly passed the resolution to support the invitation of President Lee Teng-hui's private visit to Cornell University, it was very difficult for President Clinton to turn down this resolution, especially when he faced increasing pressure for his second presidential campaign. Beijing not only lacked understanding the separation of power in the United States, but also neglected Taiwanese public opinion, which brought about serious effects. Because of the CCP's neglect of public opinion in Taiwan, which derived from its authoritarian political system, Beijing had underestimated the harm of its military exercises to

Taiwanese public opinion. After the military exercises, on the one hand, Taiwanese realized the seriousness of Beijing's position. But, on the other hand, they, first, firmly rejected Beijing's proposal of "One Country, Two Systems," and, second, increasingly identified themselves as Taiwanese distinct from Chinese. Generally speaking, while the missile tests and military exercises slowed down the increase in Taiwan's utility of independence  $i_2$ , they also decreased Taiwan's utility of unification  $u_2$ , which led to the accelerating assertion of Taiwanese identity. This reinforced Taiwan's position in Scenario 9 that Taiwan employs the strategy of "Declare independence if the United States promises to help; Do not declare independence if the United States does not promise to help."

Ultimately, the reasons for the 1995-1996 Taiwan Strait Crisis were rooted in the United States' failure to realize the significance of the Taiwan independence movement and adjust its security and diplomatic policies regarding the Taiwan issue. Generally speaking, from late 1980s to late 1990s, the assertion of Taiwanese identity and the development of Taiwan independence movement moved the situation in the Taiwan Strait from Scenario 3 to Scenario 10, and to Scenario 9. As Figure 8 demonstrates, in response to the domestic political change in Taiwan, the United States should adjust its security and diplomatic policies. In early 1990s, the United States continued its "ambiguous policy." The ambiguous policy in this period has corresponded to a new situation in the Taiwan Strait different than that in Period 3. In Period 3, the U.S. could employ ambiguous policy because neither mainland China nor Taiwan had incentive to provoke tension in the Taiwan Strait. By contrast, in Period 4, the U.S. should employ ambiguous policy because of a different rationale: if the United States firmly and clearly promised to help Taiwan defend itself against mainland China, this promise would have helped to propel the Taiwan independence movement; however, if the United States clearly stated that it would not help Taiwan defend itself against mainland China, it would have encouraged mainland China to act aggressively and made Taiwan unconfident in its political exchange with mainland China. As a result, in the early part of this period, ambiguous policy was compatible with the new situation in the Taiwan Strait. However, even though the United States should continue its ambiguous policy, in

response to the assertion of Taiwanese identity, the United States should have employed a diplomatic policy to restrain the Taiwan independence movement. However, after 1989, the relationship between mainland China and the United States was characterized by conflicts and tension. The United States had annoyed mainland China by opposing mainland China's bidding for the 2000 Olympics. While the U.S. diplomatic policy in this period failed to discourage the development of the Taiwan independence movement, it had to some extent encouraged Taiwan to seek international status.

As the situation in the Taiwan Strait moved from Scenario 10 to Scenario 9, the United States should adjust both its security and diplomatic policies. At least, it should have adjusted its diplomatic policy and restrained the Taiwan independence movement. In contrast, the United States had failed to make this policy adjustment by 1995, and its way of handling Lee Teng-hui's visit stimulated the Chinese nationalism and brought the situation from Scenario 9 to Scenario 6. Mainland China returned to the highly nationalistic mood similar to in Period 2 and employed a very aggressive strategy. On the other hand, because Taiwan's preference had changed from repressing Taiwan independence to seeking Taiwan independence, the situation was very serious and could have led to further confrontation between mainland China and Taiwan. As the game theoretical model shows, in the southwestern part of the area in Scenario 6, the United States could employ a mixed strategy to prevent war from breaking out. In reality, the Clinton administration did send Nimitz aircraft fleet to the area but tried to restrain the degree of confrontation with mainland China, which was very different from its reaction in the two Taiwan Strait crises in the 1950s. In my view, though the U.S. diplomatic policy to mainland China and Taiwan had failed to restrain Taiwan independence movement, and its way to handle Lee Teng-hui's visit to Cornell University had led to Beijing's worry and furor, its military reactions to the Chinese military exercises in 1996 were quite appropriate and effective.

After the Chinese nationalist furor calmed down, the Clinton administration adjusted its policy. Taking account of the new situation that the Taiwan independence movement had become an important source of tension, Washington declared a full adjustment of its policy---the "Three No's" concerning the Taiwan issue. In October

1997, during a meeting with Jiang Zemin in Washington, Clinton accepted the “Three No’s” position of the PRC, promising: (1) not to support Taiwan’s independence; (2) not to support “two Chinas” or “one China, one Taiwan”; and (3) not to support Taiwan’s membership in any international organization based on statehood. President Clinton publicly reiterated it in Shanghai on June 30, 1998. Some Taiwanese scholars believe the “Three No’s” was the U.S. retreat from the Taiwan Relations Act framework and argue that “Washington is being dragged into explicit support of China’s agenda” (Chang 2000: 68). Yet, this adjustment was the U.S.’s voluntary decision, taking Taiwan’s seeking its identity and international status into consideration. As later developments in both mainland China and Taiwan demonstrated, the U.S. promise not to support independence has discouraged both leaders in Taiwan and those in Beijing to act rashly and provoke tension.

During and after the 1995-1996 Taiwan Strait Crisis, some U.S. politicians criticize the Clinton administration’s ambiguous policy, “As a result [of the ambiguous policy], the Administration is increasing, not diminishing, the risk of conflict with Communist China” (Cox 1996). Cox argues for restoring a policy of firm deterrence through clear threat to use force if provoked. However, in my view, the 1995-1996 Taiwan Strait Crisis resulted from diplomatic problem rather than from security problem. Mainland China had no intension to attack Taiwan in the crisis. Even during the military exercises, Beijing promised to mainland-based Taiwanese businessmen that there would be no war between the two sides of the Taiwan Strait, which seriously undermined the effect of threatening. As long as mainland China does not intend to launch an immediate assault on Taiwan, the United States does not need to have a security policy of firm deterrence. Nonetheless, Cox (1996) points out correctly that credibility and predictability are absolutely imperative in maintaining peace. In my view, mainland China launched military exercises in 1995-1996 not because the Clinton administration’s policy was not hard-line enough, but because the Clinton administration’s abrupt change regarding Lee’s visit made Beijing worry about the credibility of the Clinton administration and the consistency of the U.S. policy. The military exercises were intended to warn the U.S. that it should keep the consistency of its China policy.

## **V. Period 5: 1999—**

On July 9, 1999, ROC President Lee Teng-hui told a German radio interviewer that the cross-strait relationship is a “special state-to-state relationship.” This not only stood in sharp contrast to Beijing’s position that Taiwan is part of China and its government is merely a local one, but also marked a break from the “1992 Consensus). In response, mainland China postponed indefinitely a planned trip to Taiwan by mainland China’s top cross-strait negotiator, Wang Daohan, who was scheduled to visit the island in October 1999. Since then, mainland China has cut all channels of cross-strait political exchange. In 2000, Chen Shui-bian, candidate from the pro-independent DDP, won the presidential election in Taiwan. After the 2000 presidential election, some KMT members left the party and founded the People First Party (PFP) headed by James Soong. Lee Teng-hui resigned as Chairman of KMT, and later he was expelled from the KMT. Lee’s followers founded an ultra-pro-independent party Taiwan Solidarity Union (TSU) in August 2001. Confrontations between the anti-independence parties --- the KMT and the PFP--- and the pro-independence parties --- the DDP and the TSU--- have characterized the Taiwanese domestic politics. In his inauguration speech on May 20, 2000, Chen Shui-bian declared that “as long as the CCP regime has no intention to use military forces against Taiwan,” he would:

- 1) not declare independence of Taiwan;
- 2) not push forth the inclusion of the so-called “state-to-state” relations description in the Constitution;
- 3) not endorse a referendum on independence or unification,
- 4) not change Taiwan’s formal name, and
- 5) not abolish the National Reunification Guidelines.

However, he also declined to acknowledge “the 1992 Consensus” --- “one China, respective interpretations,” and tried to consolidate the *de facto* independence of Taiwan. Beijing declined to have political exchange with Taiwan as long as the Chen

administration denied the one-China principle. Despite the political “cold war,” economic exchange has continued to increase rapidly. Mainland China has now become the largest export market of Taiwan and the recipient of over a half of Taiwanese foreign capital flows.

For mainland China, the one-China principle is its foundation for all cross-strait political exchanges. Since Lee Teng-hui negated this principle, and the new president Chen Shui-bian refused to return to the “1992 Consensus”--“one China, respective interpretations” (*yi zhong ge biao*), the foundation for cross-strait political exchange has been destroyed. Therefore, new political exchanges will not be continued until Taiwan comes back to the “1992 Consensus.”

After Chen became the President of the ROC, his administration launched transformations of Taiwan’s formal identities and education and made them compatible with Taiwan independence ideology. For example, the word “Taiwan” was added to the cover of the ROC passports. In public speeches by state officials, “Taiwan” was emphasized and reiterated, while the “Republic of China” was seldom mentioned. School textbooks were changed by emphasizing local Taiwanese culture and de-emphasizing Chinese culture. As a result, even though Taiwan still keeps its formal name as “Republic of China,” Chen’s government has impressed upon many Taiwanese’s mind the notion that Taiwan is an independent country and mainland China is a foreign one. On August 3, 2002, Chen Shui-bian told the World Federation of Taiwanese Associations that “...with Taiwan and China on each side of the Taiwan Strait, each side is a country” (International Committee for Human Rights in Taiwan 2002). To some extent, “one country on each side” has been the main theme for Chen’s cross-strait policy.

Actually, Taiwan’s proactive seeking its own new and unique international status has also to do with the change in the military balance across the Taiwan Strait (Federation of American Scientists Military Analysis Network, N.D.). After the Cold War, both mainland China and Taiwan have tried to upgrade their naval and air forces. China turned to Moscow for assistance, while Taiwan turned to the United States. “Taiwan's military buildup has succeeded and is now largely complete, while China's

rearmament effort has faltered and is many years away from completion. The present military balance across the Taiwan Strait is more favorable to Taiwan than at any point in recent history, and Taiwan's relative strength will inexorably decline over the coming decade as China's rearmament effort slowly catches up" (Federation of American Scientists Military Analysis Network, N.D.). In this period, Taiwan enjoyed a greater advantage relative to mainland China, and this advantage would decrease over the next decade along with the fulfillment of the Chinese military modernization plans. The present military situation and political moment offer unique opportunity for proactively exploring the possibilities for moving away from the one-China policy and for legalizing Taiwan's *de facto* independence. Taiwan has been emboldened to some extent by its military advantage. And it is apprehensive to some measure lest this moment be frittering away through inaction. So it continues to take actions to enhance and consolidate its international status (Federation of American Scientists Military Analysis Network, N.D.).

The general ideology in Taiwanese politics has come to favor independence. In the Legislative Yuan election in 2001, the pro-unification New Party completely lost popularity, and it now could keep only one out of 225 seats. Because of the increasing assertion of a Taiwanese identity, even the conservative KMT has to support the recent referendum proposals on a nuclear plant and Taiwan's application for entry into the World Health Organization. These referendums are likely to set a precedent for a future plebiscite on the independence-unification issue. It is noteworthy that both Washington and Beijing have expressed concerns about the DDP government's decision to hold the referendum before or along with the 2004 presidential election. It is now Washington that is taking actions to press Taiwan to abandon the referendum. While many Taiwanese complain that mainland China has used the United States to suppress Taiwanese independence, this is also the U.S.'s voluntary choice to maintain the status quo of the Taiwan Strait.

Despite some diplomatic frictions following a mid-air collision between a U.S. EP-3 spy plane and a Chinese fighter in April 1, 2001 off the south China coast, President George W. Bush has continued the U.S. policy towards mainland China and Taiwan that has been employed in the past two decades. Even though he has not reiterated the Clinton

administration's Three No's policy, he has made clear more than once that the United States does not support Taiwan independence. Generally speaking, in the current period (as shown in Scenario 9), the policy of "Do not promise to defend Taiwan against mainland China" is the optimal strategy for the United States to maintain the status quo of peaceful separation. This outcome, in turn, is where the United States' national interest clearly lies, as this analysis of the Taiwan-mainland China-the United States relations has demonstrated. However, while the U.S. security policy should change from "Promise to help Taiwan defend itself against mainland China" to "Do not promise to help Taiwan defend itself against mainland China", its diplomatic policy should not change greatly. Ambiguous policy is still suitable, but the United States should adjust its diplomatic wording to convey the message of the new security policy and to maintain the balance of power. In the current situation, diplomatically, the United States should not promise to help Taiwan defend itself against mainland China, but should deter mainland China from taking aggressive action. The diplomatic policy of the Bush administration tends to prevent either side of the Taiwan Strait from provoking the other side and continues the one-China policy that has been employed for two decades<sup>5</sup>. Generally speaking, since mid-1990s, even though the United States still employs an ambiguous policy, the security core of the policy has changed greatly.

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<sup>5</sup> President George W. Bush stated when speaking at Tsinghua University in Beijing on February 22, 2002, "I honor...[the Taiwan Relations Act], which says we will help Taiwan defend herself if provoked. But we've also sent the same message that there should be no provocation by either party for a peaceful dialogue" (White House 2002a).

## Chapter 5. Conclusion and Some Speculations on the Future of Cross-Strait Relations

In this thesis, I analyze the interactions among the United States, Taiwan, and mainland China in a three-stage dynamic game theoretical model of complete information and yield various scenarios that lead to different outcomes. In solving for equilibrium of the game, I consider two general situations: when the United States' promise to help Taiwan defend itself against mainland China is credible and when the United States' promise is incredible. Under the condition that the United States' promise is credible, two situations are considered: when the status quo of peaceful separation is Taiwan's favorite choice and when independence is Taiwan's favorite choice. In addition, I also introduce mixed strategy into the game and solve for equilibrium of mixed strategy. I apply the game theoretical model to the history of the Taiwan issue and divide the history into five periods: 1949-1950, 1950-early 1970s, early 1970s-late 1980s, late 1980s-1999, and after 1999. As Figure 8 demonstrates, corresponding to the time sequence, the security situation in the Taiwan Strait evolves from Scenario 2 to Scenario 3, to Scenario 10, to Scenario 9, to M area of Scenario 6, and back to Scenario 9.

Based on the belief that current relations between mainland China and Taiwan are characterized by the subgame perfect Nash equilibrium of Scenario 9, we can try to predict the future tendency by taking some trends into account.

First, in my view, the future of the relations between mainland China and Taiwan depend on China's utility of unification, Taiwan's utility of independence, the United States' policy towards the two sides of the Taiwan Strait, the relative strengths of the three players---the United States, mainland China and Taiwan, and the costs of war for them. If the Taiwan independence movement continues to develop and the Taiwanese identity continues to be increasingly asserted, there is a possibility that  $i_2 > u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$ , which means that people in Taiwan prefer independence so much that even a war with mainland China without the United States'

promise to help can be endured. As a result, the strategy equilibrium would move from Scenario 9 to Scenario 8 or to Scenario 11, Taiwan would declare independence and the United States would choose to support Taiwan because of Taiwan's strategic importance. However, as long as mainland China does not drop its threat to attack Taiwan if Taiwan declares independence, and as long as this threat is credible, Taiwan is not likely to take this risk.

Meanwhile, going to war with mainland China in order to protect Taiwan is not to the United States' best interest. The best interest for the United States is to maintain the status quo of peaceful separation, making Taiwan a democratic example for mainland China and encouraging the restructuring of mainland Chinese domestic institutions towards the democratic and market-oriented norms. This strategic rationale has been the foundation for the engagement policy of the Clinton administration to mainland China and will continue to be the foundation for the China policy of the United States. After September 11, 2001, during its global war on terror, the United States needs China's cooperation to prevent the proliferation of weapons of mass destruction and to persuade North Korea to give up its nuclear weapon program. In accordance with U.S. strategic interest, the United States should continue to restrict the Taiwanese independence tendency, or at least not proactively support it<sup>6</sup>.

On the other hand, the assertion of Chinese nationalism can also move the situation of the Taiwan issue from Scenario 9 to Scenario 6, which leads to the outbreak of a war in the Taiwan Strait. In the past two decades, economic reforms have achieved great successes but also brought about social and political problems---unemployment,

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<sup>6</sup> On October 14, 2003, when asked about Chen Shui-bian's rejection of the "one China" policy, President Bush's national security adviser Condoleezza Rice reaffirmed the US "one China" policy towards Taiwan, "The US is very clear on our policy about Taiwan, one-China policy... It is our very strong belief that nobody, nobody should try unilaterally to change the status quo here, that this will come to a peaceful resolution. There must be a peaceful resolution of the cross-straits issue...The United States will continue to remind all parties that that is the position of the United States government and that it is a position to which we expect everyone to adhere" (Agency France Presse 2003). Rice also said that "the basic blocks of American policy" remained the three communiqués that laid the foundation for Sino-US diplomatic relations and the 1979 Taiwan Relations Act, which requires US presidents to offer Taiwan the means to defend itself (Agency France Presse 2003).

corruption, and income inequality. The CCP has gradually transformed itself from a communist revolutionary party to an authoritarian party that tends to represent the interest of bureaucrats of political privilege and capitalists emerging in the economic reform. As a result, mainland China has been transformed into a bureaucratic authoritarian state that emphasizes the stability of political order and the normalization of its economic system (O'Donnell, 1986).

In particular, after the crackdown of student protests in Tiananmen Square, the CCP has to resort to nationalism for legitimacy. The legitimacy of the leadership in Beijing depends on its ability to link China's domestic and foreign policies to building a rich country that can refresh the perceived abuses of the past and form a basis for China as a global power (Federation of American Scientists Military Analysis Network, N.D.). If the economic development is set back and social problems deteriorate, there is a possibility that Beijing will stir up nationalism and use a confrontation with Taiwan to mask the domestic crisis. The cultivation of nationalism makes it very difficult for Beijing to compromise on important foreign policy issues. If nationalism keeps growing in the mainland, there is a possibility that the tension in the Taiwan Strait will increase. When the situation goes to Scenario 6, the United States should, on the one hand, calm down the Taiwanese independence movement in Taiwan, and on the other hand, reiterate its determination to protect Taiwan. Generally speaking, in the southwestern part of Scenario 6, the United States should employ a mixed strategy. If mainland China takes an aggressive position, it is very important for the United States to send a message that the United States will join the war and make clear that its promise is not a bluff.

Besides considering Chinese nationalism and Taiwanese nationalism, which, respectively, influence mainland China's utility of unification and Taiwan's utility of independence, we should also consider the cultural exchange between mainland China and Taiwan. In the past two decades, communications on non-governmental level have developed rapidly. Mainland China and Taiwan have shared an increasingly common pop culture among young generations. In 2002, Taiwanese paid 3.10 million visits to mainland China (Taiwan Affairs Office of the State Council, PRC 2003a). Many Taiwanese are living in mainland China as businessmen, students, Christian missionaries,

etc. After the Cold War over, people in both mainland China and Taiwan have increasingly aware of their cultural commonalities rather than ideological differences (Huntington 1993). More and more Chinese in both sides of the strait oppose any cross-strait war, and the saying “Chinese do not fight Chinese”<sup>7</sup> is often heard. Along with the increasing communications on non-governmental level, anti-war pressures have also developed in both mainland China and Taiwan, which increase the value of  $c$ . This anti-war pressure helps to lower the probability of war in the Taiwan Strait.

Besides, the on-going economic integration has maybe been the most important trend concerning the Taiwan issue. The total trade volume between mainland China and Taiwan for 2002 has reached US\$ 44.66 billion, and Taiwanese investment in mainland China for 2002 has reached US\$ 2.97 billion (Taiwan Affairs Office of the State Council, PRC 2003b). Both of them have increased rapidly since 1999, regardless of the freezing of political exchange. Mainland China has become the largest recipient of Taiwanese investment<sup>8</sup>. Because of economic integration, the costs of war for both mainland China ( $w_3$ ) and Taiwan ( $w_2$ ) have increased. In addition, the utilities that mainland China and Taiwan derive from the status quo of peaceful separation ( $s_3$  and  $s_2$ ) have also increased.

As a result, both  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$  and  $u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$  increase. The increase in  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$  makes it less likely for mainland China to move from

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<sup>7</sup> This saying was used by Mao Zedong in 1935, when the KMT and the CCP were fighting each other and Japan had invaded China. Mao issued a call to all the Chinese Communists and Nationalists, even all the Chinese people, to unite against the Japanese. “Chinese do not fight Chinese” was also given by Jiang Zemin in 1995 as the supreme guideline for unification propaganda toward Taiwan in his “Eight Points” (*Taipei Times* 2001).

<sup>8</sup> As Therese Shaheen, the chairwoman of the American Institute in Taiwan (AIT), says on October 14, 2003, “60 percent of all the semiconductors produced in China are made by Taiwanese-invested firms...70 percent of all China-made electronics goods are manufactured by Taiwanese companies...Taiwanese firms invested US\$4.3 billion in China last year, while investing US\$1 billion in the rest of the world” (Associated Press 2003).

Scenario 9 to Scenario 6, and the increase in  $u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$  makes it less likely for Taiwan to move from Scenario 9 to Scenario 8. Therefore, the economic integration helps to maintain the status quo of peace in the Taiwan Strait. When the assertion of nationalism in mainland China and Taiwan move the trajectory of the Taiwan issue in the east and north directions in Figure 8, the increases in costs of war have also moved the dotted lines  $i_3 + \frac{(w_3 + w_3^h)}{(p-h)}$ ,  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$ , and  $i_3 + \frac{(s_3 - i_3 + w_3 + w_3^h + c)}{(p-h)}$  in the east direction, and the dotted lines  $u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p+h)}$  and  $u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$  in the north direction, which offset the effects of the assertion of mainland Chinese and Taiwanese nationalisms on the security in the Taiwan Strait. To some extent, the economic integration creates such a situation: a war is so destructive and costly that neither side of the Taiwan Strait can risk going to war. For Taiwan, it has such a small territory that a war would destroy decades of economic and political achievements. For mainland China, a war will disrupt the on-going process of modernization and deteriorate the social and political problems. However, the high costs of war for both sides also provide the pro-independence parties in Taiwan a chance to stir up nationalism and further assert the Taiwanese identity. In the future, the probability of war will be small, but the tense political relations will persist. Even if Lien Chan and James Soong, the KMT-PFP candidates, win the 2004 presidential election, the lack of trust between the two sides of the Taiwan Strait will be difficult to overcome.

As mainland China's economy continues to grow and its military modernization plans are fulfilled, mainland China's military power relative to Taiwan's will increase in the future, which can be captured by an increase in  $p$ . As a result,  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$  will decrease, and  $u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$  will increase. The decrease in  $i_3 + \frac{(s_3 - i_3 + w_3 + c)}{p}$  will make it more likely for mainland China to move from Scenario 9 to Scenario 6, whereas the increase in  $u_2 + \frac{(s_2 - u_2 + w_2 + c)}{(1-p)}$  will make it

less likely for Taiwan to move from Scenario 9 to Scenario 8. Therefore, the effect of mainland China's military modernization on the peace and security in the Taiwan Strait can be both positive and negative.

In the past decade, mainland China has been in the process of learning how to deal with Taiwanese who came to live in a democracy. Any aggressive action such as military exercise could further drive Taiwanese away for its Chinese legacy and encourage them to support the pro-independence politicians. With the 2004 election approaching, mainland China should not take any aggressive action to stir up the Taiwanese "victimization syndromes" (*beiqing qingjie*) (Su 2002). Actually, in the elections, the DDP tends to stir up the Taiwanese nationalism to gain votes. In the 2004 election, the KMT will deemphasize its unification doctrine and emphasize its capability to strengthen the Taiwanese economy.

The 2004 presidential election will have crucial significance for the security in the Taiwan Strait. If Lien Chan and James Soong, the "pan-blue" presidential and vice-presidential candidates, are elected in 2004, the status quo in the Taiwan Strait will be maintained for at least four years. Then, in 2008, maybe Taiwan's military strength relative to mainland China will have declined, which will restrain the Taiwan independence movement. However, mainland China should not expect the new administration to make large compromise in the negotiation between the two sides of the Taiwan Strait. As Lien Chan says, "Taiwan needs to be self-independent, and we insist on maintaining the Republic of China's sovereignty and independence. Taiwan's future should be decided by its 23 million people" (*Taipei Times* 2003b). However, if Chen Shui-bian is elected, the status quo will be further challenged, which will bring about further instability in the Taiwan Strait. Chen Shui-bian's "Five No's" promise in his 2000 inauguration speech will surely be at least partly violated. Moreover, if Lien Chan loses the presidential campaign, the KMT might further fade away from Taiwan's political arena.

Usually in Taiwan's elections, the pro-independence parties, the DDP and the TSU, tend to stir up the Taiwanese pro-independence affections to provoke mainland

China. As long as mainland China reacts following a hard line through verbal assault and military threat, the reactions will provoke Taiwanese “victimization syndromes” and encourage common Taiwanese to unite around the pro-independence parties and vote for them. As a result, in elections, pro-independence candidates often make provocative remarks, verbally assaulting mainland China, accusing their competitors as traitors of Taiwan, and provoking Beijing into rage. As long as these provocative actions do not lead to the PLA’s attack, they can generate a lot of utility for the pro-independence parties. These situations will surely happen again in the 2004 presidential election. Actually, Chen Shui-bian has indicated his intention to set “one country on each side of the Taiwan Strait” as campaign theme for the 2004 presidential election (*Taipei Times* 2003a). As the model shows, when we allowed both the United States and Taiwan to have mixed strategies by assigning certain probabilities to each of their pure strategies, Taiwan (especially the ruling DDP) will assign as much probability as possible to the strategy of “Declare independence,” with constraint that this probability will not lead to mainland China’s attack. The model with mixed strategy shows that the probability that Taiwan assigns to “Declare independence” depends on the United States’ assigned probability to the strategy of “Promise to help Taiwan.” The more strongly the United States promises to help Taiwan, the more provocative the pro-independence candidates will be. As mainland China realizes that aggressive threat can only further drive Taiwan away, it will negotiate with the United States and have the U.S. to influence Taiwan. However, the United States’ pressure could also stimulate Taiwanese nationalism. Therefore, the best way for mainland China to reunify with Taiwan is to transform mainland China through economic development and democratization.

The solution of the Taiwan issue will take years and decades. Beijing should not expect Taiwan to accept reunification in the near future. Beijing’s policy toward Taiwan should respect Taiwan’s democracy but restrict Taiwan’s seeking international recognition. However, since Beijing has achieved great diplomatic advantage relative to Taiwan in the international arena, it should not harshly squeeze Taiwan’s international space. Certain extent of international space can help Taiwan to derive high utility from the status quo of peaceful separation and have less incentive to pursue independence. In

the 1990s, mainland China's missile deterrence, military threat, and squeezing Taiwan's international space, which decreased Taiwan's utility of the status quo of peaceful separation and increased the utility of independence, have contributed to the assertion of Taiwanese identity. On the other hand, since the United States is the key country to maintain the balance of power in the Taiwan Strait, the Sino-U.S. relations are the basis for relations between mainland China and Taiwan. As Beijing has well realized, it is essential to have a good relationship with the United States in order to contain the Taiwan independence movement. After September 11, mainland China has become a strategic partner of the United States in countering terrorism and in denuclearizing North Korea. In the near future, since the Sino-U.S. relations will probably be stable, the Taiwan independence movement would be restrained to some extent. However, in the 2004 presidential election, verbal assaults will be inevitable.

In the current period, the United States should not promise to help Taiwan defend itself against mainland China. The United States should not give a false impression to Taiwanese government that the United States will surely help Taiwan if a war breaks out. If so, there is a possibility that Taiwan would exploit the U.S. promise and bring the U.S. into war with mainland China. As long as mainland China does not stir up nationalism among its people, the United States should make clear that if Taiwan challenges the status quo of peaceful separation and declares independence, the United States will not help Taiwan defend itself against mainland China.

Now the United States has enormous advantage over mainland China in terms of military power. However, if mainland China can successfully achieve its on-going military modernization and channel its economic strength into military power, there is a possibility that the gap between the two countries in military power will decrease in the future. It will lead to the decrease in the value of  $h$ . Moreover, as mainland China continues to transform its economic and political systems, in the future there is a possibility that the incentive to join the war and defend Taiwan against mainland China  $i_1 - u_1$  will decrease. Moreover, along with the economic integration among Taiwan, mainland China and the United States, the cost of war for the United States  $w_1$  will

increase. As a result, in the future,  $i_1 - u_1 < w_1/h$  could be satisfied, which means that if a war breaks out between mainland China and Taiwan, the United States will not be willing to help to defend Taiwan. If this happens, the game structure concerning the security in the Taiwan Strait will be much simpler. As Chapter 3 Section III shows, when the United States' promise to help is no longer credible, the situation could be Scenario 14, 15, 16, or 17. What scenario the result will fall in depends on mainland China's utility for unification, Taiwan's utility for independence, the relative strengths between each other, and their costs of war. If mainland China becomes stronger and more aggressive, the situation in the Taiwan Strait will fall into Scenario 14. In contrast, if mainland China becomes weak or cares less about sovereignty, the situation will fall into Scenario 17. If mainland China falls in the middle ground, the situation will depend on Taiwan's preference. Generally speaking, by comparing the scenarios under the condition that the United States' promise to help Taiwan defend itself against mainland China is credible (Figure 3) with those under the condition that the United States' promise is incredible (Figure 6), we can find that the United States has played an important role in maintaining the peace in the Taiwan Strait. By promising to help Taiwan defend itself against mainland China, the United States can prevent mainland China from attacking Taiwan offensively when the Chinese utility of unification is relatively high or when its utility of unification is not high but Taiwan declares independence. When the U.S.'s promise becomes incredible, Taiwan's capacity to negotiate with mainland China will be much compromised. As a result, the future a few years or a decade will be an important moment for Taiwan to either declare independence or negotiate to unify under favorable arrangement.

## References

Agency France Presse. 2003. *Rice Reaffirms "One China Policy" on Taiwan*. October 15. Accessed: 15 October 2003 <<http://taiwansecurity.org/AFP/2003/AFP-101503.htm>>.

Associated Press. 2003. *Shaheen Says China Needs Taiwan's Help: U.S. Envoy Strays from Scripted Speech to Warn of PRC's Shaky Economy*. Accessed 15 October 2003 <<http://taiwansecurity.org/AP/2003/AP-101503.htm>>.

Chang, G. 1990. *Friends and Enemies: The United States, China and the Soviet Union, 1948-1972*. Stanford, California: Stanford University Press.

Chang, Jaw-ling Joanne. "Lessons from the Taiwan Relations Act." *Orbis* 44: 63-77.

Chao, Chien-min. 2002. "The Democratic Progressive Party's Factional Politics and Taiwan Independence." In *Taiwan in Troubled Times: Essays on the Chen Shui-bian Presidency*, ed. John F. Copper. River Edge, NJ: World Scientific Publishing Co. Pte. Ltd.

Charney, Jonathan I., and J. R. V. Prescott. 2000. "Resolving Cross-Strait Relations between China and Taiwan." *American Journal of International Law* 94: 453-477.

China Internet Information Center, N.D.a. *Joint Communique of the United States of America and the People's Republic of China (Shanghai Communique)*. Accessed: 10 August 2003 <<http://www.china.org.cn/english/china-us/26012.htm>>.

China Internet Information Center, N.D.b. *Joint Communique on the Establishment of Diplomatic Relations between the People's Republic of China and the United States of America*. Accessed: 10 August 2003 <<http://www.china.org.cn/english/china-us/26243.htm>>.

Cooper, John F. 2002. *Taiwan in Troubled Times: Essays on the Chen Shui-bian Presidency*. New Jersey: World Scientific.

Cox, Christopher. 1996. "Ambiguity about Defending Taiwan Risks War with the PRC: Peace through Strength ...or War Through Weakness?" *House Republican Policy Committee Policy Perspective*. February 26. Accessed: 23 September 2003 <[http://www.fas.org/news/taiwan/1996/hrpc\\_ambi.htm](http://www.fas.org/news/taiwan/1996/hrpc_ambi.htm)>.

Crane, George T. 1993. "China and Taiwan: Not yet 'Greater China'." *International Affairs* 69: 705-723.

Doyle, Michael W. 1997. *Ways of War and Peace: Realism, Liberalism, and Socialism*. New York: W. W. Norton and Company.

Federation of American Scientists Military Analysis Network. 1999. *First Taiwan Strait Crisis: Quemoy and Matsu Islands*. Accessed: 20 July 2003 <[http://www.fas.org/man/dod-101/ops/quemoy\\_matsu.htm](http://www.fas.org/man/dod-101/ops/quemoy_matsu.htm)>.

Federation of American Scientists Military Analysis Network. 2000a. *Second Taiwan Strait: Quemoy and Matsu Islands 23 Aug 1958 - 01 January 1959*. Accessed: 20 July 2003 <[http://www.fas.org/man/dod-101/ops/quemoy\\_matsu-2.htm](http://www.fas.org/man/dod-101/ops/quemoy_matsu-2.htm)>.

Federation of American Scientists Military Analysis Network. 2000b. *Taiwan Strait: 21 July 1995 to 23 March 1996*. Accessed: 20 July 2003 <[http://www.fas.org/man/dod-101/ops/taiwan\\_strait.htm](http://www.fas.org/man/dod-101/ops/taiwan_strait.htm)>.

Federation of American Scientists Military Analysis Network. N.D. "Background." *Taiwan Crisis*. Accessed: 20 July 2003 <<http://www.fas.org/man/dod-101/ops/taiwan-background.htm>>.

Garver, John W. 1997. *Face Off: China, the United States, and Taiwan's Democratization*. Seattle: University of Washington Press.

Hobbes, Thomas. 1651/1994. *Leviathan*, ed. Edwin Curley. Indianapolis: Hackett Publishing company, Inc.

Hughes, Christopher. 1997. *Taiwan and Chinese Nationalism: National Identity and Status in International Society*. New York: Routledge.

Huntington, Samuel P. 1993. "The Clash of Civilizations?" *Foreign Affairs*. summer.

International Committee for Human Rights in Taiwan. 2002. "President Chen: 'One Country on Each Side': Our Own Taiwanese Road." *Taiwan Communiqué* no. 102 (September), international edition. Accessed: 20 August 2003 <<http://www.taiwandc.org/twcom/tc102-int.pdf>>.

Keohane, Robert. 1986. "Realism, Neorealism, and the Study of World Politics." In *Neorealism and Its Critics*, ed. Robert Keohane. New York: Columbia University Press.

Lasater, M. 1989. *Policy in Evolution: The US Role in China's Unification*. Boulder, Colorado and London: Westview.

MacFarquhar, R. 1972. *Sino-American Relations 1949-1971*. Newton Abbot: David and Charles.

Ministry of Foreign Affairs of the PRC. 2000. *A Policy of 'One country, Two systems' on Taiwan*. Accessed on 1 August 2003 <<http://www.fmprc.gov.cn/eng/5713.html>>.

*New York Times*. 2001. "Bush Team Urges Holding Off Ship Radar Sale to Taiwan." By Sanger, David E., and Eric Schmitt. April 18. Accessed: 22 September 2003 <<http://taiwansecurity.org/NYT/2001/NYT-041801-2.htm>>.

Niou, Emerson M. S. 1998. "A Strategic Analysis of the Taiwan Independence Issue." Working Papers in Taiwan Studies, American Political Science Association (APSA) Conference Group on Taiwan Studies (CGOTS). Access: 10 January 2003 <<http://www.la.utexas.edu/research/cgots/>>.

O'Donnell, Guillermo. 1986. "Tensions in the Bureaucratic-Authoritarian State and the Question of Democracy." In *Promise of Development: Theories of Change in Latin America* Peter, ed. Klaren, Peter F., and Thomas Bossert. Boulder: Westview Press.

Rousseau, Jean-Jacques. 1756/1990. "State of War," In *Reading Rousseau in the Nuclear Age*, trans. Roosevelt, Grace. Philadelphia: Temple University Press.

Rousseau, Jean-Jacques. 1762/1950. *The Social Contract and the Discourses*, trans. Cole, G. D. H. New York: Dutton.

Roy, Denny. 2000. "Tension in the Taiwan Strait." *Survival* 42(1): 76-96.

Sheng, Lijun. 2002. "Whither Cross-Strait Relations: Problems Generated by Taiwan's 2000 Presidential Election." In *Taiwan in Troubled Times: Essays on the Chen Shui-bian Presidency*, ed. Copper, John F. River Edge, NJ: World Scientific Publishing Co. Pte. Ltd.

Strasser, Steven et al. 1995. "This Is Not A Right Way to Treat Others." *Newsweek*, Oct 23, Pp.12.

Su, Chi. 2002. *Domestic Determinants of Taiwan's Mainland Policy*. A paper presented at the Peace across the Taiwan Strait Conference, May 23-25. Accessed: 10 December 2002 <<http://www.taiwansecurity.org/TS/2002/Su-0502.htm>>.

*Taipei Times*, 2001. "'Chinese Confederation' verses 'One China'." By Lee Chang-kuei. February 23. Accessed 16 October 2003 <<http://taiwansecurity.org/TT/2001/TT-022301.htm>>.

*Taipei Times*. 2003a. "DDP must review its failing to win again." By Chin, Heng-wei. August 15, Pp. 8.

*Taipei Times*. 2003b. "Lien, Ma Say Loud No to HK's System, US Domination." By Wu, Debby, August 17.

Taiwan Affairs Office of the State Council, PRC, 2003a. *Renyuan Wanglai Tongji (Statistical Data for People' Travels)*. Accessed 30 August 2003 <<http://www.gwytb.gov.cn/jlwl/lajl20.asp>>

Taiwan Affairs Office of the State Council, PRC. 2003b. *Linian Liangan Jingji Guanxi Tongji Shuzi (Statistical Data for Bi-coastal Economic Relation in the Past Years)*. Accessed: 30 August 2003 <<http://www.gwytb.gov.cn/lajmsj.htm>>.

*Taiwan Relations Act*. 1979. Apr. 10, Public Law 96-8, 222 U.S. Code, secs. 3301-3316. Accessed: 22 September 2003 <<http://www.taiwandocuments.org/tra01.htm#3301>>.

Tien, H. 1950. *The Great Transition*. Stanford, California: Hoover Institution.

Truman, H. 1950. "Statement on the Mission of the Seventh Fleet in the Formosa Area." reprinted in *Sino-American Relations 1949-1971*. MacFarquhar, R. Newton Abbot: David and Charles 1972.

Tsai, George W. 2002. "Dynamic stability in Beijing-Taipei relations." In *Taiwan in Troubled Times: Essays on the Chen Shui-bian Presidency*, ed. Copper, John F. River Edge, NJ: World Scientific Publishing Co. Pte. Ltd.

Tsang, Steve. 2002. "A Sustainable Basis for Peace between China and Taiwan," *American Asian Review* XX(4): 65-83.

Waltz, Kenneth. 1979. *The Theory of International Politics*. Reading, Massachusetts: Addison Wesley.

White House. 2002a. *President Bush Speaks at Tsinghua University*. February 22. Accessed: 22 September 2003 <<http://www.whitehouse.gov/news/releases/2002/02/20020222.html#>>.

White House. 2002b. *The National Security Strategy of the United States of America*. Accessed: 22 September 2003 <<http://www.whitehouse.gov/nsc/nss.pdf>>.

Yang, Philip. 1999. *Taiwan's Legal Status: Going beyond the Unification-Independence Dichotomy*. Paper delivered at the CSIS Seminar on Cross-Strait Relations at the Turn of the Century, September 21-22, 1999, Washington D.C. Accessed: 10 December 2002 <<http://taiwansecurity.org/TS/Yang-9910-Taiwan's-Legal-Status.htm>>.

Yang, Philip. 2000. *Challenges to the U.S. East Asian Security Policy: Implications for Taiwan's Security*. Paper delivered at the conference of "The United States and Cross-Straits Relations since the Taiwan Elections," Center for East Asian and Pacific Studies University of Illinois at Urbana-Champaign, October 6-7, 2000. Accessed: 10 December 2002 <<http://taiwansecurity.org/TS/Yang-1000.htm>>.

Zhao, Suisheng. 1999. *Across the Taiwan Strait: Mainland China, Taiwan, and the 1995-1996 Crisis*. New York: Routledge.

## Vitae

Chengqiu Wu was born in a village of southern China in 1975, when the Great Cultural Revolution drew near to its end. He grew up in his family's love and had a peaceful childhood. He received his elementary and secondary educations from Yinling Elementary School and Wuchuan No1 Middle-High School, where he dreamed many dreams. From 1993 to 2000, he studied economics at Fudan University in Shanghai. From the village by the South China Sea to the metropolis of eastern China, he witnessed the most dramatic economic development and social change in human history. After earning a BA in economics and a Master of Economics in political economy from Fudan, he came to the United States and studied applied economics at Western Michigan University. Since fall 2001, he has been studying public and international affairs at Virginia Tech. The MA degree in political science is part of his plan of study here. He is interested in comparative politics, political economy, and international relations.